



Monitoring Citrix Delivery Controller

eG Innovations Product Documentation

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Chapter 1: Introduction

Citrix XenDesktop is a desktop virtualization system that centralizes and delivers virtual Windows desktops as a service to users anywhere. Virtual desktops are dynamically assembled on demand, providing users with personalized desktops each time they log on. XenDesktop delivers a high definition user experience over any connection including high latency wide area networks. The open architecture of XenDesktop offers choice and flexibility of virtualization platform and endpoints.

Figure 1.1 depicts the core architecture and operations of the Citrix XenDesktop solution.

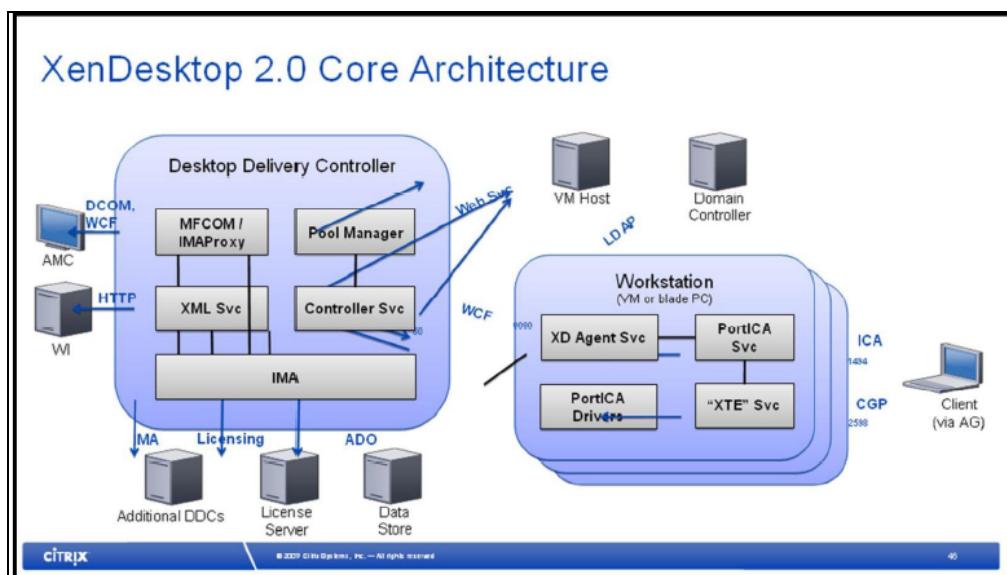


Figure 1.1: How the Citrix XenDesktop works?

With virtualization, users can access their virtual desktops from almost any computer. Typically, the connection will be from either a desktop appliance in the office or from a PC from home for remote desktop access. When connecting to the virtual desktop from a desktop appliance at work, users simply switch the device on and they are presented with an authentication request. If they are connecting to the virtual desktop from a home PC for remote desktop access, they will navigate to a Web page that looks identical to the desktop appliance authentication page. At this point, the users enter their credentials, and the next thing they will see is the virtual desktop which is identical to their corporate desktop in the office.

After authentication, a core component named the Desktop Delivery Controller (DDC), later renamed as the Delivery Controller, manages the assembly of users' virtual desktop environments, and brokers connections between users and their virtual desktops. This component further controls

the state of the desktops, starting and stopping them based on demand and administrative configuration.

Any issue related to the broker, no matter how minuscule – say, a split-second break in the availability of the DDC, or a marginal delay in user authentication by the DDC - can severely hamper the delivery of the XenDesktop solution, and significantly degrade the user experience with the virtual desktops. Since the XenDesktop technology assures virtual desktop users of the same quality of service that can be expected from local desktops, such anomalies, if allowed to recur, can damage both the reputation and revenue of the service providers. To avoid such adversities, the DDC should be continuously monitored.

eG Enterprise provides three specialized models for monitoring the *Delivery Controller – 3/4*; the *Delivery Controller 5*, and the *Delivery Controller model* (for Delivery Controller v7 and above). As is evident, each of these models caters to the monitoring requirements of the different versions of the Xen DDC. These models closely monitor the availability and all-round performance of the DDC; using these models, administrators can be proactively alerted if the service-levels desired from the broker are even slightly compromised – this way, the underlying issues can be resolved before performance of the broker and the XenDesktop service it delivers, nose-dives. Refer to the following chapters for the detailed discussion on each model:

- Citrix Delivery Controller v3-4 Monitoring Using eG Enterprise
- Citrix Delivery Controller v5 Monitoring Using eG Enterprise
- Citrix Delivery Controller v7 Monitoring Using eG Enterprise?

Chapter 2: Citrix Delivery Controller v3-4 Monitoring Using eG Enterprise

Figure 2.1 is a high level view of the architecture of XenDesktop 3.

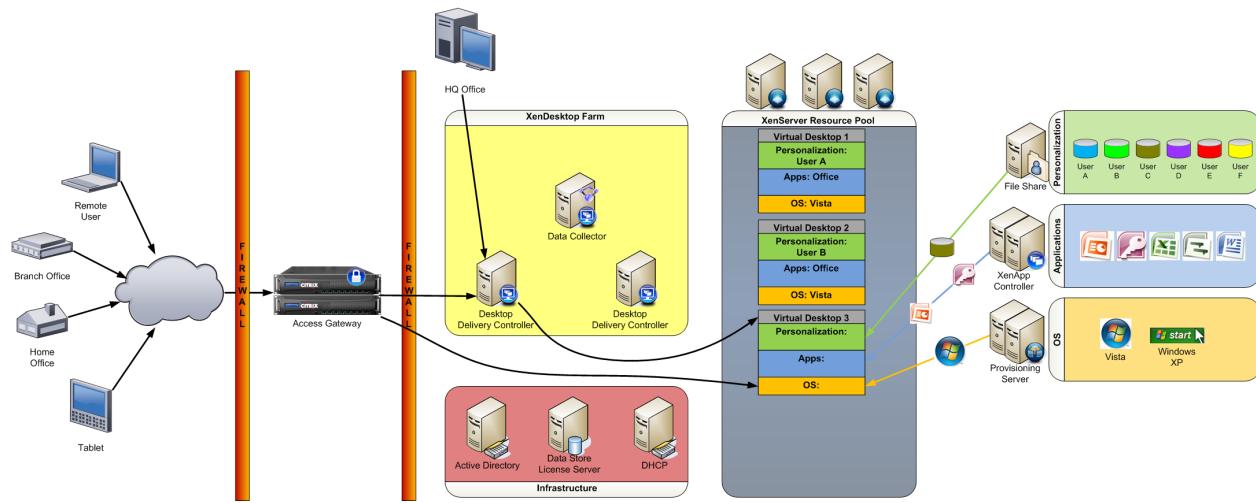


Figure 2.1: A high level view of the XenDesktop 3 architecture

As can be inferred from Figure 2.1, the Delivery Controller farm serves as the hub for the XenDesktop Architecture. The controllers in the farm are responsible for managing the pools of available virtual desktops as well as directing and monitoring user connections to the virtual desktops. Versions 3/4 of DDC are based on the CPS (XenApp) technology. It uses MFCOM/IMAProxy to communicate with the Access Management Console (AMC), which uses DCOM and Windows Communication Foundation (WCF). It communicates with the Web Interface using the XML service, just as XenApp does. The IMA service is used to communicate with other DDCs in the farm, with the License server, and the Datastore, just as with XenApp. The DDC also includes a Pool Manager, which is responsible for choosing a VM from the Desktop Group and assigning it to a user. Once the appropriate desktop operating system is identified, the Controller service of the DDC queries the Active Directory for user authorization and then sets up the PortICA user connection to the target VM. The DDC also includes a User Profile Manager, to manage user personalization settings in virtualized or physical Windows environments.

The DDCs use a central DataStore that contains static configuration information, such as desktop pool configuration, DDC membership and farm settings. VDA configuration data is also stored in the datastore.

In summary, the DDC integrates the following core technologies:

- Dynamic pooling, on-demand assignment, and pre-assignment of virtual desktops to users, based on appropriate policies, roles, or other criteria
- Fast, resilient connections, even over high-latency or bandwidth-constrained networks, using the ICA protocol, which includes SpeedScreen technologies
- Integration with virtualization infrastructures, enabling administrators to dynamically manage the state of virtual desktops to make best use of resources, deliver instant-on experience for the user, and enable the reversion to a known state of pooled desktops after each use
- A central management interface for all virtual desktops, whether they are VM-based, blade-based, or PC-based

Failure of any of these core functionalities may not only affect the performance of the broker, but can even temporarily/permantly suspend the XenDesktop service as a whole. If such adversities are to be averted, the Delivery Controller has to be monitored 24x7.

Chapter 3: How to Monitor the Citrix Delivery Controller v3/4 Using eG Enterprise?

eG Enterprise adopts an agent-based approach to monitoring the Citrix Delivery Controller v3/4. This approach requires that the eG agent be installed on any DDC in a DDC farm. This agent should then be configured to periodically execute tests, which use the **PowerShell SDK** of the DDC to collect a wide variety of performance statistics pertaining to that DDC/farm.

To enable the eG agent to use this SDK, the following pre-requisites need to be fulfilled:

- To monitor a 32-bit version of the Xen Desktop Controller, ensure that the **Citrix Desktop Delivery Controller PowerShell SDK** is available on the *admin/master* server of the DDC farm. You will find the SDK as an **msi** file in the **\support\ddcsdk** folder of the install media. Once the SDK is installed, follow the steps below:
 - Follow the Start -> Run menu sequence on the *admin/master* server of the DDC farm.
 - In the **Run** dialog box, type the command **cmd.exe**.
 - Once the command prompt appears, issue the command: **powershell.exe**
 -
 - This will launch the Powershell prompt window. Here, issue the following command:
set-executionpolicy unrestricted
 - Next, close the Powershell prompt window.

To monitor a 64-bit version of the Xen Desktop Delivery Controller, you may want to use a 64-bit SDK. For that, install the DDC SDK available in the **x64** folder in the **/support/ddcsdk** folder of the install media. Then, follow the steps discussed below:

- Follow the Start -> Run menu sequence on the *admin/master* server of the DDC farm.
- In the **Run** dialog box, type the command **C:\windows\syswow64\cmd.exe**.
- Once the command prompt appears, issue the command: **powershell.exe**
-
- This will launch the Powershell prompt window. Here, issue the following command:
set-executionpolicy unrestricted

- Next, close the Powershell prompt window.
- Return to the **Run** dialog box (by following the Start -> Run menu sequence), and enter **c:\windows\syswow64\cmd.exe** therein.
- In the command prompt that appears, issue the following command:

```
powershell -psconsolefile "c:\program files (x86)\citrix\desktop delivery controller\powershell\xdcommands.psc1" -command c:\egurkhalib\xenddcall.ps1 <ip address of ddc machine>
```
- If the above command executes successfully, install the 32-bit version of the eG agent and proceed to monitor the DDC server.
- Make sure that the **Microsoft .NET 3.5 framework** is installed on the *admin/master server* of the DDC farm. If not available, then, connect to the URL: <http://www.microsoft.com/downloads/details.aspx?FamilyId=333325FD-AE52-4E35-B531-508D977D32A6&displaylang=en>, download the installable, and then install the framework on the target host.
- Make sure that the **Microsoft PowerShell SDK 1.0** pre-exists on the *admin/master server* of the DDC farm. If not available, then, connect to the URL: <http://www.microsoft.com/windowsserver2003/technologies/management/powershell/download.mspx>, download the installable, and then install the SDK on the target host.

Once this is done, the eG agent begins collecting the required metrics from the DDC, and presents them to users with the help of the monitoring model of Figure 4.1. To start monitoring the DDC, first you have to manage the DDC component using the procedure discussed in the following section.

3.1 Managing the Citrix Delivery Controller v3/4

To achieve this, follow the steps given below:

1. Log into the eG administrative interface.
2. eG Enterprise cannot automatically discover the Citrix Delivery Controller v3/4. You need to manually add the server using the **COMPONENTS** page (see Figure 3.1) that appears when the Infrastructure -> Components -> Add/Modify menu sequence is followed. Remember that components manually added are managed automatically.

COMPONENT

This page enables the administrator to provide the details of a new component

All Citrix XenDesktop Broker v3/4

Component information

Host IP/Name: 192.168.10.1

Nick name: xendtbro

Port number: 80

Monitoring approach

Agentless:

Internal agent assignment: Auto Manual

External agents: 192.168.9.70

Add

Figure 3.1: Adding a Citrix Delivery Controller v3/4

3. Specify the **Host IP** and the **Nick name** of the Citrix Delivery Controller v3/4 server in Chapter 3. Then click the **Add** button to register the changes.
4. The tests for this component will be configured automatically. Once you add the component, sign out of the eG administrative interface.

Chapter 4: Monitoring the Citrix Delivery Controller v3/4

eG Enterprise provides a *Citrix Delivery Controller – 3/4* model that can be used for monitoring version 3/4 of the Xen DDC.

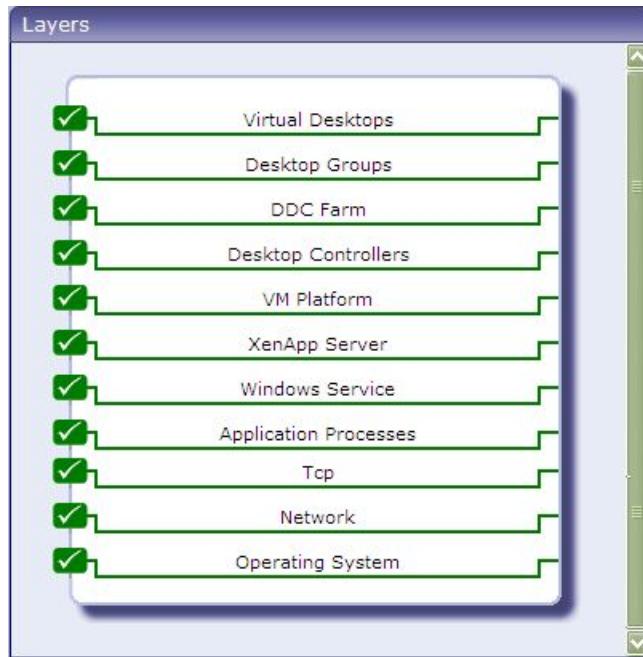


Figure 4.1: Layer model of the DDC

The metrics mapped to every layer of this model enable administrators to find quick and accurate answers to the following performance queries:

- Is the IMA communication between the DDC and the other servers in the farm (i.e., other DDCs/the License server/datastore), normal?
- Is the DDC able to connect to the datastore?
- Are any hosts unavailable in a desktop group? Which are the unavailable hosts and which desktop group do they belong to?
- Is the DDC healthy or has the alert logs of the DDC captured any critical errors/warnings?
- Is the DDC port available? If so, how quickly is the DDC responding to requests?
- How many desktops exist within a desktop group? On which hosting infrastructure are these virtual desktops operating? How many more desktops on the hosting infrastructure are yet to be allocated to a desktop group?

- Are there any powered off desktops within a desktop group?
- Which desktops in a desktop group are currently in use?
- Are there idle desktops within a desktop group?
- Does any desktop group have desktops that are currently in an 'Unknown' powerstate?
- Which users to DDC have administrator rights?
- Is the DDC the farm master?
- How many DDCs are in the farm? Which ones are these?
- How many desktop groups have been configured on the farm?
- How many of the desktop groups are currently unavailable? Which farms do they belong to?
- Is the license server currently available?
- Is the virtual desktop agent unavailable on any virtual desktop?
- Is any virtual desktop in the maintenance mode currently?
- Is any virtual desktop disabled?
- Is any virtual desktop unavailable?
- Is any virtual desktop currently in an 'Unknown' power state?
- Is any VD unavailable over the network? which one is it?
- Are too many sessions to virtual desktops logging out?

Since the last 5 layers of the monitoring model have already been dealt with in the *Monitoring Unix and Windows Servers* document, let us proceed to look at the remaining layers of Figure 4.1 in the forthcoming sections.

4.1 The XenApp Server Layer

As already mentioned, the DDC is based on the Citrix Presentation Server (i.e., XenApp) technology. This component uses the IMA service of XenApp to communicate with other DDCs in the farm, with the License server, and the Datastore. The use of the XenApp technology also ensures that the XenDesktop deployment benefits from the efficiencies associated with application streaming and virtualization.

Using the tests mapped to **XenApp Server** layer, you can be promptly alerted to unusually high IMA traffic, and slowdowns in application enumerations/resolutions.



Figure 4.2: The tests mapped to the XenApp Server layer

4.1.1 Citrix Enumerations Test

This test reports the number of filtered application enumerations per second.

Target of the test : A Citrix Delivery Controller v3/4

Agent deploying the test : An internal agent

Outputs of the test : One set of results for every Citrix server being monitored.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the specified host listens to.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Filtered application enumerations	Indicates the number of WI logons/ application enumerations handled by an XML Broker per second.	Enums/Sec	The value of this measure enables administrators to accurately assess the impact of growth / stress on the XML brokers and zone data collectors.

4.1.2 Citrix IMA Test

This test reports various statistics relating to the Citrix Independent Management Architecture (IMA). Citrix IMA is an architectural model and a protocol for server to server communications.

This test reports the IMA-related communications from this DDC. One set of results is reported for each communication initiated by the DDC.

Target of the test : A Citrix Delivery Controller v3/4

Agent deploying the test : An internal agent

Outputs of the test : One set of results for every IMA communication initiated by the Citrix Delivery Controller v3/4 being monitored.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the DDC listens to.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Data received rate	Represents the rate at which data is received by this DDC from another server (i.e., a DDC/License server/datastore) in the farm.	KBytes/sec	Evaluate the IMA traffic periodically to explore alternative configurations (e.g., splitting a farm) to minimize network overheads. The IMA traffic between servers can be high if the indirect mode of data store access is used - in this case, only one server in the farm directly accesses the data store. All other servers rely on this server to access the data store
Data transmit rate	Represents the rate at which IMA data is sent by this DDC to server (i.e., a	KBytes/sec	

Measurement	Description	Measurement Unit	Interpretation
	DDC/License server/datastore) in the farm.		
Network connections	Number of active IMA network connections from this DDC to another server (i.e., a DDC/License server/datastore).	Number	

4.1.3 Citrix Server Test

This test generates statistics relating to the application streaming capability of the Citrix XenApp technology used by the Delivery Controller.

Target of the test : A Citrix Delivery Controller v3/4

Agent deploying the test : An internal agent

Outputs of the test : One set of results for every server being monitored.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the specified host listens to.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Application enumerations	Represents the number of application enumerations per second.	Enums/Sec	The DDC allows a user to get a listing of all available applications published in the farm. This enumeration of resources takes place automatically every time the user launches the Citrix XenDesktop solution. This metric

Measurement	Description	Measurement Unit	Interpretation
			reflects the rate of application enumerations. An unusually high number of enumerations can slow down the XenDesktop.
Application resolutions	Represents the number of application resolutions per second	Resolutions/sec	When the user clicks the link to a published application, the link is resolved to an application. This metric reflects the workload on the server in terms of application accesses. The rate of application resolutions depends on the number of users connecting to the farm, duration for which the average user stays logged on, and the number of published applications. If the rate of application resolutions is excessively high, consider creating multiple zones in the farm to reduce the load on the data collector.
Datastore connection failure	Indicates how long the DDC was disconnected from the datastore.	Mins	The data store of the DDC hosts centralized configuration data for a server farm. The data store is critical for central administration of the server farm. Hence, any loss of communication between a DDC and its data store can result in inconsistencies in the configuration data. A high value of this measure is hence a cause for concern as it indicates that the DDC has been disconnected from the datastore for a long time.
Datastore reads	The rate of data read from the IMA data store.	KBytes/Sec	This metric reports the workload on the data store. Since it is a central repository for a farm, slowdown of the data store can impact the performance of the farm. Data store traffic is usually high during server startup.
Datastore writes	The rate of data written	KBytes/Sec	This metric reports the workload on

Measurement	Description	Measurement Unit	Interpretation
	into the IMA data store.		the data store. Since it is a central repository for a farm, slowdown of the data store can impact the performance of the farm.
Dynamic store reads	The rate of data reads from the IMA Dynamic store	KBytes/Sec	The dynamic store maintains information that changes frequently such as current sessions, disconnected sessions, server load, etc. This metric denotes the read rate of data from the dynamic store.
Dynamic store writes	The rate of data written into the IMA Dynamic store.	KBytes/Sec	The dynamic store maintains information that changes frequently such as current sessions, disconnected sessions, server load, etc. This metric denotes the rate at which data is written to the dynamic store.
LH cache reads	The rate of data read from the IMA Local Host Cache	KBytes/Sec	<p>Each server has a subset of the data store called the local host cache. The local host cache performs two functions:</p> <ul style="list-style-type: none"> • It permits the server to function in the absence of a connection to the data store. • Improves performance by caching information used by ICA clients for enumeration and application resolution. <p>The larger the cache, greater the hits to the cache and fewer data store accesses. Comparing the read rate from the local host cache and the data store, the administrator can assess the cache efficiency.</p>

Measurement	Description	Measurement Unit	Interpretation
LH cache writes	The rate of data written into the IMA Local Host Cache written/sec.	KBytes/Sec	
Zone elections	Indicates the number of zone elections that have occurred.	Number	Zones in a DDC farm serve two purposes - (a) to collect data from member servers in a hierarchical structure; (b) efficiently distribute changes to all servers in the farm. The first server in a farm is the data collector of the farm by default. Elections within a zone are used to determine the data collector for the zone. Frequent zone elections in a zone can result in increased network traffic.
Zone elections won	Indicates the number of times a DDC has won a zone election.	Number	

4.1.4 Server Work Items Test

This test reports critical statistics related to the status of work items.

Target of the test : A Citrix Delivery Controller v3/4

Agent deploying the test : An internal agent

Outputs of the test : One set of results for every Citrix server monitored.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the specified host listens to.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Resolution work items currently being executed	Reports the number of resolution work items that are currently being executed.	Number	
Resolution work items ready for execution	Indicates the number of resolution work items that are currently ready to be executed.	Number	
Work items currently being executed	Indicates the number of work items that are currently being executed.	Number	
Work items pending execution	Indicates the current number of work items that are not yet ready to be executed.	Number	
Work items ready for execution	Indicates the number of work items that are ready to be executed currently by IMA Threads.	Number	Attention is needed if this measure is sustained at 2 for one minute.

4.1.5 Citrix License Stats Test

This test shows the statistics of the license server while it is being accessed by the DDC. This test is disabled by default. To enable the test, go to the **ENABLE / DISABLE TESTS** page using the menu sequence: Agents -> Tests -> Enable/Disable, pick the *Deliver Controller- 3/4* as the **Component type**, set *Performance* as the **Test type**, choose this test from the **DISABLED TESTS** list, and click on the < button to move the test to the **ENABLED TESTS** list. Finally, click the **Update** button.

Target of the test : A Citrix Delivery Controller v3/4

Agent deploying the test : An internal agent

Outputs of the test : One set of results for every server being monitored.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the specified host listens to.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Avg license checkin response time	Indicates the average license check-in response time.	Secs	
Avg checkout response time	Indicates the average license check-out response time.	Secs	
Last recorded checkin time	Indicates the last recorded license check-in response time.	Secs	
Last recorded checkout time	Indicates the last recorded license check-out response time.	Secs	
License server connection failure	Indicates the duration for which the DDC server was disconnected from the License server.	Mins	Any value greater than 0 implies that the DDC is having trouble connecting to the license server.

4.1.6 Citrix XML Threads Test

This test monitors the usage of XML threads, and reports whether or not the XML service has adequate threads for processing requests. This test is disabled by default. To enable the test, go to the **ENABLE / DISABLE TESTS** page using the menu sequence : Agents -> Tests -> Enable/Disable, pick the desired **Component type**, set *Performance* as the **Test type**, choose the test from the **DISABLED TESTS** list, and click on the < button to move the test to the **ENABLED TESTS** list. Finally, click the **Update** button.

Target of the test : A Citrix Delivery Controller v3/4

Agent deploying the test : An internal agent

Outputs of the test : One set of results for every Citrix server monitored.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the specified host listens to.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Max XML threads	Indicates the maximum number of XML threads.	Number	
Busy XML threads	Indicates the number of units of work the XML service is currently processing.	Number	By default, the maximum number of requests that the XML service can process at any one time is 16. If this measure is sustained at 16 for one minute or longer, it indicates that all the XML threads have been used up and the XML service cannot service any more requests.
Current XML threads	Indicates the current number of XML threads.	Number	

4.2 The VM Platform Layer

Virtual desktop groups consist of virtual desktops that are pooled, pre-assigned, or assigned on first use. Each group can contain only one type of desktop. These virtual desktops can run on PCs, blades, or virtual machines (VMs) provided through a virtualization infrastructure. For every group, this layer reports the availability of the server that hosts the virtual desktops in the group.

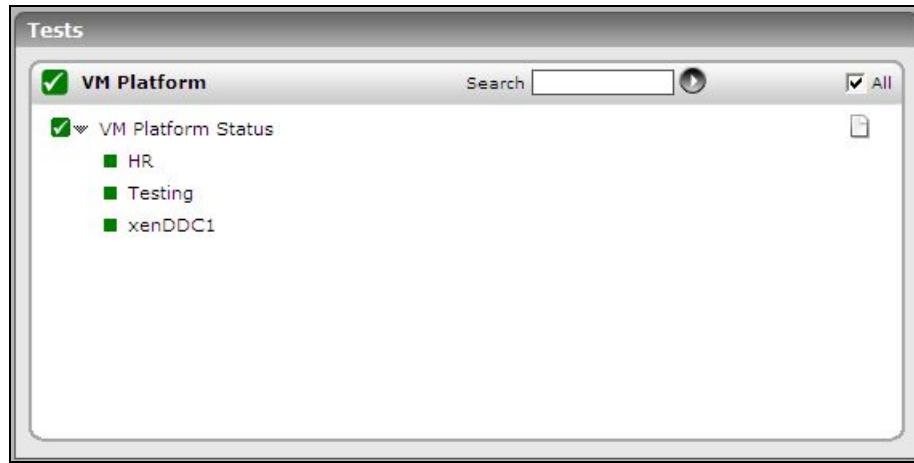


Figure 4.3: The tests mapped to the VM Platform layer

4.2.1 VM Platform Status Test

This test auto-discovers the desktop groups configured on the DDC, and reports the availability of the server that hosts the virtual desktops in each group. Whenever a user is unable to access his/her desktop, this test will enable administrators to determine whether it is owing to the hosting infrastructure (i.e., the host server) being unavailable.

Target of the test : A Citrix Delivery Controller v3/4

Agent deploying the test : An internal agent

Outputs of the test : One set of results for every desktop group configured on the Citrix Delivery Controller v3/4 being monitored.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The host for which the test is to be configured.
Port	Refers to the port at which the specified host listens to.
DD Frequency	Refers to the frequency with which detailed diagnosis measures are to be generated for this test. The default is 1:1. This indicates that, by default, detailed measures will be generated every time this test runs, and also every time the test detects a problem. You can modify this frequency, if you so desire. Also, if you intend to disable the detailed diagnosis capability for this test, you can do so by specifying <i>none</i> against DD frequency.

Parameter	Description
Detailed Diagnosis	<p>To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Host infrastructure availability	Indicates whether the server hosting the virtual desktops in this group are currently available or not.	Percent	If the value of this measure is 100, it indicates that the server is available. The value 0 on the other hand, indicates that the server is not available. To know more details about the server, use the detailed diagnosis of this measure.

The detailed diagnosis of the *Host infrastructure availability* measure reveals the IP address of the server that hosts the virtual desktops in a desktop group, the platform on which the server operates, and the name of the user who has access to the server.

Component	DDC:80	Measured By	DDC								
Test	VM Platform Status	Description	Testing								
Measurement	Host infrastructure availability										
Timeline	1 hour	From	Aug 06, 2009 Hr 9 Min 16								
		To	Aug 06, 2009 Hr 10 Min 16								
<input type="button" value="Submit"/> <input type="button" value="CSV"/> <input type="button" value="Print"/>											
Shows the details of Hosting infrastructure <table border="1"> <thead> <tr> <th>Time</th> <th>User Name</th> <th>IP Address</th> <th>Provider</th> </tr> </thead> <tbody> <tr> <td>Aug 06, 2009 09:53:24</td> <td>root</td> <td>192.168.10.164</td> <td>Citrix Xen VM infrastructure (included with XenDesktop)</td> </tr> </tbody> </table>				Time	User Name	IP Address	Provider	Aug 06, 2009 09:53:24	root	192.168.10.164	Citrix Xen VM infrastructure (included with XenDesktop)
Time	User Name	IP Address	Provider								
Aug 06, 2009 09:53:24	root	192.168.10.164	Citrix Xen VM infrastructure (included with XenDesktop)								

Figure 4.4: The detailed diagnosis of the Host infrastructure availability measure

4.3 The Desktop Controllers Layer

Using the tests mapped to this layer, you can determine the following:

- Whether a connection to the DDC is available or not;
- The overall health of the DDC in terms of how error-prone it is;
- The availability and responsiveness of the DDC to web-based virtual desktop requests from users;

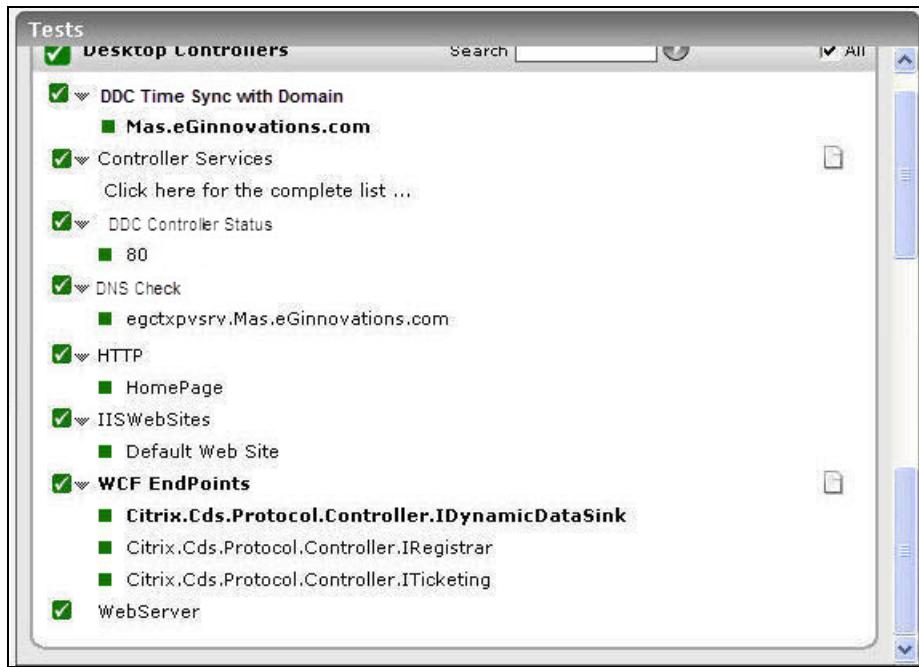


Figure 4.5: The tests mapped to the Desktop Controllers layer

4.3.1 Time Sync with Domain Test

DDC will not be able to launch VMs that are in an *unregistered* state. The virtual desktop agent executing on a VM might be unable to register the desktop with the DDC (hence, the *unregistered* state) owing to many reasons; the most important of them is the lack of time synchronization between the DDC and the Active Directory server it integrates with for authenticating user logins.

If virtual desktops are found to be in an *unregistered* state, you can use this test to check whether the DDC time-syncs with the AD server. If this test reports an error in time synchronization, then, you can easily conclude that this is the cause for the unregistered state of the virtual desktops.

Target of the test : A Citrix Delivery Controller v3/4

Agent deploying the test : An internal agent

Outputs of the test : One set of results for the domain name of the AD server with which the DDC integrates.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the specified host listens to.
Detailed Diagnosis	<p>To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation						
Domain time synchronization status:	Indicates whether the DDC time syncs with the domain controller.		<p>This measure reports the value Ok if the DDC time-syncs with the AD server. The value Error , on the other hand, is reported if the DDC time does not sync with the AD server's time stamp. The numeric values that correspond to the above-mentioned states are as follows:</p> <table border="1"> <thead> <tr> <th>State</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Ok</td><td>1</td></tr> <tr> <td>Error</td><td>0</td></tr> </tbody> </table> <p>Note: By default, this measure reports the</p>	State	Numeric Value	Ok	1	Error	0
State	Numeric Value								
Ok	1								
Error	0								

Measurement	Description	Measurement Unit	Interpretation
			<p>above-mentioned states while indicating the time sync status of the DDC with the domain controller. However, the graph of this measure will represent states using the corresponding numeric equivalents only – i.e., 0 and 1.</p> <p>If this measure reports the value <i>Error</i>, then, you can use the detailed diagnosis of this measure to know the time stamp of the AD server when the problem occurred.</p>

If the *Domain time synchronization status* measure reports the value *Error*, then, you can use the detailed diagnosis of this measure to know the time stamp of the AD server when the problem occurred.

Domain Controller(s) Time	
Time	DC Time
Jan 10, 2011 15:45:02	Date/Time from Mas.eGinnovations.com : 1/1/0001 5:30:00 AM

Figure 4.6: The detailed diagnosis of the Domain time synchronization status measure

4.3.2 DNS Check Test

To be able to successfully register with the DDC, the virtual desktop agent executing on the virtual desktops should be able to see the correct IP address of the DDC. If the DNS server is incorrectly configured, then it will not be able to resolve the IP address of the DDC to its domain name, thereby causing desktop registration to fail; as a result, DDC will not be able to deliver virtual desktops on-demand to users.

This test brings DNS misconfigurations to light by reporting whether the DNS server is able to resolve the IP address of the DDC to its fully qualified domain name. If this test reports an error, then you can easily conclude that this is the reason why registration failed.

Note:

This test integrates with XDPing to report metrics. The XDPing tool is a command-line based application which automates the process of checking for the causes of common configuration issues in a XenDesktop environment. The tool can be used to verify configuration settings on both the XenDesktop Broker and VDA machines, both from the console and remotely.

To enable the eG agent to integrate with XDPing, you need to download the XDPing tool from the URL: <http://support.citrix.com/article/CTX123278>, and then, copy it to the <EG_INSTALL_DIR>\eGurkha\bin directory on the agent host.

Target of the test : A Citrix Delivery Controller v3/4

Agent deploying the test : An internal agent

Outputs of the test : One set of results for the DNS server that the DDC uses.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the specified host listens to.
Detailed Diagnosis	<p>To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
DNS lookup status	Indicates whether the		This measure reports the value <i>Ok</i> if

Measurement	Description	Measurement Unit	Interpretation						
	DNS server is able to resolve the IP address of the DDC to its fully qualified domain name.		<p>the DNS server is able to resolve the IP address of the DDC to its domain name. The value <i>Error</i>, on the other hand, is reported if the DNS server is not able to resolve the IP address of the DDC to its domain name. The numeric values that correspond to the above-mentioned states are as follows:</p> <table border="1"> <thead> <tr> <th>State</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Ok</td><td>1</td></tr> <tr> <td>Error</td><td>0</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned states to indicate whether the DNS is properly configured or not. However, the graph of this measure will represent the states using their corresponding numeric equivalents only – i.e., 0 and 1.</p>	State	Numeric Value	Ok	1	Error	0
State	Numeric Value								
Ok	1								
Error	0								

4.3.3 Data Store Check Test

When a controller farm is deployed, it must have an associated data store. The farm data store is where persistent information about the farm, such as configuration information and administrator account information, is stored. By default, a database for this is created locally when you create your server farm, but you can choose to use a database on a separate server.

Controllers in a farm query the data store for configuration information when attempting to come online. If the data store is unavailable or is inaccessible for long hours, controllers in the farm will remain offline the whole time, thus denying users access to virtual desktops. To avoid this, administrators can run the **Data Store Check** test at frequent intervals, check whether/not the controller is able to connect to the data store, and in this way, detect connection failures before farm

users complain. In the event of a connection failure, administrators can also use the detailed metrics collected by this test to determine the reason for the connection failure and resolve it.

Target of the test : A Citrix Delivery Controller v3/4

Agent deploying the test : An internal/remote agent

Outputs of the test : One set of results for the Delivery Controller that is being monitored.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the specified host listens to.
DSCheckPath	This test uses Citrix's Data Store Checker tool to verify whether/not the monitored DDC is able to connect to the data store. To enable the test to use this tool, you need to specify the full path to the location of DSCheck.exe in the DSCheckPath text box. For instance, your path can be: <i>C:\Program Files (x86)\Citrix\system32</i> .
Detailed Diagnosis	<p>To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Connectivity status	Indicates whether the DDC succeeded or failed in establishing a		The values that this measure can take and their corresponding numeric values are as follows:

Measurement	Description	Measurement Unit	Interpretation	
			Measure Value	Numeric Value
	connection with the data store.		Failure	0
			Success	1
			<p>If the value reported is <i>Failure</i>, you can use the detailed diagnosis of this test to determine the reason for the connection failure.</p> <p>Note:</p> <p>By default, this measure reports the above-mentioned Measure Values to indicate the connectivity status of the data store. However, the graph of this measure will represent the same using the numeric equivalents only.</p>	

4.3.4 WCF EndPoints Test

The Windows Communication Foundation (or WCF) is an application programming interface (API) in the .NET Framework for building connected, service-oriented applications.

WCF is designed in accordance with service oriented architecture principles to support distributed computing where services are consumed by consumers. Clients can consume multiple services and services can be consumed by multiple clients. Services are loosely coupled to each other. Services typically have a WSDL interface (Web Services Description Language) which any WCF client can use to consume the service, irrespective of which platform the service is hosted on. WCF implements many advanced web services (WS) standards such as WS-Addressing, WS-ReliableMessaging and WS-Security.

A WCF client connects to a WCF service via an Endpoint. Each service exposes its contract via one or more endpoints. An endpoint has an address, which is a URL specifying where the endpoint can be accessed, and binding properties that specify how the data will be transferred.

Communication between virtual desktop machines and DDC controllers uses Microsoft's WCF. If virtual desktops are unable to connect to the WCF endpoints or cannot consume the services

provided by the endpoints, then virtual desktop registration will fail; consequently, users may be denied access to critical desktops.

Using this test, you can be promptly alerted to the unavailability of any WCF endpoint or the inability of virtual desktops to consume services provided by any endpoint.

Target of the test : A Citrix Delivery Controller v3/4

Agent deploying the test : An internal agent

Outputs of the test : One set of results for each WCF endpoint providing communication services between the DDC and virtual desktops.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the specified host listens to.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation						
Connection status	Indicates whether connection to this endpoint is available or not.		<p>This measure reports the value <i>Ok</i> if the connection to the endpoint is available. The value <i>Error</i>, on the other hand, is reported if the connection to the endpoint is unavailable. The numeric values that correspond to the above-mentioned states are as follows:</p> <table border="1"> <thead> <tr> <th>State</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Ok</td><td>1</td></tr> <tr> <td>Error</td><td>0</td></tr> </tbody> </table> <p>Note: By default, this measure reports the</p>	State	Numeric Value	Ok	1	Error	0
State	Numeric Value								
Ok	1								
Error	0								

Measurement	Description	Measurement Unit	Interpretation						
			above-mentioned states to indicate whether connection to the endpoint is available or not. However, the graph of this measure will represent the states using their corresponding numeric equivalents only – i.e., 0 and 1.						
Service status	Indicates whether virtual desktops are able to consume services provided by this endpoint.		<p>This measure reports the value <i>Ok</i> if the endpoint services are available for consumption. The value <i>Error</i>, on the other hand, is reported if the endpoint services cannot be consumed. The numeric values that correspond to the above-mentioned states are as follows:</p> <table border="1"> <thead> <tr> <th>State</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Ok</td><td>1</td></tr> <tr> <td>Error</td><td>0</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned states to indicate whether endpoint services can be consumed or not. However, the graph of this measure will represent the states using their corresponding numeric equivalents only – i.e., 0 and 1.</p>	State	Numeric Value	Ok	1	Error	0
State	Numeric Value								
Ok	1								
Error	0								

Note:

This test integrates with XDPing to report metrics. The XDPing tool is a command-line based application which automates the process of checking for the causes of common configuration issues in a XenDesktop environment. The tool can be used to verify configuration settings on both the XenDesktop Broker and VDA machines, both from the console and remotely.

To enable the eG agent to integrate with XDPing, you need to download the XDPing tool from the URL: <http://support.citrix.com/article/CTX123278> , and then, copy it to the <EG_INSTALL_DIR>\eGurkha\bin directory on the agent host.

4.3.5 Controller Services Test

This test auto-discovers the critical services executing on the Xen Delivery Controller, and reports the status of each service. With the help of this test, you can promptly detect which services are not running currently.

Target of the test : A Citrix Delivery Controller v3/4

Agent deploying the test : An internal agent

Outputs of the test : One set of results for each service auto-discovered from the Delivery Controller.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the specified host listens to.
Detailed Diagnosis	<p>To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation						
Service status	Indicates whether this service is currently running or not.		<p>This measure reports the value <i>Ok</i> if the service is running. The value <i>Error</i>, on the other hand, is reported if the service or any of its dependent services is not running. The numeric values that correspond to the above-mentioned states are as follows:</p> <table border="1"> <thead> <tr> <th>Measure Value</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Ok</td><td>1</td></tr> <tr> <td>Error</td><td>0</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned states to indicate service availability. However, the graph of this measure will represent the states using their corresponding numeric equivalents only – i.e., 0 and 1. If this measure reports the value <i>Error</i>, then, you can use the detailed diagnosis of this test to figure out what is causing the error.</p>	Measure Value	Numeric Value	Ok	1	Error	0
Measure Value	Numeric Value								
Ok	1								
Error	0								

Note:

This test integrates with XDPing to report metrics. The XDPing tool is a command-line based application which automates the process of checking for the causes of common configuration issues in a XenDesktop environment. The tool can be used to verify configuration settings on both the XenDesktop Broker and VDA machines, both from the console and remotely.

To enable the eG agent to integrate with XDPing, you need to download the XDPing tool from the URL: <http://support.citrix.com/article/CTX123278>, and then, copy it to the <EG_INSTALL_DIR>\eGurkha\bin directory on the agent host.

4.3.6 Xen DDC Alerts Test

This test monitors the log files of the DDC to capture errors/warnings of configured patterns.

Target of the test : A Citrix Delivery Controller v3/4

Agent deploying the test : An internal agent

Outputs of the test : One set of results for every *alertfile* and *searchpattern* combination.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	The port at which the server listens.
AlertFile	<p>Specify the path to the alert log file to be monitored. For eg., <i>C:/cds/controller.log</i>. Multiple log file paths can be provided as a comma-separated list - eg., <i>c:/cds/pool.log,C:/cds/controller.log</i>.</p> <p>Also, instead of a specific log file path, the path to the directory containing log files can be provided - eg., <i>c:/cds</i>. This ensures that eG monitors the most recent log files in the specified directory. Specific log file name patterns can also be specified. For example, to monitor the latest log files with names containing the string 'pool', the parameter specification can be, <i>c:/cds/*pool*</i>. Here, '*' indicates leading/trailing characters (as the case may be). In this case, the eG agent first enumerates all the log files in the specified path that match the given pattern, and then picks only the latest log file from the result set for monitoring.</p> <p>You can also configure the path in the following format: <i>Name@logfilepath</i>. Here, <i>Name</i> represents the display name of the path being configured. Accordingly, the parameter specification for the 'pool' example discussed above can be: <i>pool@/tmp/db/*pool*</i>. In this case, the display name <i>pool</i> will alone be displayed as the descriptor of this test.</p> <p>Every time this test is executed, the eG agent verifies the following:</p> <ul style="list-style-type: none"> • Whether any changes have occurred in the size and/or timestamp of the log files that were monitoring during the last measurement period; • Whether any new log files (that match the AlertFile specification) have been newly added since the last measurement period;

Parameter	Description
	If a few lines have been added to a log file that was monitored previously, then the eG agent monitors the additions to that log file, and then proceeds to monitor newer log files (if any). If an older log file has been overwritten, then, the eG agent monitors this log file completely, and then proceeds to monitor the newer log files (if any).
SearchPattern	<p>Enter the specific patterns of alerts to be monitored. The pattern should be in the following format: <PatternName>:<Pattern>, where <PatternName> is the pattern name that will be displayed in the monitor interface and <Pattern> is an expression of the form - *expr* or expr or *expr or expr*, etc. A leading '*' signifies any number of leading characters, while a trailing '*' signifies any number of trailing characters.</p> <p>For example, say you specify <i>XenFactory</i>:*<i>XenFactory</i>*, in the SearchPattern text box. This indicates that "XenFactory" is the pattern name to be displayed in the monitor interface. "*<i>XenFactory</i>*" indicates that the test will monitor only those lines in the log which contain the term "XenFactory".</p> <p>A single pattern may also be of the form e1+e2, where + signifies an OR condition. That is, the <PatternName> is matched if either e1 is true or e2 is true.</p> <p>Multiple search patterns can be specified as a comma-separated list. For example: <i>XenFactory</i>:*<i>XenFactory</i>*,<i>LicenseRetry</i>:*<i>LicenseRetryThreadBody</i>*</p> <p>If the AlertFile specification is of the format <i>Name@filepath</i>, then the descriptor for this test in the eG monitor interface will be of the format: <i>Name:PatternName</i>. On the other hand, if the AlertFile specification consists only of a comma-separated list of log file paths, then the descriptors will be of the format: <i>LogFilePath:PatternName</i>.</p> <p>If you want all the messages in a log file to be monitored, then your specification would be: <PatternName>:*</p>
Lines	<p>Specify two numbers in the format x:y. This means that when a line in the alert file matches a particular pattern, then x lines before the matched line and y lines after the matched line will be reported in the detail diagnosis output (in addition to the matched line). The default value here is 0:0. Multiple entries can be provided as a comma-separated list.</p> <p>If you give 1:1 as the value for Lines, then this value will be applied to all the patterns specified in the SearchPattern field. If you give 0:0,1:1 as the value for Lines and if the corresponding value in the SearchPattern text box is like <i>XenFactory</i>:*<i>XenFactory</i>*,<i>LicenseRetry</i>:*<i>LicenseRetryThreadBody</i>*:</p> <p>0:0 will be applied to <i>XenFactory</i>:*<i>XenFactory</i>* pattern</p> <p>1:1 will be applied to <i>LicenseRetry</i>:*<i>LicenseRetryThreadBody</i>* pattern</p>
ExcludePattern	Provide a comma-separated list of patterns to be excluded from monitoring in the

Parameter	Description
	<p>ExcludePattern text box. For example <code>*critical*</code>, <code>*exception*</code>. By default, this parameter is set to <code>'none'</code>.</p>
UniqueMatch	<p>By default, the UniqueMatch parameter is set to False, indicating that, by default, the test checks every line in the log file for the existence of each of the configured SearchPatterns. By setting this parameter to True, you can instruct the test to ignore a line and move to the next as soon as a match for one of the configured patterns is found in that line. For example, assume that <code>Pattern1:*fatal*,Pattern2:*error*</code> is the SearchPattern that has been configured. If UniqueMatch is set to False, then the test will read every line in the log file completely to check for the existence of messages embedding the strings 'fatal' and 'error'. If both the patterns are detected in the same line, then the number of matches will be incremented by 2. On the other hand, if UniqueMatch is set to True, then the test will read a line only until a match for one of the configured patterns is found and not both. This means that even if the strings 'fatal' and 'error' follow one another in the same line, the test will consider only the first match and not the next. The match count in this case will therefore be incremented by only 1.</p>
RotatingFile	<p>This flag governs the display of descriptors for this test in the eG monitoring console. If this flag is set to True and the AlertFile text box contains the full path to a specific (log/text) file, then, the descriptors of this test will be displayed in the following format: <code>DirectoryContainingMonitoredFile:<SearchPattern></code>. For instance, if the AlertFile parameter is set to <code>c:\eGurkha\logs\syslog.txt</code>, and RotatingFile is set to True, then, your descriptor will be of the following format: <code>c:\eGurkha\logs:<SearchPattern></code>. On the other hand, if the RotatingFile flag had been set to False, then the descriptors will be of the following format: <code><FileName>:<SearchPattern></code> - i.e., <code>syslog.txt:<SearchPattern></code> in the case of the example above.</p> <p>If this flag is set to True and the AlertFile parameter is set to the directory containing log files, then, the descriptors of this test will be displayed in the format: <code>ConfiguredDirectoryPath:<SearchPattern></code>. For instance, if the AlertFile parameter is set to <code>c:\eGurkha\logs</code>, and RotatingFile is set to True, then, your descriptor will be: <code>c:\eGurkha\logs:<SearchPattern></code>. On the other hand, if the RotatingFile parameter had been set to False, then the descriptors will be of the following format: <code>ConfiguredDirectory:<SearchPattern></code> - i.e., <code>logs:<SearchPattern></code> in the case of the example above.</p> <p>If this flag is set to true and the AlertFile parameter is set to a specific file pattern, then, the descriptors of this test will be of the following format: <code><FilePattern>:<SearchPattern></code>. For instance, if the AlertFile parameter is set to <code>c:\eGurkha\logs*sys*</code>, and RotatingFile is set to True, then, your descriptor will be: <code>*sys*<SearchPattern></code>. In this case, the descriptor format will not change even if the</p>

Parameter	Description
	RotatingFile flag status is changed.
DD Frequency	Refers to the frequency with which detailed diagnosis measures are to be generated for this test. The default is 1:1. This indicates that, by default, detailed measures will be generated every time this test runs, and also every time the test detects a problem. You can modify this frequency, if you so desire. Also, if you intend to disable the detailed diagnosis capability for this test, you can do so by specifying <i>none</i> against DD Frequency.
Detailed Diagnosis	<p>To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Recent errors:	Indicates the number of errors that were added to the alert log when the test was last executed.	Number	The value of this measure is a clear indicator of the number of “new” alerts that have come into the alert log of the monitored DDC. The detailed diagnosis of this measure, if enabled, provides the detailed descriptions of the errors of the configured patterns.

The detailed diagnosis of the *Recent errors* measure, if enabled, provides the detailed descriptions of the errors of the configured patterns.

Lists the recent alerts in the log file	
Time	Alerts
Aug 06, 2009 10:43:10	
	10:38:45.1967 : XenFactory>CreateMachineManager(http://192.168.10.164, root, *****,)
	10:38:45.3061 : XenFactory>CreateMachineManager(http://192.168.10.164, root, *****,)
	10:41:40.5237 : XenFactory>CreateMachineManager(http://192.168.10.164, root, *****,)
	10:41:40.6175 : XenFactory>CreateMachineManager(http://192.168.10.164, root, *****,)
	10:41:41.3206 : XenFactory>CreateMachineManager(http://192.168.10.164, root, *****,)
	10:41:41.4925 : XenFactory>CreateMachineManager(http://192.168.10.164, root, *****,)
	10:41:57.2424 : XenFactory>CreateMachineManager(http://192.168.10.164, root, *****,)
	10:41:57.3517 : XenFactory>CreateMachineManager(http://192.168.10.164, root, *****,)
	10:41:58.1173 : XenFactory>CreateMachineManager(http://192.168.10.164, root, *****,)
	10:41:58.3048 : XenFactory>CreateMachineManager(http://192.168.10.164, root, *****,)
	10:42:04.1954 : XenFactory>CreateMachineManager(http://192.168.10.164, root, *****,)

Figure 4.7: The detailed diagnosis of the Recent errors measure

4.3.7 DDC Controller Status Test

This test periodically verifies whether configured ports on the DDC are available or not, and if so how quickly it responds to connection requests. In addition, the test also reports whether the DDC being monitored is the 'master' of a farm.

Target of the test : A Citrix Delivery Controller v3/4

Agent deploying the test : An internal agent

Outputs of the test : One set of results for every targetport configured.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the specified host listens to.
TargetPorts	Specify either a comma-separated list of port numbers that are to be tested (eg., 80,7077,1521), or a comma-separated list of <i>port name:port number</i> pairs that are to be tested (eg., smtp:25,mssql:1433). In the latter case, the port name will be displayed in the monitor interface. Alternatively, this parameter can take a comma-separated list of <i>port name:IP address:port number</i> pairs that are to be tested, so as to enable the test to try and connect to Tcp ports on multiple IP addresses.

Parameter	Description
Timeout	Specify the duration beyond which the test will time out, if no response is received from the DDC. The default value is 60 seconds.
IsPassive	If the value chosen is Yes , then the server under consideration is a passive server in a cluster. No alerts will be generated if the server is not running. Measures will be reported as "Not applicable" by the agent if the server is not up.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Is this server the farm master?	Indicates whether this DDC is the farm master.	Boolean	While the value 1 indicates that this server is the farm master, the value 0 indicates that it is not.
DDC availability	Indicates whether a TCP connection to the DDC is currently available or not.	Percent	If the DDC is available, then this measure will report the value 100. The value 0 for this measure, indicates that the DDC is not available. An availability problem can be caused by different factors – e.g., the server process may not be up, a network problem may exist, or there could be a configuration problem with the DNS server.
Response time	Indicates the time taken by the DDC to respond to a request.	Secs	An increase in response time can be caused by several factors such as a server bottleneck, a configuration problem with the DNS server, a network problem, etc.

4.4 The DDC Farm Layer

Using the tests mapped to this layer, administrators can effectively monitor XenDesktop farms, so that:

- Unavailability of the license server can be promptly detected;
- The type (whether pooled or assigned) and number of desktops managed by the farm can be determined;

- Powered-off VMs can be instantly identified;
- Desktops with users can be detected;
- Idle desktops can be isolated;



Figure 4.8: The tests mapped to the DDC Farm layer

4.4.1 Desktops in Farm Test

Typically, a DDC manages virtual desktops as desktop groups, with each group containing virtual desktops of a particular type – a group therefore, can include desktops that are of type pooled, pre-assigned, or assigned on first use.

Virtual desktops in pooled groups are allocated to users on a per-session, first-come-first-served basis. You can configure pools of VMs so that any change that the user makes to the desktop during a session is lost when the user logs off from the desktop. Virtual desktops in pre-assigned groups are permanently assigned to an individual user as soon as the group is created. Whenever a user requests a desktop, they are always connected to the same one. As a result, the user can safely customize the desktop to suit his or her own needs. Virtual desktops in assigned-on-first-use groups are permanently assigned to the first user to connect to them. As with pre-assigned desktops, the user can then safely customize the desktop.

For each such desktop type in a farm, this test reports the number of desktops of that type managed by the DDCs in the farm, and monitors how effectively these desktops have been utilized. Note that the Assigned descriptor of this test reports measures for both the pre-assigned and assigned-on-first-use desktops. In addition, this test reports a set of measures for a Total descriptor, which reveals the availability and usage of desktops across types.

Note:

This test will work only if the DDC being monitored is the 'master' in a DDC farm. If not, this test will not work.

Target of the test : A Citrix Delivery Controller v3/4

Agent deploying the test : An internal agent

Outputs of the test : One set of results for every desktop type.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port used by the DDC. The default port number is 80.
Detailed Diagnosis	<p>To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Powered On virtual desktops	Indicates the number of virtual desktops of this type that are currently powered on.	Number	To know the details of the powered-on desktops, use the detailed diagnosis of this measure.
Powered Off virtual desktops	Indicates the number of virtual desktops of this type that are currently	Number	To know the details of the powered-off desktops, use the detailed diagnosis of this measure.

Measurement	Description	Measurement Unit	Interpretation
	powered off.		
Virtual desktops in use	Indicates the number of virtual desktops of this type that are currently in use.	Number	To know the details of the desktops that are in use, use the detailed diagnosis of this measure.
Available virtual desktops	Indicates the number of virtual desktops that are currently idle – i.e., available for use.	Number	To know the details of the desktops that are free, use the detailed diagnosis of this measure.
Virtual desktops not registered	Indicates the number of virtual desktops that are currently unregistered.	Number	To know the details of the unregistered desktops, use the detailed diagnosis of this measure.
Virtual desktops with users	Indicates the percentage of virtual desktops that are currently in use.	Percent	A high value for this measure is a cause for concern, as it indicates that the virtual desktops of this type have been utilized excessively. This can degrade the performance of the host on which the desktops are operating.
Total virtual desktops	Indicates the total number of virtual desktops of this type.	Number	
Unknown powerstate virtual desktops	Indicates the number of virtual desktops that are currently in an 'Unknown' powerstate.	Number	To know the details of the unknown powerstate desktops, use the detailed diagnosis of this measure.

The detailed diagnosis of the *Powered On virtual desktops* measure will reveal the name of the powered-on desktops, the desktop group to which they belong, and the user to whom they have been assigned (in case of the *Assigned* descriptor; for *Pooled* desktops the **Assigned User** column will typically be empty).

Lists the powered on virtual desktops				
Time	Desktop Name	Group Name	Assigned User	
Aug 06, 2009 10:41:36				
	CHN\EGVCXDS11	xenDDC1	CHN\xenuser	
	CHN\EGURKHA122	Testing	CHN\xenuser	

Figure 4.9: The detailed diagnosis of the Powered On virtual desktops measure

The detailed diagnosis of the *Virtual desktops in use* measure will reveal the name of the desktops that are being used, the desktop group to which they belong, the user to whom they have been assigned (in case of the *Assigned* descriptor; for *Pooled* desktops, the **Assigned User** column will typically be empty), the user who is currently logged in to the desktop, and current status of the desktop.

Shows the details of virtual desktops in use					
Time	Desktop Name	Group Name	Assigned User	Login User	Status
Aug 06, 2009 10:41:36	CHN\EGVCXDS11	xenDDC1	CHN\xenuser	CHN\egtest	ConsoleLoggedIn

Figure 4.10: The detailed diagnosis of the Virtual desktops in use measure

The detailed diagnosis of the *Virtual desktops not registered* measure will reveal the name of the desktops that are unregistered, the desktop group to which they belong, and the user to whom they have been assigned (in case of the *Assigned* descriptor; for *Pooled* desktops, the **Assigned User** column will typically be empty).

Lists the virtual desktops not registered			
Time	Desktop Name	Group Name	Assigned User
Aug 06, 2009 10:41:36	CHN\EGURKHA122	Testing	CHN\xenuser

Figure 4.11: The detailed diagnosis of the Virtual desktops not registered measure

The detailed diagnosis of the *Unknown powerstate desktops* measure will reveal the name of the desktops that are currently in the unknown powerstate, the desktop group to which they belong, and the user to whom they have been assigned (in case of the *Assigned* descriptor; for *Pooled* desktops, the **Assigned User** column will typically be empty).

Lists the unknown virtual desktops			
Time	Desktop Name	Group Name	Assigned User
Jan 10, 2011 15:40:56			
	MAS\DDDSKXP1	NET	MAS\user1
	MAS\EGHH101-PC	DDC3\NAT	MAS\eguser

Figure 4.12: The detailed diagnosis of the Unknowns powerstate desktops measure

4.4.2 Xen Administrator Test

If you want to accurately identify the users with administrator rights to DDC, then, you can use this test. This test is disabled by default. To enable the test, go to the **ENABLE / DISABLE TESTS** page using the menu sequence : Agents -> Tests -> Enable/Disable, pick the *Delivery Controller- 3/4* as the **Component type**, set *Performance* as the **Test type**, choose this test from the disabled tests list, and click on the **>>** button to move the test to the **ENABLED TESTS** list. Finally, click the **Update** button.

Target of the test : A Citrix Delivery Controller v3/4

Agent deploying the test : An internal agent

Outputs of the test : One set of results for every user configured on the Citrix Delivery Controller v3/4.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which the test is being configured.
Port	The variable name of the port at which the specified host listens.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Is user administrator?	Indicates whether this user has administrator rights to DDC or not.	Boolean	The value 1 indicates that the user is an <i>administrator</i> . The value 0 indicates that the user is not an <i>administrator</i> .

4.4.3 DDC Farm Test

For every farm configured on a main delivery controller component, this test reports key statistics such as the number of DDCs managed by the farm and the number of desktop groups configured on each DDC.

Note:

This test will report all measures only if the server being monitored is the farm server – i.e., is the master server in the farm. If not, only the Is license server available measure will be reported.

Target of the test : A Citrix Delivery Controller v3/4

Agent deploying the test : An internal agent

Outputs of the test : One set of results for farm configured on the main desktop delivery controller.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the specified host listens to. The default port number is 80.
Detailed Diagnosis	<p>To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Is license server available?	Indicates whether the license server is currently available or not.	Boolean	While the value 1 indicates that the license server is available, the value 0 indicates that it is not. The non-availability of the license server could have serious repercussions on the operations of the DDC, and can cause significant delays or can even completely stall the delivery of the XenDesktop solution.
Total desktop controllers	Indicates the number of DDCs managed by this farm.	Number	To know the details of the individual DDCs managed by the farm, use the detailed diagnosis of this measure.
Total desktop groups	Indicates the number of desktop groups configured on this farm.	Number	To know the details of the desktop groups, use the detailed diagnosis of this measure.

Measurement	Description	Measurement Unit	Interpretation
Available desktop groups	Indicates the number of desktop groups that are currently available.	Number	To know the details of the desktop groups that are available, use the detailed diagnosis of this measure.
Unavailable desktop groups	Indicates the number of desktop groups that are currently unavailable.	Number	If a desktop group is disabled, it will be unavailable for use by the DDC. To know the details of the unavailable desktop groups, use the detailed diagnosis of this measure.

The detailed diagnosis of the *Total desktop controllers* measure reveals the name and IP address of the controllers managed by a farm.

Lists the total desktop controllers		
Time	Controller Name	IP Address
Aug 06, 2009 10:43:35	XENDESKTOPDC	192.168.10.6
	VM2003DDC2	192.168.10.94

Figure 4.13: The detailed diagnosis of the Total desktop controllers measure

The detailed diagnosis of the *Total desktop groups* measure reveals the names of the desktop groups managed by a farm.

Lists the total desktop groups	
Time	Group Name
Aug 06, 2009 10:43:35	xenDDC1
	Testing
	HR

Figure 4.14: The detailed diagnosis of the Total desktop groups measure

The detailed diagnosis of the *Available desktop groups* measure reveals the names of the desktop groups that are currently available.

Lists the available desktop groups	
Time	Group Name
Aug 06, 2009 10:43:35	xenDDC1
	Testing
	HR

Figure 4.15: The detailed diagnosis of the Available desktop groups measure

4.4.4 DDC License Server Test

A License Server is required to keep track of license utilization in a XenDesktop environment. The non-availability of the license server could have serious repercussions on the operations of the DDC, and can cause significant delays or can even completely stall the delivery of the XenDesktop solution. Using this test, you can promptly detect the unavailability of the License server or capture even the slightest of delays in its responsiveness, so that remedial measures can be initiated before it hampers the delivery of the XenDesktop service.

Target of the test : A Citrix Delivery Controller v3/4

Agent deploying the test : An internal agent

Outputs of the test : One set of results for the A Citrix Delivery Controller v3/4 that is being monitored.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port used by the DDC.
Timeout	Specify the duration beyond which the test will time out, if no response is received from the DDC. The default value is 30 seconds.
Detailed Diagnosis	<p>To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
TCP connection availability	Indicates whether the TCP connection to the XenDesktop Delivery Controller is available.	Percent	While the value 100 indicates that the license server is available, the value 0 indicates that it is not.
Response time	Indicates the time taken by the license server to respond to connection requests.	Secs	A low value is desired for this measure. A sudden or steady increase in this value could indicate a slowdown while connecting to the license server. This could be owing to a network congestion. Further investigation is however required to isolate the exact reason for the latency.

4.5 The Desktop Groups Layer

Virtual desktop groups consist of virtual desktops that are pooled, pre-assigned, or assigned on first use. Each group can contain only one type of desktop. These virtual desktops can run on PCs, blades, or virtual machines (VMs) provided through a virtualization infrastructure.

This layer focuses on the performance of the desktop groups managed by a DDC, and reports the availability, usage, and the hosting infrastructure of the desktops within each group.

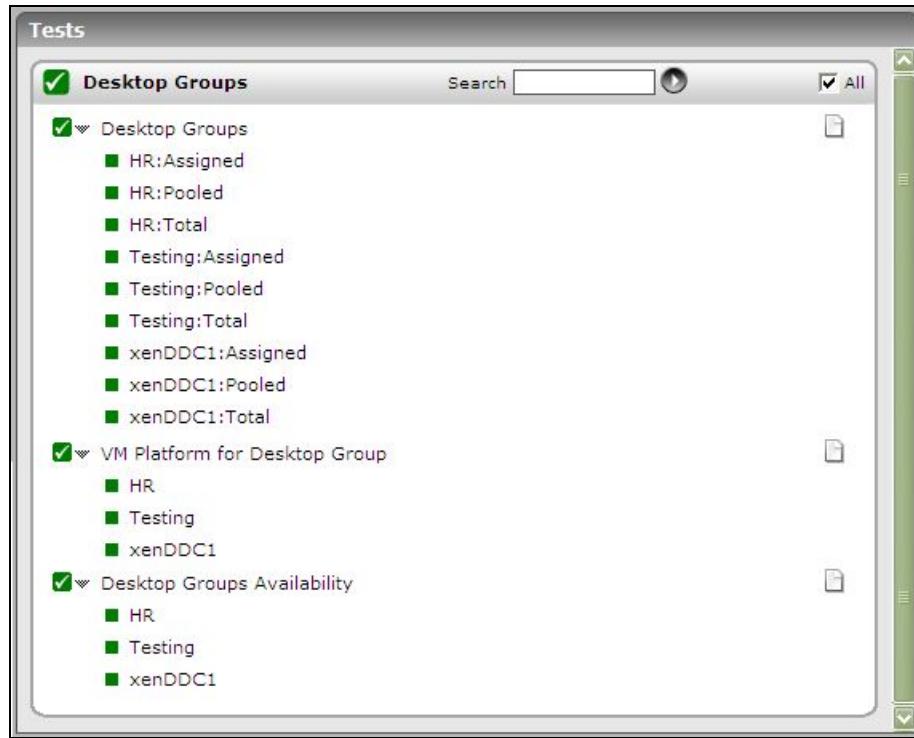


Figure 4.16: The tests mapped to the Desktop Groups layer

4.5.1 Desktop Groups in Farm Test

This test auto-discovers the desktop groups managed by each DDC in a DDC farm and reports the powered-on status, registration status, and usage of the each type of desktop within each group.

Target of the test : A Citrix Delivery Controller v3/4

Agent deploying the test : An internal agent

Outputs of the test : One set of results for every *desktopgroup:desktoptype* combination managed by a DDC farm.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The host for which this test is to be configured.
Port	Refers to the port at which the specified host listens to. The default port number is 80.
Detailed Diagnosis	To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an

Parameter	Description
	<p>optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Powered On virtual desktops	Indicates the number of virtual desktops of this type in this group that are currently powered on.	Number	To know the details of the powered-on desktops, use the detailed diagnosis of this measure.
Powered Off virtual desktops	Indicates the number of virtual desktops of this type in this group that are currently powered off.	Number	To know the details of the powered-off desktops, use the detailed diagnosis of this measure.
Virtual desktops in use	Indicates the number of virtual desktops of this type in this group that are currently in use.	Number	To know the details of the desktops that are in use, use the detailed diagnosis of this measure.
Available virtual desktops	Indicates the number of virtual desktops of this type in this group that are currently idle – i.e., available for use.	Number	To know the details of the desktops that are free, use the detailed diagnosis of this measure.
Virtual desktops not registered	Indicates the number of virtual desktops of this type in this group that are currently unregistered.	Number	To know the details of the unregistered desktops, use the detailed diagnosis of this measure.

Measurement	Description	Measurement Unit	Interpretation
Virtual desktops with users	Indicates the percentage of virtual desktops that are currently in use.	Percent	A high value for this measure is a cause for concern, as it indicates that the virtual desktops in this group of this type have been utilized excessively. Such relentless usage of the VMs, can degrade the performance of the host on which the VMs are operating.
Total virtual desktops	Indicates the total number of virtual desktops in this group.	Number	
Unknown powerstate virtual desktops	The number of virtual desktops in this group that are currently in an 'Unknown' powerstate.	Number	To know the details of the desktops that are in the unknown powerstate, use the detailed diagnosis of this measure.

The detailed diagnosis of the *Virtual desktops in use* measure will reveal the name of the desktops that are being used, the desktop group to which they belong, the user to whom they have been assigned (in case of the *Assigned* descriptor; for *Pooled* desktops, the *Assigned User* column will typically be empty), the user who is currently logged in to the desktop, and current status of the desktop.

Shows the details of virtual desktops in use					
Time	Desktop Name	Group Name	Assigned User	Login User	Status
Aug 06, 2009 11:01:48	CHN\EGVCXDS11	xenDDC1	CHN\xenuser	CHN\egtest	ConsoleLoggedIn

Figure 4.17: The detailed diagnosis of the Virtual desktops in use measure

The detailed diagnosis of the *Virtual desktops not registered* measure will reveal the name of the desktops that are unregistered, the desktop group to which they belong, and the user to whom they have been assigned (in case of the *Assigned* descriptor; for *Pooled* desktops, the **Assigned User** column will typically be empty).

Lists the virtual desktops not registered			
Time	Desktop Name	Group Name	Assigned User
Aug 06, 2009 11:01:48	CHN\EGURKHA122	Testing	CHN\xenuser

Figure 4.18: The detailed diagnosis of the Virtual desktops not registered measure

The detailed diagnosis of the *Powered on virtual desktops* measure will reveal the name of the powered on desktops, the desktop group to which they belong, and the user to whom they have been assigned (in case of the *Assigned* descriptor; for *Pooled* desktops, the **Assigned User** column will typically be empty).

Lists the powered on virtual desktops			
Time	Desktop Name	Group Name	Assigned User
Jan 10, 2011 15:38:38	MAS\basedesk21	DDC3\MOD	-

Figure 4.19: The detailed diagnosis of the Powered on virtual desktops measure

4.5.2 Desktop Groups in Controller Test

This test auto-discovers the desktop groups managed by the monitored DDC and reports the powered-on status, registration status, and usage of the each type of desktop within each group.

Target of the test : A Citrix Delivery Controller v3/4

Agent deploying the test : An internal agent

Outputs of the test : One set of results for every desktopgroup:desktotyp combination managed by the monitored Citrix Delivery Controller v3/4.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The DDC for which this test is to be configured.
Port	Refers to the port at which the specified DDC listens to. The default port number is 80.
Detailed Diagnosis	<p>To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Powered On virtual desktops	Indicates the number of virtual desktops of this type in this group that are currently powered on.	Number	To know the details of the powered-on desktops, use the detailed diagnosis of this measure.
Powered Off virtual desktops	Indicates the number of virtual desktops of this type in this group that are currently powered off.	Number	To know the details of the powered-off desktops, use the detailed diagnosis of this measure.
Virtual desktops in use	Indicates the number of virtual desktops of this type in this group that are currently in use.	Number	To know the details of the desktops that are in use, use the detailed diagnosis of this measure.
Available virtual desktops	Indicates the number of virtual desktops of this type in this group that are currently idle – i.e., available for use.	Number	To know the details of the desktops that are free, use the detailed diagnosis of this measure.
Virtual desktops not registered	Indicates the number of virtual desktops of this type in this group that are currently unregistered.	Number	To know the details of the unregistered desktops, use the detailed diagnosis of this measure.
Virtual desktops with users	Indicates the percentage of virtual desktops that are currently in use.	Percent	A high value for this measure is a cause for concern, as it indicates that the virtual desktops in this group of this type have been utilized excessively. Such relentless usage of the VMs, can degrade the performance of the host on which the VMs are operating.
Total virtual desktops	Indicates the total number of virtual desktops in this group.	Number	
Unknown powerstate virtual desktops	The number of virtual desktops in this group that are currently in an 'Unknown' powerstate.	Number	To know the details of the desktops that are in the unknown powerstate, use the detailed diagnosis of this measure.

4.5.3 VM Platform for Desktop Group Test

A hosting infrastructure (i.e., a server hosting virtual desktops) can support multiple virtual desktops, but not all these desktops need to be managed by DDC – for instance, while a host can support 100 VMs, 80 VMs can be allocated to a desktop group configured on DDC. This test monitors each desktop group on DDC, and reports the number of VMs allocated to it and the number of VMs originally available on the hosting infrastructure.

Target of the test : A Citrix Delivery Controller v3/4

Agent deploying the test : An internal agent

Outputs of the test : One set of results for every desktopgroup on the Citrix Delivery Controller v3/4.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The host for which the test is to be configured.
Port	Refers to the port used by the DDC. The default port number is 80.
DD Frequency	Refers to the frequency with which detailed diagnosis measures are to be generated for this test. The default is 1:1. This indicates that, by default, detailed measures will be generated every time this test runs, and also every time the test detects a problem. You can modify this frequency, if you so desire. Also, if you intend to disable the detailed diagnosis capability for this test, you can do so by specifying <i>none</i> against DD frequency.
Detailed Diagnosis	<p>To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Total virtual desktops in provider	Indicates the total number of virtual desktops in the hosting infrastructure from which desktops have been allocated to this group.	Number	To know the details of the VMs on a host, use the detailed diagnosis of this measure.
Allocated virtual desktops to DDC	Indicates the number of virtual desktops allocated to this group.	Number	To know the details of the allocated desktops, use the detailed diagnosis of this measure.
Available virtual desktops in provider	Indicates the number of virtual desktops on the hosting infrastructure, which are available for allocation to this desktop group.	Number	The value of this measure will be the difference between the values of the Total virtual desktops in provider measure and the Allocated virtual desktops to DDC measure. To know the details of the available desktops, use the detailed diagnosis of this measure.

The detailed diagnosis of the *Total virtual desktops in provider* measure lists the names of all the desktops that are operating on the hosting infrastructure.

Lists the total virtual desktops in provider	
Time	Virtual Desktop Name
Aug 06, 2009 10:52:06	
	LINel4-Team- DONT POWER OFF
	Leostream Connection Broker
	demo_oracle10.60

Figure 4.20: The detailed diagnosis of the Total virtual desktops in provider measure

The detailed diagnosis of the *Allocated virtual desktops to DDC* measure lists the names of the desktops allocated to DDC.

Lists the allocated virtual desktops to DDC	
Time	Virtual Desktop Name
Aug 06, 2009 10:52:06	xendesktoppxpvc (10.153)

Figure 4.21: The detailed diagnosis of the Allocated virtual desktops to DDC

The detailed diagnosis of the *Available virtual desktops in provider* measure lists the names of the desktops available for allocation on the host.

Lists the virtual desktops available in provider	
Time	Virtual Desktop Name
Aug 06, 2009 10:52:06	Windows Server 2003 PVS (1) XENAPP5 10.37
	Windows Server 2003 (2)10.217
	Windows Server 2003 (3)10.137

Figure 4.22: The detailed diagnosis of the Available virtual desktops in provider measure

4.5.4 Desktop Groups Availability Test

This test indicates the availability of each of the desktop groups on the Delivery Controller 3/4.

Target of the test : A Citrix Delivery Controller v3/4

Agent deploying the test : An internal agent

Outputs of the test : One set of results for every *desktopgroup* on the Citrix Delivery Controller v3/4.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the DDC for which this test is to be configured.
Port	Refers to the port at which the specified DDC listens to. The default port number is 80.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Is the desktop group available?	Indicates whether this desktop group is currently available or not.	Boolean	While the value 1 indicates that the desktop group is available, the value 0 indicates that it is currently unavailable. A desktop group, if disabled, will be unavailable for use.

4.6 The Virtual Desktops Layer

Using the tests mapped to this layer, you can determine the following:

- Whether the virtual desktop agent is available or not;
- The current status of the virtual desktops;
- Whether the virtual desktops are available over the network or not;
- Details of user sessions to virtual desktops.

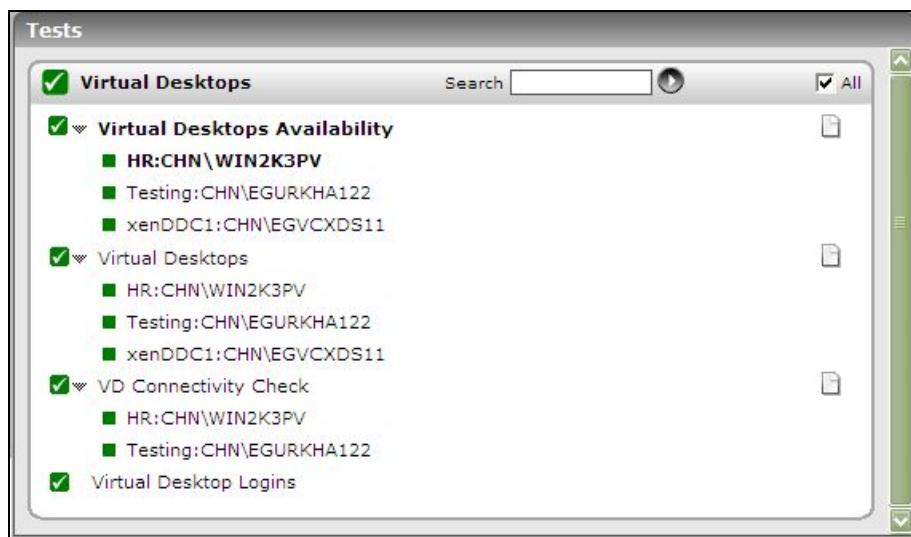


Figure 4.23: The tests mapped to the Virtual Desktops layer

4.6.1 Virtual Desktops Agents Test

The Virtual Desktop Agent runs on the computers that host the virtual desktops you want to deliver to your users. It provides the ICA service that manages communication between virtual desktops and endpoint devices, and between virtual desktops and delivery controllers. Without this agent, the DDC will not be able to communicate with virtual desktops. It is therefore essential to periodically verify the availability of the virtual desktop agent. This test enables administrators to run this availability check on each virtual desktop within each desktop group managed by the DDC.

Target of the test : A Citrix Delivery Controller v3/4

Agent deploying the test : An internal agent

Outputs of the test : One set of results for every virtual desktop managed by the Citrix Delivery Controller v3/4.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the specified host listens to. By default, this is set to 80.
Virtual Desktop Agent Port	Specify the port using which the DDC connects to the virtual desktops. By default, 8080 is displayed here.
Report By Groupname	By default, this flag is set to Yes , indicating that this test reports a set of measures for every <i>desktopgroup:virtualdesktop</i> combination, by default. To ensure that this test reports a set of measures for every <i>virtualdesktop</i> alone, set this flag to No .
Only PoweredOn VMs	By default, this flag is set to Yes , indicating that this test reports the availability of the virtual desktop agent on powered-on VMs alone. To know the availability of this agent on powered-off VMs as well, set this flag to No .
Report by Controller Name	By default, this flag is set to Yes . This implies that every <i>desktopgroup:virtualdesktop</i> pair for which this test reports metrics will be prefixed by the <i>controllername</i> as well. Every descriptor will hence be of the following format by default: <i>Controllername->desktopgroup:virtualdesktop</i> . If you want to remove the <i>controllername</i> prefix from the descriptors, then, set this flag to No .

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Virtual desktop agent availability	Indicates whether the virtual desktop agent is available on this virtual desktop within this group.	Percent	While the value 100 indicates that the virtual desktop agent is available, the value 0 indicates that it is currently unavailable. If a virtual desktop agent is unavailable, DDC will not be able to communicate with the corresponding virtual desktop, thereby affecting the quality of the user experience with the XenDesktop solution. Note that if a virtual desktop agent is available, but the desktop is in maintenance mode, then the value of this measure will be 100. However, if the virtual desktop agent is currently unavailable, and the

Measurement	Description	Measurement Unit	Interpretation
			virtual desktop is in the maintenance mode, then this measure will report <i>Not available</i> .

4.6.2 Virtual Desktops in Farm Test

This test reports the status of the virtual desktops managed by the Delivery Controller farm.

Target of the test : A Citrix Delivery Controller v3/4

Agent deploying the test : An internal agent

Outputs of the test : One set of results for every virtual desktop managed by the Citrix Delivery Controller v3/4 farm.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port used by the DDC. The default port number is 80.
Report by GroupName	By default, this flag is set to Yes , indicating that this test reports a set of measures for every <i>desktopgroup:virtualdesktop</i> combination, by default. To ensure that this test reports a set of measures for every <i>virtualdesktop</i> alone, set this flag to No .
Only PoweredOn VMs	By default, this flag is set to Yes , indicating that this test reports the availability of the virtual desktop agent on powered-on VMs alone. To know the availability of this agent on powered-off VMs as well, set this flag to No .
DD Frequency	Refers to the frequency with which detailed diagnosis measures are to be generated for this test. The default is 1:1. This indicates that, by default, detailed measures will be generated every time this test runs, and also every time the test detects a problem. You can modify this frequency, if you so desire. Also, if you intend to disable the detailed diagnosis capability for this test, you can do so by specifying <i>none</i> against DD frequency.
Detailed Diagnosis	To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are

Parameter	Description
	<p>detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation						
Is virtual desktop enabled?	Indicates whether this virtual desktop is currently enabled/disabled.		<p>While the value Yes indicates that the virtual desktop is enabled, the value No indicates that it is currently disabled.</p> <p>The numeric values that correspond to the Yes/No states above are as follows:</p> <table border="1"> <thead> <tr> <th>State</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Yes</td><td>1</td></tr> <tr> <td>No</td><td>0</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned States while indicating whether a virtual desktop is enabled/disabled. However, the graph of this measure will represent states using the corresponding numeric equivalents – 1 and 0 – only.</p>	State	Numeric Value	Yes	1	No	0
State	Numeric Value								
Yes	1								
No	0								
Is user connected to desktop?	Indicates whether any user is currently connected to this desktop or not.		While the value Yes indicates that a user is connected to the virtual desktop, the value No indicates that						

Measurement	Description	Measurement Unit	Interpretation						
			<p>no user is currently connected to the desktop.</p> <p>The numeric values that correspond to the Yes/No states above are as follows:</p> <table border="1"> <thead> <tr> <th>State</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Yes</td><td>1</td></tr> <tr> <td>No</td><td>0</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned States while indicating whether a user is connected to the virtual desktop or not. However, the graph of this measure will represent the user connection states using the corresponding numeric equivalents – 1 and 0 – only.</p> <p>Detailed diagnosis will be available for this measure only if its value is Yes – i.e., only if at least one user is connected to the virtual desktop. In this case, you can use the detailed diagnosis to figure out who the user is.</p>	State	Numeric Value	Yes	1	No	0
State	Numeric Value								
Yes	1								
No	0								
Is the virtual desktop available?	Indicates whether this virtual desktop is currently available or not.		<p>While the value Yes indicates that the virtual desktop is available, the value No indicates that the virtual desktop is not available.</p> <p>The numeric values that correspond to the Yes/No states above are as follows:</p>						

Measurement	Description	Measurement Unit	Interpretation						
			<table border="1"> <thead> <tr> <th>State</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Yes</td><td>1</td></tr> <tr> <td>No</td><td>0</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned States while indicating the availability of a virtual desktop. However, the graph of this measure will represent desktop availability using the corresponding numeric equivalents – 1 and 0 – only.</p>	State	Numeric Value	Yes	1	No	0
State	Numeric Value								
Yes	1								
No	0								
Is desktop powered on?	Indicates whether this virtual desktop is currently powered on or not.		<p>While the value Yes indicates that the desktop is powered on, the value No indicates that the desktop is currently powered off.</p> <p>The numeric values that correspond to the Yes/No states above are as follows:</p> <table border="1"> <thead> <tr> <th>State</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Yes</td><td>1</td></tr> <tr> <td>No</td><td>0</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned States while indicating whether a desktop is powered on/off. However, the graph of this measure will represent the powered on state using the corresponding numeric equivalents – 1 and 0 – only.</p>	State	Numeric Value	Yes	1	No	0
State	Numeric Value								
Yes	1								
No	0								
Is desktop under maintenance?	Indicates whether this virtual desktop is currently		If you want to temporarily stop						

Measurement	Description	Measurement Unit	Interpretation						
	under maintenance.		<p>connections to a desktop so that maintenance tasks can be carried out, you can put the desktop into maintenance mode.</p> <p>While the value Yes indicates that the desktop is in maintenance mode, the value No indicates that the desktop is not in maintenance mode.</p> <p>The numeric values that correspond to the Yes/No states above are as follows:</p> <table border="1"> <tr> <th>State</th><th>Numeric Value</th></tr> <tr> <td>Yes</td><td>1</td></tr> <tr> <td>No</td><td>0</td></tr> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned States while indicating whether/not a desktop is in the maintenance mode. However, the graph of this measure will represent the maintenance mode using the corresponding numeric equivalents – 1 and 0 – only.</p>	State	Numeric Value	Yes	1	No	0
State	Numeric Value								
Yes	1								
No	0								
Is desktop powerstate unknown?	Indicates whether this virtual desktop is currently in the 'Unknown' powerstate.		<p>Note that this measure will appear only if the Only Powered On VMs flag is set to 'No'.</p> <p>While the value Yes for this measure indicates that the desktop is currently in an unknown powerstate, the value No indicates that the desktop is currently in a powered on/off state only.</p> <p>The numeric values that correspond to</p>						

Measurement	Description	Measurement Unit	Interpretation						
			<p>the Yes/No states above are as follows:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>State</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Yes</td><td>1</td></tr> <tr> <td>No</td><td>0</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned States while indicating whether/not a desktop is in unknown powerstate. However, the graph of this measure will represent the state using the corresponding numeric equivalents – 1 and 0 – only.</p>	State	Numeric Value	Yes	1	No	0
State	Numeric Value								
Yes	1								
No	0								

4.6.3 Virtual Desktops in Controller Test

This test reports the status of the virtual desktops managed by the monitored DDC.

Target of the test : A Citrix Delivery Controller v3/4

Agent deploying the test : An internal agent

Outputs of the test : One set of results for every virtual desktop managed by the monitored Citrix Delivery Controller v3/4.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port used by the DDC. The default port number is 80.
Report by GroupName	By default, this flag is set to Yes , indicating that this test reports a set of measures for every <i>desktopgroup:virtualdesktop</i> combination, by default. To ensure that this test reports a set of measures for every <i>virtualdesktop</i> alone, set this flag to No .

Parameter	Description
Only PoweredOn VMs	By default, this flag is set to Yes , indicating that this test reports the availability of the virtual desktop agent on powered-on VMs alone. To know the availability of this agent on powered-off VMs as well, set this flag to No .
Report by Controller Name	By default, this flag is set to Yes . This implies that every <i>desktopgroup:virtualdesktop</i> pair for which this test reports metrics will be prefixed by the <i>controllername</i> as well. Every descriptor will hence be of the following format by default: <i>Controllername->desktopgroup:virtualdesktop</i> . If you want to remove the <i>controllername</i> prefix from the descriptors, then, set this flag to No .
Detailed Diagnosis	<p>To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation						
Is virtual desktop enabled?	Indicates whether this virtual desktop is currently enabled/disabled.		<p>While the value Yes indicates that the virtual desktop is enabled, the value No indicates that it is currently disabled.</p> <p>The numeric values that correspond to the Yes/No states above are as follows:</p> <table border="1"> <thead> <tr> <th>State</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Yes</td><td>1</td></tr> <tr> <td>No</td><td>0</td></tr> </tbody> </table>	State	Numeric Value	Yes	1	No	0
State	Numeric Value								
Yes	1								
No	0								

Measurement	Description	Measurement Unit	Interpretation						
			<p>Note:</p> <p>By default, this measure reports the above-mentioned States while indicating whether a virtual desktop is enabled/disabled. However, the graph of this measure will represent states using the corresponding numeric equivalents – 1 and 0 – only.</p>						
Is user connected to desktop?	Indicates whether any user is currently connected to this desktop or not.		<p>While the value <i>Yes</i> indicates that a user is connected to the virtual desktop, the value <i>No</i> indicates that no user is currently connected to the desktop.</p> <p>The numeric values that correspond to the Yes/No states above are as follows:</p> <table border="1"> <thead> <tr> <th>State</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Yes</td><td>1</td></tr> <tr> <td>No</td><td>0</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned States while indicating whether a user is connected to the virtual desktop or not. However, the graph of this measure will represent the user connection states using the corresponding numeric equivalents – 1 and 0 – only.</p> <p>Detailed diagnosis will be available for this measure only if its value is <i>Yes</i> – i.e., only if at least one user is connected to the virtual desktop. In this case, you can use the detailed diagnosis to figure out who the user is.</p>	State	Numeric Value	Yes	1	No	0
State	Numeric Value								
Yes	1								
No	0								

Measurement	Description	Measurement Unit	Interpretation						
Is the virtual desktop available?	Indicates whether this virtual desktop is currently available or not.		<p>While the value Yes indicates that the virtual desktop is available, the value No indicates that the virtual desktop is not available.</p> <p>The numeric values that correspond to the Yes/No states above are as follows:</p> <table border="1"> <thead> <tr> <th>State</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Yes</td><td>1</td></tr> <tr> <td>No</td><td>0</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned States while indicating the availability of a virtual desktop. However, the graph of this measure will represent desktop availability using the corresponding numeric equivalents – 1 and 0 – only.</p>	State	Numeric Value	Yes	1	No	0
State	Numeric Value								
Yes	1								
No	0								
Is desktop powered on?	Indicates whether this virtual desktop is currently powered on or not.		<p>While the value Yes indicates that the desktop is powered on, the value No indicates that the desktop is currently powered off.</p> <p>The numeric values that correspond to the Yes/No states above are as follows:</p> <table border="1"> <thead> <tr> <th>State</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Yes</td><td>1</td></tr> <tr> <td>No</td><td>0</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the</p>	State	Numeric Value	Yes	1	No	0
State	Numeric Value								
Yes	1								
No	0								

Measurement	Description	Measurement Unit	Interpretation						
			<p>above-mentioned States while indicating whether a desktop is powered on/off. However, the graph of this measure will represent the powered on state using the corresponding numeric equivalents – 1 and 0 – only.</p>						
Is desktop under maintenance?	Indicates whether this virtual desktop is currently under maintenance.		<p>If you want to temporarily stop connections to a desktop so that maintenance tasks can be carried out, you can put the desktop into maintenance mode.</p> <p>While the value <i>Yes</i> indicates that the desktop is in maintenance mode, the value <i>No</i> indicates that the desktop is not in maintenance mode.</p> <p>The numeric values that correspond to the Yes/No states above are as follows:</p> <table border="1"> <tr> <th>State</th><th>Numeric Value</th></tr> <tr> <td>Yes</td><td>1</td></tr> <tr> <td>No</td><td>0</td></tr> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned States while indicating whether/not a desktop is in the maintenance mode. However, the graph of this measure will represent the maintenance mode using the corresponding numeric equivalents – 1 and 0 – only.</p>	State	Numeric Value	Yes	1	No	0
State	Numeric Value								
Yes	1								
No	0								
Is desktop powerstate unknown?	Indicates whether this virtual desktop is currently in the 'Unknown'		Note that this measure will appear only if the Only Powered On VMs flag is set to 'No'.						

Measurement	Description	Measurement Unit	Interpretation						
	powerstate.		<p>While the value Yes for this measure indicates that the desktop is currently in an unknown powerstate, the value No indicates that the desktop is currently in a powered on/off state only.</p> <p>The numeric values that correspond to the Yes/No states above are as follows:</p> <table border="1"> <thead> <tr> <th>State</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Yes</td><td>1</td></tr> <tr> <td>No</td><td>0</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned States while indicating whether/not a desktop is in unknown powerstate. However, the graph of this measure will represent the state using the corresponding numeric equivalents – 1 and 0 – only.</p>	State	Numeric Value	Yes	1	No	0
State	Numeric Value								
Yes	1								
No	0								

4.6.4 Virtual Desktop Connectivity Test

Sometimes, a virtual desktop could be in a powered-on state, but the failure of the virtual desktop operating system or any fatal error in its operations could have rendered the desktop inaccessible to Delivery Controller, and consequently, to users. In order to enable administrators to promptly detect such 'hidden' anomalies, the eG agent periodically runs a connectivity check on each virtual desktop using this test, and reports whether the virtual desktop is accessible over the network or not.

Target of the test : A Citrix Delivery Controller v3/4

Agent deploying the test : An internal agent

Outputs of the test : One set of results for every virtual desktop managed by the Delivery Controller.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the specified host listens to.
Report by Groupname	By default, this flag is set to Yes , indicating that this test reports a set of measures for every <i>desktopgroup:virtualdesktop</i> combination, by default. To ensure that this test reports a set of measures for every <i>virtualdesktop</i> alone, set this flag to No .
Report by Controllername	By default, this flag is set to Yes . This implies that every <i>desktopgroup:virtualdesktop</i> pair for which this test reports metrics will be prefixed by the <i>controllername</i> as well. Every descriptor will hence be of the following format by default: <i>Controllername->desktopgroup:virtualdesktop</i> . If you want to remove the <i>controllername</i> prefix from the descriptors, then, set this flag to No .
Report Unavailability	By default, this flag is set to No . This implies that, by default, the test will not report the unavailability of network connection to any virtual desktop. In other words, if the <i>Network availability</i> measure of this test registers the value 0 for any virtual desktop, then, by default, this test will not report any measure for that virtual desktop; under such circumstances, the corresponding virtual desktop name will not appear as a descriptor of this test. You can set this flag to Yes , if you want the test to report and alert you to the unavailability of the network connection to a virtual desktop.
PacketSize	The size of packets used for the test (in bytes).
PacketCount	The number of packets to be transmitted during the test.
Timeout	How long after transmission should a packet be deemed lost (in seconds).
PacketInterval	Represents the interval (in milliseconds) between successive packet transmissions during the execution of the network test for a specific target.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Average delay	Indicates the average delay between transmission of packet to a virtual desktop and receipt of the response to	Secs	An increase in network latency could result from misconfiguration of the router(s) along the path, network congestion, retransmissions at the network, etc.

Measurement	Description	Measurement Unit	Interpretation
	the packet at the source.		
Minimum delay	The minimum time between transmission of a packet and receipt of the response back.	Secs	A significant increase in the minimum round-trip time is often a sure sign of network congestion.
Packet loss	Indicates the percentage of packets lost during transmission from source to target and back.	Percent	Packet loss is often caused by network buffer overflows at a network router or by packet corruptions over the network.
Network availability	Indicates whether the network connection is available or not.	Percent	A value of 100 indicates that the virtual desktop is connected. The value 0 indicates that the desktop is not connected. Typically, the value 100 corresponds to a Packet loss of 0.

4.6.5 Virtual Desktop Logins in Farm Test

This test monitors the logins to virtual desktops in a DDC farm and reports the total count of logins and logouts.

Target of the test : A Citrix Delivery Controller v3/4

Agent deploying the test : An internal agent

Outputs of the test : One set of results for the DDC farm being monitored.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the specified host listens to.
DD Frequency	Refers to the frequency with which detailed diagnosis measures are to be generated for this test. The default is 1:1. This indicates that, by default, detailed measures will be generated every time this test runs, and also every time the test detects a problem.

Parameter	Description
	<p>You can modify this frequency, if you so desire. Also, if you intend to disable the detailed diagnosis capability for this test, you can do so by specifying <i>none</i> against DD frequency.</p>
Detailed Diagnosis	<p>To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Current sessions	Indicates the number of user sessions that are currently active across all the virtual desktops.	Number	This is a good indicator of the session load on the desktops.
New logins	Indicates the number of new logins to the virtual desktops.	Number	A consistent zero value could indicate a connection issue.
Percent new logins	Indicates the percentage of current sessions that logged in during the last measurement period.	Percent	
Sessions logging out	Indicates the number of sessions that logged out.	Number	If all the current sessions suddenly log out, it indicates a problem condition that requires investigation. The detailed diagnosis of this measure lists the sessions that logged out.

The detailed diagnosis of the *Sessions logging out* measure provides details of the sessions that logged out.

Details of completed user sessions				
Time	GuestName	UserName	LoginTime	Duration[Mins]
Aug 06, 2009 10:36:37	CHN\EGVCXDS11	chn\egtest	08/06/2009 10:17 AM	19.4119

Figure 4.24: The detailed diagnosis of the Sessions logging out measure

4.6.6 Virtual Desktop Logins in Controller Test

This test monitors the logins to virtual desktops managed by the monitored Xen DDC and reports the total count of logins and logouts.

Target of the test : A Citrix Delivery Controller v3/4

Agent deploying the test : An internal agent

Outputs of the test : One set of results for the Citrix Delivery Controller v3/4 being monitored.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the specified host listens to.
DD Frequency	Refers to the frequency with which detailed diagnosis measures are to be generated for this test. The default is 1:1. This indicates that, by default, detailed measures will be generated every time this test runs, and also every time the test detects a problem. You can modify this frequency, if you so desire. Also, if you intend to disable the detailed diagnosis capability for this test, you can do so by specifying <i>none</i> against DD frequency.
Detailed Diagnosis	To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option. The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:

Parameter	Description
	<ul style="list-style-type: none"> The eG manager license should allow the detailed diagnosis capability Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Current sessions	Indicates the number of user sessions that are currently active across all the virtual desktops.	Number	This is a good indicator of the session load on the desktops.
New logins	Indicates the number of new logins to the virtual desktops.	Number	A consistent zero value could indicate a connection issue.
Percent new logins	Indicates the percentage of current sessions that logged in during the last measurement period.	Percent	
Sessions logging out	Indicates the number of sessions that logged out.	Number	If all the current sessions suddenly log out, it indicates a problem condition that requires investigation. The detailed diagnosis of this measure lists the sessions that logged out.

4.6.7 Virtual Desktop Disconnects in Farm Test

A user session is terminated when a user logs off from the desktop or when the session is abruptly interrupted. When a user logs off, all the applications started by the user are terminated. However, when a user disconnects, the applications started by the user will keep running on the desktop consuming resources. Hence, the number of disconnected sessions on a desktop should be kept to a minimum.

In some environments, desktop administrators may also wish to automatically restart/shutdown those virtual desktops with sessions that are in a disconnected state for a long period of time.

This test reports the total number of disconnected sessions to the desktops managed by a Xen DDC farm, and also automatically restarts/shuts down the virtual desktop, if the disconnected session duration to that desktop exceeds a configured value.

Target of the test : A Citrix Delivery Controller v3/4

Agent deploying the test : An internal agent

Outputs of the test : One set of results for the Xen DDC farm that is being monitored.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the specified host listens to.
Admin User and Admin Password	If you want the test to automatically reboot/shut down virtual desktops if the duration of disconnected sessions to the desktops exceeds a configured value, then you first need to grant the test the privilege to access the desktops. For this purpose, in the Admin User and Admin Password text boxes, provide the credentials of a user with <i>administrative</i> privileges to the hosting provider (VC or XenServer) of the desktops. If the test needs to monitor session disconnects across multiple hosting providers, then multiple admin users and admin passwords need to be provided – one for every hosting provider. To help administrators provide these user details quickly and easily, the eG administrative interface embeds a special configuration page. To access this page, simply click on the Click here hyperlink that appears just above the parameters of this test in the test configuration page. To know how to use the special page, refer to Section 4.6.7.1 of this document. By default, these parameters are set to <i>none</i> ; this indicates that the test is not authorized to reboot/shut down desktops by default.
VD Action Duration	The test will automatically reboot/shut down virtual desktops, if the disconnected session duration (in minutes) specified here is violated.
Is VD Reboot	Set this flag to True if the test needs to restart the desktop if the configured VD Action Duration is exceeded. By default, this flag is set to False .
Is VD Shut Down	Set this flag to True if the test needs to shut down the desktop if the configured VD Action Duration is exceeded. By default, this flag is set to False .

Note:

Parameter	Description
	Note that only one of the two flags – Is VD Reboot and Is VD Shut Down – can be set to True at any given point in time. If both are set to False , then the test will neither reboot nor shut down any virtual desktops. If one flag is set to True , but the Admin User and Admin password text boxes are configured with <i>none</i> , then again the test will neither reboot nor shut down any virtual desktops.
Reconnect Duration	This parameter is used by the test while computing the value for the Quick reconnects by users measure. This measure counts all the users who reconnected to the virtual desktops within the short period of time (in minutes) specified against Reconnect Duration.
DD Frequency	Refers to the frequency with which detailed diagnosis measures are to be generated for this test. The default is 1:1. This indicates that, by default, detailed measures will be generated every time this test runs, and also every time the test detects a problem. You can modify this frequency, if you so desire. Also, if you intend to disable the detailed diagnosis capability for this test, you can do so by specifying <i>none</i> against DD frequency.
Detailed Diagnosis	<p>To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Total disconnected sessions	Indicates the total number of sessions that are in the disconnected state.	Number	The detailed diagnosis for this measure provides the complete details of disconnected sessions on the virtual desktops managed by the Xen DDC farm.

Measurement	Description	Measurement Unit	Interpretation
New disconnects	Indicates the number of sessions that were disconnected in the last measurement period	Number	The detailed diagnosis for this measure can be used to track whether specific users are being disconnected often.
Quick reconnects by users	Indicates the number of users who reconnected soon after a disconnect.	Number	The detailed diagnosis of this measure, if enabled lists the users who have reconnected quickly.
Successful restarts /shut downs	Indicates the number of virtual desktops that were shut down/restarted successfully by this test.	Number	These measures will appear only if the following conditions are fulfilled: <ul style="list-style-type: none"> • If the Admin User and Admin Password are not set to '<i>none</i>'. • If either the Is VD Reboot or Is VD Shut down flag is set to True.
Failed restarts / shut downs	Indicates the number of virtual desktops that could not be restarted/ shut down by this test.	Number	

4.6.7.1 Configuring users for disconnected sessions monitoring

In order to enable the eG agent to automatically reboot/shut down virtual desktops managed by multiple hosting providers (VC or XenServer), the *Virtual Desktop Disconnects* test must be configured with multiple **DOMAINS**, **ADMIN USERS**, and **ADMIN PASSWORDS** – one for every hosting provider. To enable you to provide these user details easily, the eG administrative interface provides a special page. To access this page, just click on the **Click here** hyperlink in the *Virtual Desktop Disconnects* test configuration page.

Virtual Desktop Disconnects parameters to be configured for **ddc:902 (Xen Desktop Delivery Controller)**

To configure users for this test [Click here](#)

DDC	
TEST PERIOD	: <input type="button" value="5 mins"/>
HOST	: <input type="text" value="192.168.10.3"/>
PORT	: <input type="text" value="902"/>
* XEN PS CONSOLE FILE PATH	: <input type="text" value="\$unconfigured"/>
ADMIN SERVER	: <input type="text" value="192.168.10.3"/>
DOMAIN	: <input type="text" value="none"/>
ADMIN USER	: <input type="text" value="none"/> <input type="button" value="+"/>
ADMIN PASSWORD	: <input type="text" value="*****"/>
CONFIRM PASSWORD	: <input type="text" value="*****"/>
VD ACTION DURATION	: <input type="text" value="none"/>
IS VD REBOOT	: <input type="radio"/> Yes <input checked="" type="radio"/> No
IS VD SHUTDOWN	: <input type="radio"/> Yes <input checked="" type="radio"/> No
RECONNECT DURATION	: <input type="text" value="15"/>
DD FREQUENCY	: <input type="text" value="1:1"/>
DETAILED DIAGNOSIS	: <input checked="" type="radio"/> On <input type="radio"/> Off
<input type="button" value="Update"/>	

Figure 4.25: Configuring the Virtual Desktop Disconnects test

Upon clicking, Figure 4.26 will appear, using which the VM user details can be configured.

CONFIGURATION OF MULTIPLE USERS

This page enables you to add/modify users for the test **Virtual Desktop Disconnects** of **ddc:902 (Xen Desktop Delivery Controller)**

Domain	: <input type="text" value="chn"/>	Admin User	: <input type="text" value="egtest"/>
Admin Pwd	: <input type="text" value="*****"/>	Confirm Pwd	: <input type="text" value="*****"/> <input type="button" value="+"/>
<input type="button" value="Update"/> <input type="button" value="Clear"/>			

Figure 4.26: The VM user configuration page

To add a user specification, do the following:

1. First, provide the name of the **Domain** to which the VMs belong (see Figure 4.26).
2. The eG agent must be configured with user privileges that will allow the agent to automatically restart/shutdown the desktops managed by different hosting providers. If a valid **Domain** name has been specified, then a domain administrator account can be provided in the **Admin User** text box.
3. The password of the specified **Admin User** should be mentioned in the **Admin Pwd** text box.
4. Confirm the password by retyping it in the **Confirm Pwd** text box.
5. To add more users, click on the  button in Figure 4.26. This will allow you to add one more user specification.
6. In some virtualized environments, the same **Domain** could be accessed using multiple **Admin User** names. For instance, to login to a **Domain** named *egitlab*, the eG agent can use the **Admin User** name *labadmin* or the **Admin User** name *ituser*. You can configure the eG agent with the credentials of both these users as shown by Figure 4.27.

The same 'Domain' mapped to different 'Admin Users'

CONFIGURATION OF MULTIPLE USERS

This page enables you to add/modify users for the test **Virtual Desktop Disconnects of ddc:902 (Xen Desktop Delivery Controller)**

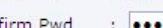
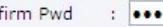
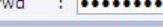
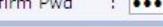
Domain : chn	Admin User : egtest
Admin Pwd : 	Confirm Pwd : 
	
Domain : mas	Admin User : eguser
Admin Pwd : 	Confirm Pwd : 
	
Domain : egitlab	Admin User : ituser
Admin Pwd : 	Confirm Pwd : 
	
Domain : egitlab	Admin User : labadmin
Admin Pwd : 	Confirm Pwd : 
	
<input type="button" value="Update"/> <input type="button" value="Clear"/>	

Figure 4.27: Associating a single domain with different admin users

When this is done, then, while attempting to connect to the domain, the eG agent will begin by using the first **Admin User** name of the specification. In the case of Figure 4.27, this will be *ituser*. If, for some reason, the agent is unable to login using the first **Admin User** name, then it will try to login again, but this time using the second **Admin User** name of the specification - i.e., *labadmin* in our example (see Figure 4.27). If the first login attempt itself is successful, then the agent will ignore the second **Admin User** name.

7. To clear all the user specifications, simply click the **Clear** button in Figure 4.27.

8. To remove the details of a particular user alone, just click the  button in Figure 4.27.
9. To save the specification, just click on the **Update** button in Figure 4.27. This will lead you back to the test configuration page, where you will find the multiple domain names, user names, and passwords listed against the respective fields (see Figure 4.27).

Virtual Desktop Disconnects parameters to be configured for **ddc:902 (Xen Desktop Delivery Controller)**

To configure users for this test [Click here](#) 

DDC	
TEST PERIOD	: <input type="text" value="5 mins"/> 
HOST	: <input type="text" value="192.168.10.3"/>
PORT	: <input type="text" value="902"/>
* XEN PS CONSOLE FILE PATH	: <input type="text" value="hell\XdCommands.psc1"/>
ADMIN SERVER	: <input type="text" value="192.168.10.3"/>
DOMAIN	: <input type="text" value="chn,mas,egitlab,egitlab"/>
ADMIN USER	: <input type="text" value="egtest,eguser,ituser,ial"/> 
ADMIN PASSWORD	: <input type="password" value="*****"/>
CONFIRM PASSWORD	: <input type="password" value="*****"/>
VD ACTION DURATION	: <input type="text" value="none"/>
IS VD REBOOT	: <input type="radio"/> Yes <input checked="" type="radio"/> No
IS VD SHUTDOWN	: <input type="radio"/> Yes <input checked="" type="radio"/> No
RECONNECT DURATION	: <input type="text" value="15"/>
DD FREQUENCY	: <input type="text" value="1:1"/>
DETAILED DIAGNOSIS	: <input checked="" type="radio"/> On <input type="radio"/> Off
Update	

Figure 4.28: The test configuration page displaying multiple domain names, user names, and passwords

4.6.8 Virtual Desktop Disconnects in Controllers Test

This test reports the total number of disconnected sessions to the desktops managed by the monitored Xen DDC, and also automatically restarts/shuts down the virtual desktop, if the disconnected session duration to that desktop exceeds a configured value.

Target of the test : A Citrix Delivery Controller v3/4

Agent deploying the test : An internal agent

Outputs of the test : One set of results for the Delivery Controller 3/4 being monitored.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the specified host listens to.
Admin User and Admin Password	<p>If you want the test to automatically reboot/shut down virtual desktops if the duration of disconnected sessions to the desktops exceeds a configured value, then you first need to grant the test the privilege to access the desktops. For this purpose, in the Admin User and Admin password text boxes, provide the credentials of a user with administrative privileges to the hosting provider (VC or XenServer) of the desktops. If the test needs to monitor session disconnects across multiple hosting providers, then multiple admin users and admin passwords need to be provided – one for every hosting provider. To help administrators provide these user details quickly and easily, the eG administrative interface embeds a special configuration page. To access this page, simply click on the Click here hyperlink that appears just above the parameters of this test in the test configuration page. To know how to use the special page, refer to Section 4.6.7.1 of this document.</p> <p>By default, these parameters are set to <i>none</i>; this indicates that the test is not authorized to reboot/shut down desktops by default.</p>
VD Action Duration	The test will automatically reboot/shut down virtual desktops, if the disconnected session duration (in minutes) specified here is violated.
Is VD Reboot	Set this flag to True if the test needs to restart the desktop if the configured VD Action Duration is exceeded. By default, this flag is set to False .
Is VD Shut Down	Set this flag to True if the test needs to shut down the desktop if the configured VD Action Duration is exceeded. By default, this flag is set to False .
<p>Note:</p> <p>Note that only one of the two flags – Is VD Reboot and Is VD Shut Down – can be set to True at any given point in time. If both are set to False, then the test will neither reboot nor shut down any virtual desktops. If one flag is set to True, but the Admin User and Admin password text boxes are configured with <i>none</i>, then again the test will neither reboot nor shut down any virtual desktops.</p>	
Reconnect Duration	This parameter is used by the test while computing the value for the Quick reconnects by users measure. This measure counts all the users who reconnected to the virtual desktops within the short period of time (in minutes) specified against Reconnect Duration.

Parameter	Description
DD Frequency	<p>Refers to the frequency with which detailed diagnosis measures are to be generated for this test. The default is 1:1. This indicates that, by default, detailed measures will be generated every time this test runs, and also every time the test detects a problem. You can modify this frequency, if you so desire. Also, if you intend to disable the detailed diagnosis capability for this test, you can do so by specifying <i>none</i> against DD frequency.</p>
Detailed Diagnosis	<p>To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Total disconnected sessions	Indicates the total number of sessions that are in the disconnected state.	Number	The detailed diagnosis for this measure provides the complete details of disconnected sessions on the virtual desktops managed by the Xen DDC.
New disconnects	Indicates the number of sessions that were disconnected in the last measurement period	Number	The detailed diagnosis for this measure can be used to track whether specific users are being disconnected often.
Quick reconnects by users	Indicates the number of users who reconnected soon after a disconnect.	Number	The detailed diagnosis of this measure, if enabled lists the users who have reconnected quickly.
Successful restarts	Indicates the number of	Number	These measures will appear only if the

Measurement	Description	Measurement Unit	Interpretation
/shut downs	virtual desktops that were shut down/restarted successfully by this test.		following conditions are fulfilled: <ul style="list-style-type: none"> • If the Admin User and Admin Password are not set to '<i>none</i>'.
Failed restarts / shut downs	Indicates the number of virtual desktops that could not be restarted/ shut down by this test.	Number	<ul style="list-style-type: none"> • If either the Is VD Reboot or Is VD Shut down flag is set to True.

4.7 Troubleshooting

If one/more of the Xen DDC tests fail, then a possible reason for this anomaly would be the failure of the powershell scripts associated with the affected tests. To verify this, do the following:

1. Login to the *admin server* of the DDC farm.
2. Go to the PowerShell command prompt on the server.
3. Switch to the root directory and execute a command in the following format:

powershell -psconsolefile “<consolefile_path>” -command “<powershell_script> <IP_address_of_the_admin_server>”

4. For instance, if the *DDC Farm* test failed, then, to check whether it can be attributed to the failure of the *XenFarms.ps1* script associated with the test, execute the following command:

powershell -psconsolefile “C:\Program Files\Citrix\Desktop Delivery Controller

Powershell\XdCommands.psc1” – command “C:\egurkha\lib\XenFarms.ps1 192.168.10.87”

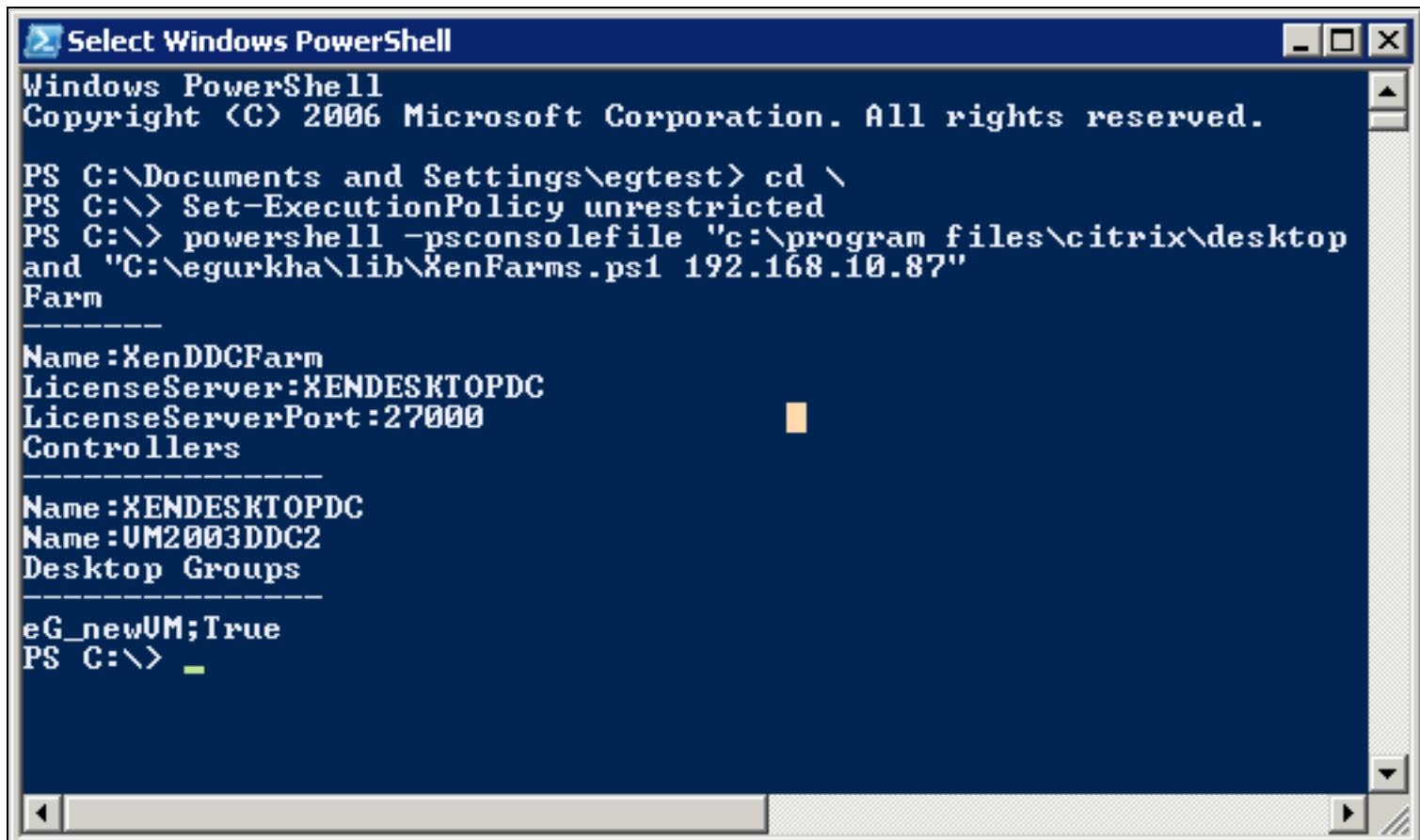
5. If the script does not execute at all, then, it could imply that the PowerShell SDK restricts script execution. To lift this restriction, execute the following command before attempting script execution:

Set-ExecutionPolicy unrestricted

Note:

On a 64 bit platform, you must set the execution policy for the 32 bit PowerShell environment rather than the execution policy for the 64 bit PowerShell environment. In such a case therefore, use the Windows PowerShell(32) shell instance to set the policy.

6. Then, try to execute the *XenFarms.ps1* script (in the case of our example) again. If the script executes successfully, then the output will be displayed as depicted by Figure 4.29 below.



```

Select Windows PowerShell
Windows PowerShell
Copyright (C) 2006 Microsoft Corporation. All rights reserved.

PS C:\Documents and Settings\egtest> cd \
PS C:\> Set-ExecutionPolicy unrestricted
PS C:\> powershell -psconsolefile "c:\program files\citrix\desktop
and "C:\egurkha\lib\XenFarms.ps1 192.168.10.87"
Farm
-----
Name:XenDDCFarm
LicenseServer:XENDESKTOPDC
LicenseServerPort:27000
Controllers
-----
Name:XENDESKTOPDC
Name:VM2003DDC2
Desktop Groups
-----
eG_newUM;True
PS C:\> _

```

Figure 4.29: Output of the powershell script

7. Similarly, you can check whether the script associated with each of the Xen DDC tests execute successfully or not. The tests and their corresponding script files are provided below for your benefit:

Test Name	Script
DDC Farm	XenFarms.ps1
Desktops in Farm	XenFarmDesktops.ps1
VM Platform Status	HostInfra.ps1
Desktop Groups	DesktopGroups.ps1

Test Name	Script
VM Platform for Desktop Groups	XenVMInfra.ps1
Desktop Groups Availability	XenDGs.ps1
VD Connectivity Check	XenVD.ps1
Virtual Desktop Availability	XenVD.ps1
Virtual Desktop Logins	VDLogins.ps1
Virtual Desktops	XenVD.ps1

Chapter 4: Citrix Delivery Controller v5 Monitoring Using eG Enterprise

Citrix Delivery Controller 5 meets the desktop virtualization requirements of an organization with Citrix FlexCast™ delivery technology. With FlexCast, IT can deliver every type of virtual desktop, hosted or local, physical or virtual -each specifically tailored to meet the performance, security and flexibility requirements of each individual user.

With Citrix FlexCast, you can use five types of virtual desktops within the hosted VDI infrastructure. These are, namely, Existing, Physical, Pooled, Dedicated, and Streamed desktops. All these desktop groups can be easily integrated into Citrix's modular architecture as indicated by Figure 4.30.

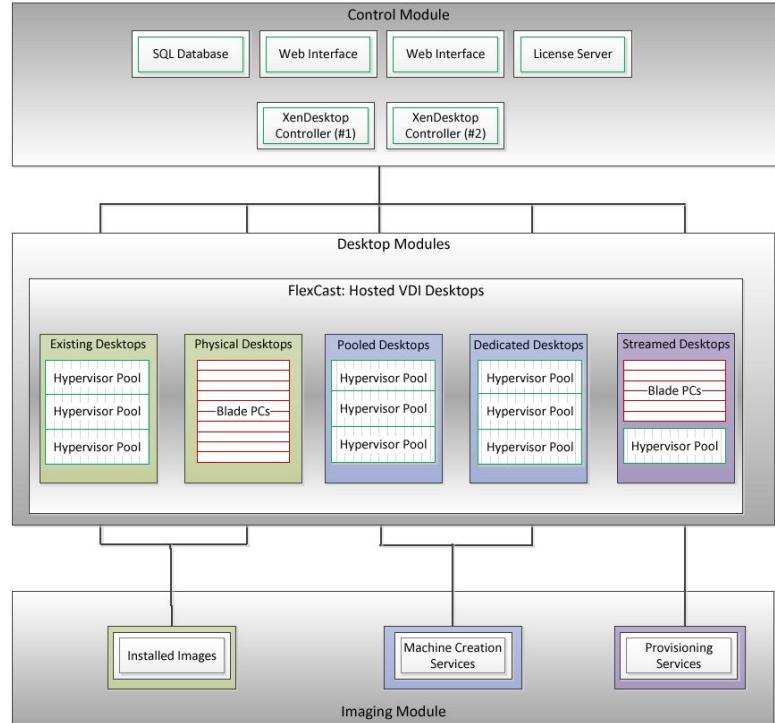


Figure 4.30: How the Citrix Delivery Controller 5 service is delivered?

The modular architecture creates a single design for a data center, integrating all FlexCast models. The Control Module manages user access and virtual desktop allocation. The Desktop Modules integrates the desktop types mentioned above into the modular architecture. The Imaging module provides the virtual desktops with the master desktop image.

At the core of the Control Module of the Delivery Controller 5 architecture is the XenDesktop Controller or the Delivery Controller 5. The broker provides the link between the Web Interface and the XenDesktop site. The controllers authenticate users, enumerate resources for the users, and direct user launch requests to the appropriate virtual desktop. The controllers manage and maintain the state of the XenDesktop site to help control desktop startups, shut downs, and heart beats. The controllers constantly query and update the SQL database with site status, allowing controllers to go offline without impacting user activities. It is recommended that at least two controllers be deployed per XenDesktop site to provide high availability. As the site grows, additional controllers might be required if the allocated CPU cannot service the user requests fast enough.

A malfunctioning broker can hence cause significant delays in provisioning of desktops, thereby affecting the quality of the user experience with the XenDesktop service. To ensure the prompt delivery of virtual desktops to users, the broker has to be continuously monitored, and administrators proactively alerted to potential issues in its performance. This is what exactly eG Enterprise does!

Chapter 5: How does eG Enterprise Monitor the Citrix Delivery Controller 5?

eG Enterprise adopts an agent-based approach for monitoring the DDC. This approach requires that the eG agent be installed on the Delivery Controller to be monitored. This agent should then be configured to periodically execute tests, which use the **PowerShell SDK** that is built into the broker to collect a wide variety of performance statistics pertaining to the broker.

To enable the eG agent to use this SDK, make sure that the **Microsoft PowerShell SDK 1.0** pre-exists on the broker host. If not available, then, connect to the URL: <http://www.microsoft.com/windowsserver2003/technologies/management/powershell/download.mspx>, download the installable, and then install the SDK on the target host.

The eG agent begins collecting the required metrics from the broker, and presents them to users with the help of the monitoring model of Figure 6.1. To start monitoring the DDC, first you have to manage the DDC component using the procedure discussed in the following section.

5.1 Managing the Citrix Delivery Controller 5

eG Enterprise is capable of auto-discovering the Citrix Delivery Controller 5 components in the environment. The following steps explain you how to manage the auto-discovered components:

1. Log into the eG administrative interface.
2. The Citrix Delivery Controller 5 component is usually auto-discovered. If not, run discovery using the **DISCOVERY** page (Infrastructure -> Components -> Discovery) The discovered components however, need to go through a manual management exercise, using the **COMPONENTS – MANAGE / UNMANAGE** page (Infrastructure -> Components -> Manage/Unmanage). This process is depicted by Figure 5.1 and Figure 5.2 below.

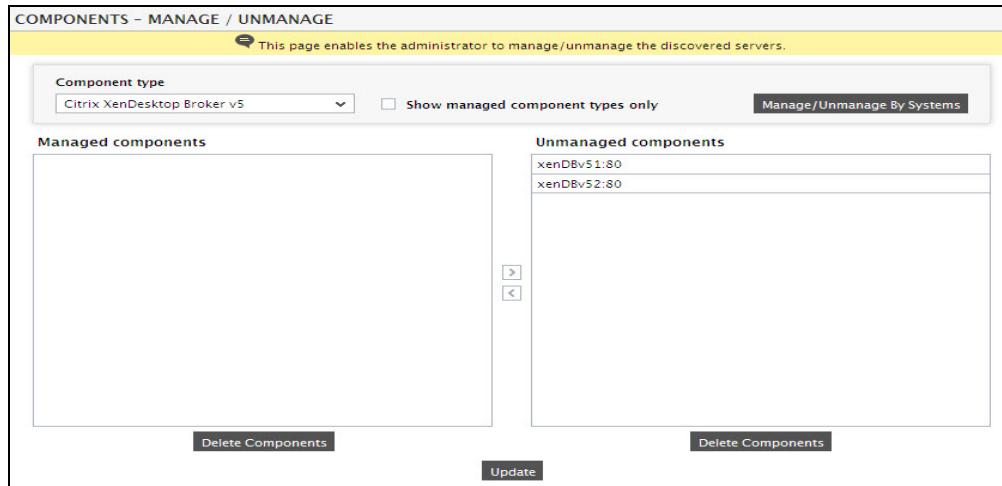


Figure 5.1: Viewing the list of unmanaged Citrix Delivery Controller 5

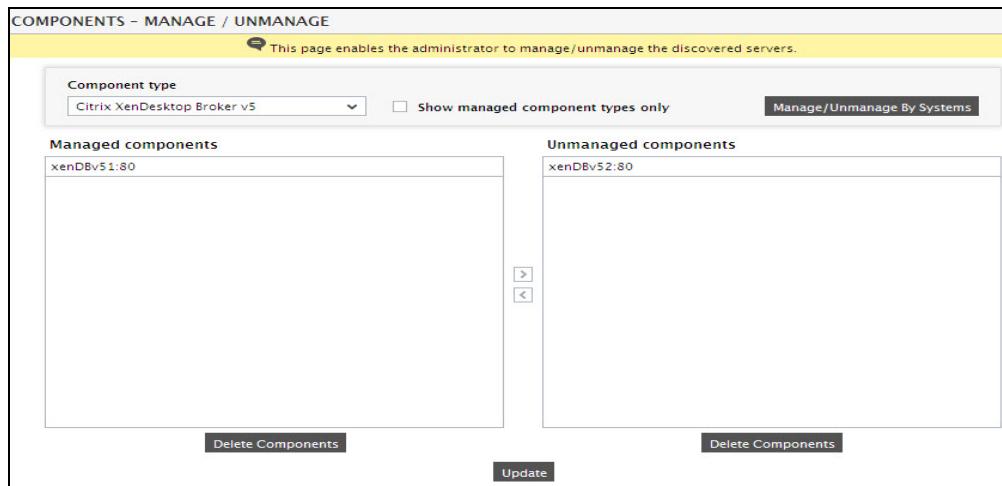


Figure 5.2: Managing a Citrix Delivery Controller 5

3. Once you managed the component, all tests relating to the managed component will be configured automatically.
4. Finally, sign out of the eG administrative interface.

Chapter 6: Monitoring the Citrix Delivery Controller 5

eG Enterprise offers a 100%, web-based Delivery Controller- 5 model (Figure 6.1) to continuously monitor the broke and to proactively alert administrators to potential issues in its performance.

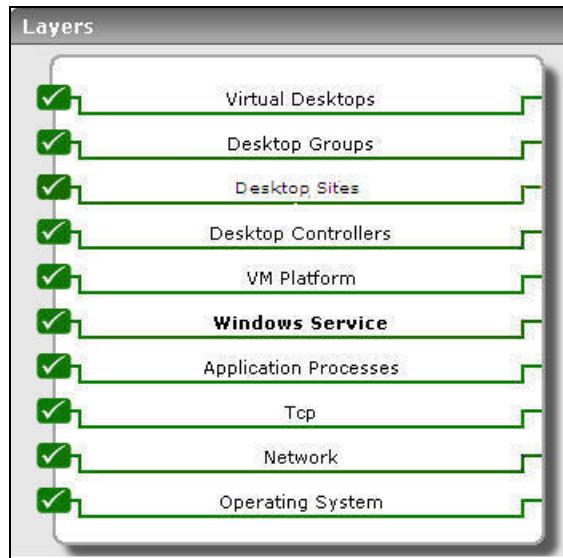


Figure 6.1: Layer model of the Citrix Delivery Controller 5

The metrics mapped to every layer of this model enable administrators to find quick and accurate answers to the following performance queries:

- Is the broker able to connect to the hosting server?
- Is any hosting server in the maintenance mode? If so, which one?
- Have any controllers in the farm failed? If so, which ones?
- Is the controller being monitored operating without glitches?
- Are any controllers in the farm in a powered-off state? If so, which ones?
- Is the controller being monitored in a powered-on/off state currently?
- Are the critical site services running across the farm? Are they inactive on any controller in the farm? If so, which ones?
- Are the critical site services running on the controller being monitored?
- How healthy are the interactions between the broker's MS SQL database and critical Citrix services such as the Broker service, the Configuration service, the Host service, the AD Identity

service, the Machine Creation service, and the Machine Identity service? Is any service unable to access the database, or is any service experiencing slowdowns while executing database transactions? Which one of these services is in an abnormal state currently?

- Have the broker's logs captured any errors/warnings recently?
- Is any desktop unable to register with the broker? If so, which one?
- How many catalogs have been configured on the broker? What are they? What is the type of each catalog?
- Have physical machines been included in any catalog? If so, which catalog is it?
- How many desktops in each catalog have been assigned to users, and how many are unassigned?
- Does any catalog consist of desktops that do not belong to any desktop group?
- Is the License server available in the site?
- Is the broker able to connect to the SQL database server?
- Is any desktop group in maintenance mode?
- Is any desktop group unavailable?
- Are there adequate idle desktops in every group, or is any group over-utilized?
- Have any desktops disconnected from their groups? Which groups have such disconnected desktops?
- Does any desktop group consist of unregistered desktops?
- Which desktop group is managing CPU-intensive desktops? Which desktops are these? Which controller is managing these desktop groups?
- Are too many desktops in a group experiencing network latencies?
- Did the connection attempt to any desktop fail recently? If so, which desktop is this? Which desktop group and controller are managing this desktop?
- Are any desktops in a group powered off currently?
- Is the broker overloaded with sessions?
- Have published applications been accessed in any session?
- Have too many user sessions disconnected from the broker?
- Are too many sessions to virtual desktops logging out?

- Is any desktop in an Unavailable state currently?
- Is the virtual desktop agent unavailable on any desktop?
- Is any desktop in the maintenance mode?

6.1 The VM Platform Layer

Use the test mapped to this layer to determine connectivity issues (if any) between the broker and the hosting platform.



Figure 6.2: The tests mapped to the VM Platform layer

6.1.1 Hypervisor Connections Test

This test reports the status of the connection between the Delivery Controller and each server that hosts virtual desktops. In the absence of a healthy connection between the two, the broker may not be able to provision desktops on-demand.

If users complain of any delay in the servicing of their desktop requests, you may want to use this test to check the connection status between the broker and the server hosting that desktop, so that connection errors (if any) can be promptly detected.

Target of the test : A Citrix Delivery Controller 5.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for every hosting server that is managed by the Delivery Controller being monitored.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the specified host listens to.

Parameter	Description
Detailed Diagnosis	<p>To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation									
Status of broker's connection to hypervisor	Indicates the status of the connection between the broker and this hosting server.		<p>This test reports one of the following values to indicate the status of the connection between the broker and a hosting server:</p> <ul style="list-style-type: none"> • On • InMaintenanceMode • Unavailable <p>The numeric values that correspond to the above-mentioned states are as follows:</p> <table border="1"> <thead> <tr> <th>State</th> <th>Numeric Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>On</td> <td>1</td> <td>Indicates that the broker is in contact with the hypervisor</td> </tr> <tr> <td>InMaintenanceMode</td> <td>2</td> <td>Indicates</td> </tr> </tbody> </table>	State	Numeric Value	Description	On	1	Indicates that the broker is in contact with the hypervisor	InMaintenanceMode	2	Indicates
State	Numeric Value	Description										
On	1	Indicates that the broker is in contact with the hypervisor										
InMaintenanceMode	2	Indicates										

Measurement	Description	Measurement Unit	Interpretation		
			State	Numeric Value	Description
			Under Maintenance		that the hosting server (e.g., XenServer, Hyper-V) through which the virtual desktops are managed, is under maintenance
			Unavailable	3	Indicates that the broker is unable to contact the hypervisor

Note:

By default, this measure reports the above-mentioned **States** while indicating the connection status of the broker and the hypervisor. However, the graph of this measure will represent states using the corresponding numeric equivalents - 1 to 3 only.

The detailed diagnosis of this measure reveals the IP address of every hosting server being managed by the monitored Delivery Controller.

The detailed diagnosis of the *Status of broker's connection to hypervisor* measure reveals the IP address of every hosting server being managed by the monitored Delivery Controller.

Component		Measured By	Description						
XD5_141:80		XD5_141	vCenter109						
Test	Hypervisor Connection Status								
Measurement	Status of broker's connection to hypervisor								
Timeline	1 hour	From: Jan 10, 2011 Hr: 13 Min: 35 To: Jan 10, 2011 Hr: 14 Min: 35	Submit						
<table border="1"> <thead> <tr> <th colspan="2">Details of Hypervisors</th> </tr> <tr> <th>Time</th> <th>Hypervisor IP Address</th> </tr> </thead> <tbody> <tr> <td>Jan 10, 2011 14:34:21</td> <td>192.168.10.136</td> </tr> </tbody> </table>				Details of Hypervisors		Time	Hypervisor IP Address	Jan 10, 2011 14:34:21	192.168.10.136
Details of Hypervisors									
Time	Hypervisor IP Address								
Jan 10, 2011 14:34:21	192.168.10.136								

Figure 6.3: The detailed diagnosis of the Status of broker's connection to hypervisor measure

6.2 The Desktop Controllers Layer

Besides revealing the availability and overall health of the IIS web server on which the broker executes, this layer also reveals the following:

- Status of each controller in a Delivery Controller farm
- Status of site services
- The health of the interactions between the broker service and the MS SQL database server
- The issues in the communication between the Citrix Configuration Service and the MS SQL database
- Errors in transactions executed by the Citrix Host Service on the broker's database
- How well the Citrix AD Identity Service interacts with the broker's MS SQL database
- The health of transactions performed by the Machine Creation Service on the broker's database
- Whether the Citrix Machine Identity Service is able to connect to the broker's database, and how well the database is managing the load generated by the service
- The load handling ability of the Citrix XML Service that is responsible for communications between the Web Interface component and the XenDesktop site

Desktop Controllers	
<input checked="" type="checkbox"/>	Controllers
<input checked="" type="checkbox"/>	WIN-80J1M3TLK5H.Mas.eGinnovations.com
<input checked="" type="checkbox"/>	Citrix AD Identity Service
<input checked="" type="checkbox"/>	Citrix Broker Service
<input checked="" type="checkbox"/>	Citrix Configuration Service
<input checked="" type="checkbox"/>	Citrix Host Service
<input checked="" type="checkbox"/>	Citrix Machine Creation Service
<input checked="" type="checkbox"/>	Citrix Machine Identity Service
<input checked="" type="checkbox"/>	Citrix XML Services
<input checked="" type="checkbox"/>	assign desktop
<input checked="" type="checkbox"/>	change password
<input checked="" type="checkbox"/>	desktop restart
<input checked="" type="checkbox"/>	disconnect user sessions
<input checked="" type="checkbox"/>	enumerate resources
<input checked="" type="checkbox"/>	get account info
<input checked="" type="checkbox"/>	get capabilities
<input checked="" type="checkbox"/>	get protocol info
<input checked="" type="checkbox"/>	get server farm data
<input checked="" type="checkbox"/>	get user info
<input checked="" type="checkbox"/>	reconnect user sessions
<input checked="" type="checkbox"/>	sta redeem ticket
<input checked="" type="checkbox"/>	sta refresh ticket
<input checked="" type="checkbox"/>	sta request ticket
<input checked="" type="checkbox"/>	sta save
<input checked="" type="checkbox"/>	validate user credentials
<input checked="" type="checkbox"/>	DNS Check
<input checked="" type="checkbox"/>	WIN-80J1M3TLK5H.Mas.eGinnovations.com
<input checked="" type="checkbox"/>	Domain Controller Time Check
<input checked="" type="checkbox"/>	Mas.eGinnovations.com
<input checked="" type="checkbox"/>	HTTP
<input checked="" type="checkbox"/>	HomePage
<input checked="" type="checkbox"/>	WCF EndPoints
<input checked="" type="checkbox"/>	Citrix.Broker.Admin.SDK.IBrokerAdminService
<input checked="" type="checkbox"/>	Citrix.Cds.Protocol.Controller.IDynamicDataSink
<input checked="" type="checkbox"/>	Citrix.Cds.Protocol.Controller.IRegistrar
<input checked="" type="checkbox"/>	Citrix.Cds.Protocol.Controller.ITicketing

Figure 6.4: The tests mapped to the Desktop Controllers layer

6.2.1 Domain Controller Time Check Test

Citrix Delivery Controller 5.x will not be able to launch VMs that are in an unregistered state. The virtual desktop agent executing on a VM might be unable to register the desktop with the DDC (hence, the unregistered state) owing to many reasons; the most important of them is the lack of time synchronization between the DDC and the Active Directory server it integrates with for authenticating user logins.

If virtual desktops are found to be in an unregistered state, you can use this test to check whether the DDC time-syncs with the AD server. If this test reports an error in time synchronization, then, you can easily conclude that this is the cause for the unregistered state of the virtual desktops

Target of the test : A Citrix Delivery Controller 5.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for the domain name of the AD server with which the Citrix Delivery Controller 5.x integrates.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the specified host listens to.
Detailed Diagnosis	<p>To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation						
Domain time synchronization status	Indicates whether the DDC time syncs with the domain controller.		<p>This measure reports the value <i>Ok</i> if the DDC time-syncs with the AD server. The value <i>Error</i>, on the other hand, is reported if the DDC time does not sync with the AD server's time stamp. The numeric values that correspond to the above-mentioned states are as follows:</p> <table border="1"> <thead> <tr> <th>State</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Ok</td><td>1</td></tr> <tr> <td>Error</td><td>0</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned states while indicating the time sync status of the DDC with the domain controller. However, the graph of this measure will represent states using the corresponding numeric equivalents only – i.e., 0 and 1.</p> <p>If this measure reports the value <i>Error</i>, then, you can use the detailed diagnosis of this measure to know the time stamp of the AD server when the problem occurred.</p>	State	Numeric Value	Ok	1	Error	0
State	Numeric Value								
Ok	1								
Error	0								

If this measure reports the value *Error*, then, you can use the detailed diagnosis of this measure to know the time stamp of the AD server when the problem occurred.

Figure 6.5: The detailed diagnosis of the Domain time synchronization status measure

6.2.2 DNS Check Test

To be able to successfully register with the Citrix Delivery Controller 5.x, the virtual desktop agent executing on the virtual desktops should be able to see the correct IP address of the Citrix Delivery Controller 5.x. If the DNS server is incorrectly configured, then it will not be able to resolve the IP address of the Citrix Delivery Controller 5.x to its domain name, thereby causing desktop registration to fail; as a result, DDC will not be able to deliver virtual desktops on-demand to users.

This test brings DNS misconfigurations to light by reporting whether the DNS server is able to resolve the IP address of the Citrix Delivery Controller 5.x to its fully qualified domain name. If this test reports an error, then you can easily conclude that this is the reason why registration failed.

Target of the test : A Citrix Delivery Controller 5.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for the DNS server that the Citrix Delivery Controller 5.x users.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the specified host listens to.
Detailed Diagnosis	To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are

Parameter	Description
	<p>detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation						
DNS lookup status	Indicates whether the DNS server is able to resolve the IP address of the DDC to its fully qualified domain name.		<p>This measure reports the value <i>Ok</i> if the DNS server is able to resolve the IP address of the DDC to its domain name. The value <i>Error</i>, on the other hand, is reported if the DNS server is not able to resolve the IP address of the DDC to its domain name. The numeric values that correspond to the above-mentioned states are as follows:</p> <table border="1"> <thead> <tr> <th>State</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Ok</td><td>1</td></tr> <tr> <td>Error</td><td>0</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned states to indicate whether the DNS is properly configured or not. However, the graph of this measure will represent the states using their corresponding numeric equivalents only – i.e., 0 and 1.</p>	State	Numeric Value	Ok	1	Error	0
State	Numeric Value								
Ok	1								
Error	0								

Note:

This test integrates with XDPing to report metrics. The XDPing tool is a command-line based application which automates the process of checking for the causes of common configuration issues in a XenDesktop environment. The tool can be used to verify configuration settings on both the Citrix Delivery Controller and VDA machines, both from the console and remotely.

To enable the eG agent to integrate with XDPing, you need to download the XDPing tool from the URL: <http://support.citrix.com/article/CTX123278>, and then, copy it to the `<EG_INSTALL_DIR>\eGurkha\bin` directory on the agent host.

6.2.3 WCF EndPoints Test

The Windows Communication Foundation (or WCF) is an application programming interface (API) in the .NET Framework for building connected, service-oriented applications.

WCF is designed in accordance with service oriented architecture principles to support distributed computing where services are consumed by consumers. Clients can consume multiple services and services can be consumed by multiple clients. Services are loosely coupled to each other. Services typically have a WSDL interface (Web Services Description Language) which any WCF client can use to consume the service, irrespective of which platform the service is hosted on. WCF implements many advanced web services (WS) standards such as WS-Addressing, WS-ReliableMessaging and WS-Security.

A WCF client connects to a WCF service via an Endpoint. Each service exposes its contract via one or more endpoints. An endpoint has an address, which is a URL specifying where the endpoint can be accessed, and binding properties that specify how the data will be transferred.

Communication between virtual desktop machines and DDC controllers uses Microsoft's WCF. If virtual desktops are unable to connect to the WCF endpoints or cannot consume the services provided by the endpoints, then virtual desktop registration will fail; consequently, users may be denied access to critical desktops.

Using this test, you can be promptly alerted to the unavailability of any WCF endpoint or the inability of virtual desktops to consume services provided by any endpoint.

Target of the test : A Citrix Delivery Controller 5.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for each WCF endpoint providing communication services between the DDC and virtual desktops.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the specified host listens to.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation						
Connection status	Indicates whether connection to this endpoint is available or not.		<p>This measure reports the value <i>Ok</i> if the connection to the endpoint is available. The value <i>Error</i>, on the other hand, is reported if the connection to the endpoint is unavailable. The numeric values that correspond to the above-mentioned states are as follows:</p> <table border="1"> <thead> <tr> <th>State</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Ok</td><td>1</td></tr> <tr> <td>Error</td><td>0</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned states to indicate whether connection to the endpoint is available or not. However, the graph of this measure will represent the states using their corresponding numeric equivalents only – i.e., 0 and 1.</p>	State	Numeric Value	Ok	1	Error	0
State	Numeric Value								
Ok	1								
Error	0								
Service status	Indicates whether virtual desktops are able to consume services provided by this endpoint.		<p>This measure reports the value <i>Ok</i> if the endpoint services are available for consumption. The value <i>Error</i>, on the other hand, is reported if the endpoint services cannot be consumed. The numeric values that correspond to the above-mentioned states are as</p>						

Measurement	Description	Measurement Unit	Interpretation						
			<p>follows:</p> <table border="1"> <thead> <tr> <th>State</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Ok</td><td>1</td></tr> <tr> <td>Error</td><td>0</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned states to indicate whether endpoint services can be consumed or not. However, the graph of this measure will represent the states using their corresponding numeric equivalents only – i.e., 0 and 1.</p>	State	Numeric Value	Ok	1	Error	0
State	Numeric Value								
Ok	1								
Error	0								

Note:

This test integrates with XDPing to report metrics. The XDPing tool is a command-line based application which automates the process of checking for the causes of common configuration issues in a XenDesktop environment. The tool can be used to verify configuration settings on both the XenDesktop Broker and VDA machines, both from the console and remotely.

To enable the eG agent to integrate with XDPing, you need to download the XDPing tool from the URL: <http://support.citrix.com/article/CTX123278>, and then, copy it to the <EG_INSTALL_DIR>\eGurkha\bin directory on the agent host.

6.2.4 Data Store Check Test

When a Delivery Controller farm is deployed, it must have an associated data store. The farm data store is where persistent information about the farm, such as configuration information and administrator account information, is stored.

Typically, brokers in a farm query the data store for configuration information when attempting to come online. If the data store is unavailable or is inaccessible for long hours, brokers in the farm will remain offline the whole time, thus denying users access to virtual desktops. To avoid this, administrators can run the Data Store Check test at frequent intervals, check whether/not the broker is able to connect to the data store, and in this way, detect connection failures before farm users

complain. In the event of a connection failure, administrators can also use the detailed metrics collected by this test to determine the reason for the connection failure and resolve it.

Note:

This test integrates with XDPing to report metrics. The XDPing tool is a command-line based application which automates the process of checking for the causes of common configuration issues in a XenDesktop environment. The tool can be used to verify configuration settings on both the XenDesktop Broker and VDA machines, both from the console and remotely.

To enable the eG agent to integrate with XDPing, you need to download the XDPing tool from the URL: <http://support.citrix.com/article/CTX123278>, and then, copy it to the <EG_INSTALL_DIR>\eGurkhalbin directory on the agent host.

Target of the test : A Citrix Delivery Controller 5.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for the Delivery Controller monitored.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the DDC for which this test is to be configured.
Port	Refers to the port at which the specified DDC listens to.
DSCheckPath	This test uses Citrix's Data Store Checker tool to verify whether/not the monitored DDC is able to connect to the data store. To enable the test to use this tool, you need to specify the full path to the location of DSCheck.exe in the DSCheckPath text box. For instance, your path can be: <i>C:\Program Files (x86)\Citrix\system32</i> .
Detailed Diagnosis	<p>To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability

Parameter	Description
	<ul style="list-style-type: none"> Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation						
Connectivity status	Indicates whether the broker succeeded or failed in establishing a connection with the data store.		<p>The values that this measure can take and their corresponding numeric values are as follows:</p> <table border="1"> <thead> <tr> <th>Measure Value</th> <th>Numeric Value</th> </tr> </thead> <tbody> <tr> <td>Failure</td> <td>0</td> </tr> <tr> <td>Success</td> <td>1</td> </tr> </tbody> </table> <p>If the value reported is <i>Failure</i>, you can use the detailed diagnosis of this test to determine the reason for the connection failure.</p> <p>Note:</p> <p>By default, this measure reports the above-mentioned Measure Values to indicate the connectivity status of the data store. However, the graph of this measure will represent the same using the numeric equivalents only.</p>	Measure Value	Numeric Value	Failure	0	Success	1
Measure Value	Numeric Value								
Failure	0								
Success	1								

6.2.5 Controller Services Test

This test auto-discovers the critical services executing on the Delivery Controller 5, and reports the status of each service. With the help of this test, you can promptly detect which services are not running currently.

Target of the test : A Citrix Delivery Controller 5.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for each service auto-discovered from the Delivery Controller 5.x.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the specified host listens to.
Detailed Diagnosis	<p>To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation						
Service status	Indicates whether this service is currently running or not.		<p>This measure reports the value <i>Ok</i> if the service is running. The value <i>Error</i>, on the other hand, is reported if the service or any of its dependent services is not running. The numeric values that correspond to the above-mentioned states are as follows:</p> <table border="1"> <thead> <tr> <th>Measure Value</th> <th>Numeric Value</th> </tr> </thead> <tbody> <tr> <td>Ok</td> <td>1</td> </tr> <tr> <td>Error</td> <td>0</td> </tr> </tbody> </table>	Measure Value	Numeric Value	Ok	1	Error	0
Measure Value	Numeric Value								
Ok	1								
Error	0								

Measurement	Description	Measurement Unit	Interpretation
			<p>Note:</p> <p>By default, this measure reports the above-mentioned states to indicate service availability. However, the graph of this measure will represent the states using their corresponding numeric equivalents only – i.e., 0 and 1.</p> <p>If this measure reports the value <i>Error</i>, then, you can use the detailed diagnosis of this test to figure out what is causing the error.</p>

Note:

This test integrates with XDPing to report metrics. The XDPing tool is a command-line based application which automates the process of checking for the causes of common configuration issues in a XenDesktop environment. The tool can be used to verify configuration settings on both the Delivery Controller and VDA machines, both from the console and remotely.

To enable the eG agent to integrate with XDPing, you need to download the XDPing tool from the URL: <http://support.citrix.com/article/CTX123278>, and then, copy it to the <EG_INSTALL_DIR>\eGurkha\bin directory on the agent host.

6.2.6 Controllers Test

Controllers are server machines running instances of the broker service. The broker service is responsible for the brokering of user sessions to desktops or applications, and for power management of the underlying machines. An operational site must contain at least one Controller.

This test auto-discovers the Delivery Controllers configured within a site (i.e., a farm), and reports the current status of each controller and the count of desktops registered with every controller.

Target of the test : A Citrix Delivery Controller 5.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for every controller configured within a farm or for the monitored controller only (depending upon the **ISFARM SERVER** flag setting).

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the specified host listens to.
IsFarmServer	By default, this flag is set to Yes , indicating that the monitored server is the <i>farm</i> server of a controller farm. For a farm server, this test will report metrics at the farm-level - accordingly, a set of metrics will be reported for each controller in the farm. On the other hand, if the monitored controller is only a <i>member</i> of a farm and not the <i>farm</i> server, then set this flag to No . In this case, the test will report metrics for the monitored controller only and not for every controller in the farm.
Detailed Diagnosis	<p>To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Controller state	Indicates the current state of this controller.		<p>This test reports one of the following values to indicate the current state of a controller:</p> <ul style="list-style-type: none"> • Active – Indicates that the controller is powered-on and fully operational • On – Indicates that the controller is powered-on, but not fully

Measurement	Description	Measurement Unit	Interpretation										
			<p>operational.</p> <ul style="list-style-type: none"> • Failed – Indicates that the controller has failed due to some reason • Off – Indicates that the controller is powered-off <p>The numeric values that correspond to the above-mentioned states are as follows:</p> <table border="1"> <thead> <tr> <th>State</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Active</td><td>1</td></tr> <tr> <td>On</td><td>2</td></tr> <tr> <td>Failed</td><td>3</td></tr> <tr> <td>Off</td><td>4</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned States while indicating the current state of a controller. However, the graph of this measure will represent states using the corresponding numeric equivalents – i.e., 1 to 4.</p> <p>The detailed diagnosis of this measure reveals when the controller was last accessed, when it was last started, and also displays the site services that were active on the controller during its last access.</p>	State	Numeric Value	Active	1	On	2	Failed	3	Off	4
State	Numeric Value												
Active	1												
On	2												
Failed	3												
Off	4												
Total registered desktops	Indicates the number of desktops that are currently registered with this controller.	Number											

The detailed diagnosis of the *Controller state* measure reveals when the controller was last accessed, when it was last started, and also displays the site services that were active on the controller during its last access.

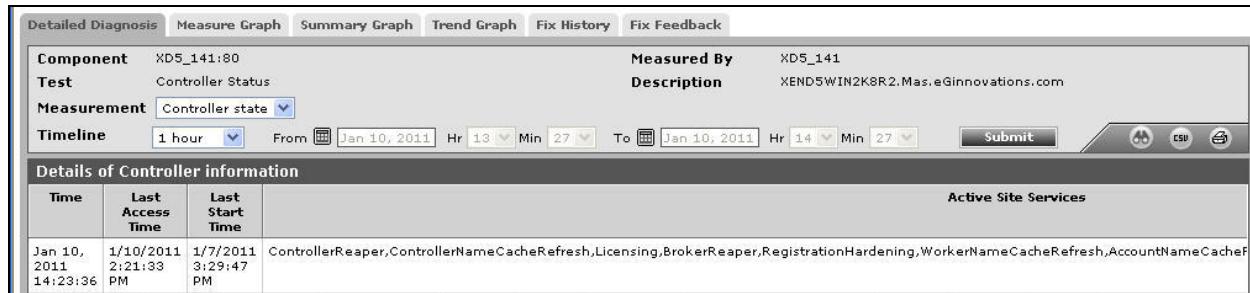


Figure 6.6: The detailed diagnosis of the Controller state measure

6.2.7 Controller Active Site Services Test

With the help of this test, you can periodically monitor the state of site services that are active on every controller in a Delivery Controller farm, and be proactively alerted if any of these services suddenly stop.

This test is disabled by default. To enable the test, go to the **ENABLE / DISABLE TESTS** page using the menu sequence : Agents -> Tests -> Enable/Disable, pick the *Citrix Delivery Controller 5.x* as the **Component type**, set *Performance* as the **Test type**, choose this test from the disabled tests list, and click on the < button to move the test to the **ENABLED TESTS** list. Finally, click the **Update** button.

Target of the test : A Citrix Delivery Controller 5.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for each site service that is active on each controller in the farm or for each site service active on the monitored controller alone (depending upon the **ISFARM SERVER** flag setting)Configurable parameters for the test.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the specified host listens to.

Parameter	Description
IsFarmServer	By default, this flag is set to Yes , indicating that the monitored server is the <i>farm</i> server of a controller farm. For a farm server, this test will report metrics at the farm-level - accordingly, this test will report the status of site services active on each controller in the farm. On the other hand, if the monitored controller is only a <i>member</i> of a farm and not the <i>farm</i> server, then set this flag to No . In this case, the test will report the status of only those site services that are active on the monitored controller and not the farm.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation						
Controller service state	Indicates the current state of this site service.		<p>If the site service is up and running, then this measure reports the value <i>Running</i>. On the other hand, if the service stops, then this measure will report the value <i>Not Running</i>.</p> <p>The numeric values that correspond to the above-mentioned states are as follows:</p> <table border="1"> <thead> <tr> <th>State</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Running</td><td>1</td></tr> <tr> <td>NotRunning</td><td>0</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned states while indicating the state of the site service. However, the graph of this measure will be represented using the corresponding numeric equivalents of the states – i.e., 1 and 0.</p>	State	Numeric Value	Running	1	NotRunning	0
State	Numeric Value								
Running	1								
NotRunning	0								

6.2.8 Citrix Broker Service Test

The Citrix Broker Service brokers connections from endpoint devices to desktops and applications. By closely monitoring how this service interacts with the broker's MS SQL database, you can be

forewarned of potential delays in servicing user requests for desktops.

This test periodically monitors the load on the Citrix Broker Service, the connectivity between the service and the database, and the health of transactions performed by the service on the database, so that you can receive real-time updates on the following:

- The sudden unavailability of connection to the database;
- A service overload;
- Failure of transactions to the database;
- Delays in the completion of transactions on the database

Target of the test : A Citrix Delivery Controller 5.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for the Delivery Controller being monitored.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the DDC listens to.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Brokered sessions	Indicates the number of virtual desktop sessions that are brokered by the Citrix Broker Service.	Number	This is a good indicator of the load handled by the service.
Database average transaction time	Indicates the average time taken by the broker to execute a database transaction from the Citrix Broker Service.	Secs	Ideally, the value of this measure should be low. A high value indicates that the broker service is taking too much time to execute transactions on the database; this can cause significant delays in connection brokering.

Measurement	Description	Measurement Unit	Interpretation						
Is database connected?	Indicates whether the database is connected or not.		<p>This measure reports the value Yes if the database is connected and No if it is not. The numeric values that correspond to these measure values are as follows:</p> <table border="1"> <thead> <tr> <th>Measure Value</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Yes</td><td>1</td></tr> <tr> <td>No</td><td>0</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned Measure Values to indicate whether/not the Citrix Broker service is connected to the database. However, in the graph of this measure, the same will be represented using the numeric equivalents – 1 and 0 only.</p> <p>If the database is unavailable, the broker service may not be able to perform critical database transactions; this may adversely impact the user experience with the service and with the broker as a whole.</p>	Measure Value	Numeric Value	Yes	1	No	0
Measure Value	Numeric Value								
Yes	1								
No	0								
Database transaction errors	Indicates the rate at which the database transactions are failing while the Citrix Broker Service is executing the transactions.	Trans/Sec	A low value is typically desired for this measure.						
Database transactions	Indicates the rate at which the database transactions are executed by the Citrix Broker Service.	Trans/Sec							

Measurement	Description	Measurement Unit	Interpretation
Deregistration requests	Indicates the number of de-registration requests received by the Citrix Broker Service from the virtual desktops.	Number/req	
Expired launches	Indicates the rate at which virtual desktops are timed out while waiting to be connected to the clients, as detected by the Citrix Broker Service.	Launches/Sec	
Expired registrations	Indicates the number of virtual desktop registrations that have expired.	Number	
Expired registrations per sec	Indicates the rate at which virtual desktop registrations with Citrix Broker Service expire, through inactive communication.	Registrations/Sec	
Hard registrations	Indicates the rate at which the virtual desktop agents are hard-registered i.e., forcefully registered with the Citrix Broker Service.	Registrations/Sec	
Registration average request time	Indicates the average time taken to process a virtual desktop registration request in Citrix Broker Service.	Secs	If the value of this measure increases consistently, it denotes that the registration process is bottlenecked. If the situation is allowed to persist, it can seriously hamper user experience with the desktop service.
Registration rejects	Indicates the rate at which the Citrix Broker Service rejects registration requests from virtual desktops.	Rejects/Sec	

Measurement	Description	Measurement Unit	Interpretation
Registration requests	Indicates the number of registration requests received by the Citrix Broker Service from the virtual desktops.	Number	
Registration requests per sec	Indicates the rate at which the Citrix Broker Service receives registration requests from the virtual desktops.	Requests/Sec	
Soft registrations	Indicates the rate at which virtual desktop agents are soft-registered i.e., registered during installation with the Citrix Broker Service.	Registrations/Sec	
Icon cache writes	Indicates the number of icons cached for connection leasing by the Citrix Broker Service.	Number	<p>For best performance, user connections to regularly used icons should be in the cache. However, if the cache does not have adequate space, then very few user connections will be cached - sometimes, many of the regular connections themselves may not be in the cache. In such a situation, if the database becomes unavailable, many application/desktop launches will fail owing to the absence of cached connections.</p> <p>Therefore, to ensure that the value of this measure remain high - i.e., to ensure that sufficient user connections to icons are present in the cache - you need to make sure that the cache is adequately sized.</p>
Lease sync skipped	Indicates number of lease cache synchronization	Number	The leases generated on each Controller are uploaded to the Site

Measurement	Description	Measurement Unit	Interpretation
	cycles that were skipped as a result of the previous cycle not completing on time.		database for periodic synchronization to other Controllers on the Site. If a non-zero value is reported by this measure, it means that one/more synchronizations have been missed. This in turn implies that outdated lease information is at the disposal of the other controllers on the site. This in turn can cause inconsistencies in connection leasing behavior across the site.
Lease uploads	Indicates the number of leases uploaded and synchronized across the site for connection leasing by the Citrix Broker Service.	Number	Ideally, the value of this measure should be high.
Lease writes	Indicates the number of leases cached for connection leasing by the Citrix Broker Service.	Number	

6.2.9 Citrix Configuration Service Test

The Citrix Configuration Service stores the configuration information related to Citrix services in the broker's MS SQL database. With the help of this test, you can quickly and accurately isolate slowdowns (if any) that the Citrix Configuration Service experiences while communicating with the database.

Target of the test : A Citrix Delivery Controller 5.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for the Delivery Controller being monitored.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the DDC listens to.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation						
Database average transaction time	Indicates the average time taken by the broker to execute a database transaction from the Citrix Configuration Service.	Secs	<p>Ideally, the value of this measure should be low. A high value indicates that the Citrix Configuration Service is taking too much time to execute transactions on the database; this can cause significant delays while storing/retrieving configuration information pertaining to Citrix services.</p>						
Is database connected?	Indicates whether the Citrix Configuration Service is able to connect to the database or not.		<p>This measure reports the value Yes if the database is connected and No if it is not. The numeric values that correspond to these measure values are as follows:</p> <table border="1"> <thead> <tr> <th>Measure Value</th> <th>Numeric Value</th> </tr> </thead> <tbody> <tr> <td>Yes</td> <td>1</td> </tr> <tr> <td>No</td> <td>0</td> </tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned Measure Values to indicate whether/not the Citrix Configuration service is connected to the database. However, in the graph of this measure, the same will be represented using the numeric</p>	Measure Value	Numeric Value	Yes	1	No	0
Measure Value	Numeric Value								
Yes	1								
No	0								

Measurement	Description	Measurement Unit	Interpretation
			equivalents – 1 and 0 only. If the database is unavailable, the Citrix Configuration Service may not be able to store the configuration of critical Citrix services in the database.
Database transaction errors	Indicates the rate at which the database transactions are failing while the Citrix Configuration Service is executing the transactions.	Errors/Sec	A low value is typically desired for this measure.
Database transactions	Indicates the rate at which the database transactions are executed by the Citrix Configuration Service.	Trans/Sec	

6.2.10 Citrix Host Service Test

The Citrix Host Service manages host and hypervisor connections. This test tracks the transactions executed by the Citrix Host Service on the broker's MS SQL database server, and reports errors/delays (if any) in the transactions.

Target of the test : A Citrix Delivery Controller 5.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for the Delivery Controller being monitored.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the DDC listens to.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation						
Database average transaction time	Indicates the average time taken by the broker to execute a database transaction from the Citrix Host Service.	Secs	<p>Ideally, the value of this measure should be low. A high value indicates that the Citrix Host Service is taking too much time to execute transactions on the database.</p>						
Is database connected?	Indicates whether the Citrix Host Service is able to connect to the database or not.		<p>This measure reports the value Yes if the database is connected and No if it is not. The numeric values that correspond to these measure values are as follows:</p> <table border="1"> <thead> <tr> <th>Measure Value</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Yes</td><td>1</td></tr> <tr> <td>No</td><td>0</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned Measure Values to indicate whether/not the Citrix Host service is connected to the database. However, in the graph of this measure, the same will be represented using the numeric equivalents – 1 and 0 only.</p> <p>If the database is unavailable, the Citrix Host Service may not be able to perform some of its critical functions, thereby affecting the overall health of the broker.</p>	Measure Value	Numeric Value	Yes	1	No	0
Measure Value	Numeric Value								
Yes	1								
No	0								
Database transaction errors	Indicates the rate at which the database transactions are failing while the Citrix Host Service is executing the transactions.	Errors/Sec	A low value is typically desired for this measure.						
Database	Database transactions:	Trans/Sec							

Measurement	Description	Measurement Unit	Interpretation
transaction errors	Indicates the rate at which the database transactions are executed by the Citrix Host Service.		

6.2.11 Citrix AD Identity Service Test

The Citrix AD Identity Service manages active directory computer accounts. Once the broker validates a user login, this service connects to the broker's database to identify the virtual desktop that is assigned to the user who has logged in. If the service experiences any connectivity issues with the database during this time, or if the database responds slowly to the requests from the service, the broker will not be able to launch the desktop for the user on time; this can scar the user experience with the broker. With the help of this test, you can keep an eye on the service-database interactions, and promptly detect and resolve connectivity issues, before users complain.

Target of the test : A Citrix Delivery Controller 5.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for the Delivery Controller being monitored.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the DDC listens to.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Database average transaction time	Indicates the average time taken by the broker to execute a database transaction from the Citrix AD Identity Service.	Secs	Ideally, the value of this measure should be low. A high value indicates that the Citrix AD Identity Service is taking too much time to execute transactions on the database; this can

Measurement	Description	Measurement Unit	Interpretation						
			cause significant delays for users in accessing their desktops.						
Is database connected	Indicates whether the Citrix AD Identity Service is able to connect to the database or not.		<p>This measure reports the value Yes if the database is connected and No if it is not. The numeric values that correspond to these measure values are as follows:</p> <table border="1"> <thead> <tr> <th>Measure Value</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Yes</td><td>1</td></tr> <tr> <td>No</td><td>0</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned Measure Values to indicate whether/not the Citrix AD Identity service is connected to the database. However, in the graph of this measure, the same will be represented using the numeric equivalents – 1 and 0 only.</p> <p>If the database is unavailable, the Citrix AD Identity Service may not be able to identify the desktop that has been assigned to a logged in user; in such a case, the broker will not be able to provision desktops for users.</p>	Measure Value	Numeric Value	Yes	1	No	0
Measure Value	Numeric Value								
Yes	1								
No	0								
Database transaction errors	Indicates the rate at which the database transactions are failing while the Citrix AD Identity Service is executing the transactions.	Errors/Sec	A low value is typically desired for this measure.						
Database transactions	Indicates the rate at which the database transactions are executed by the Citrix AD Identity Service.	Trans/Sec							

6.2.12 Citrix Machine Creation Service Test

The Citrix Machine Creation Service creates new virtual machines.

Once a valid user logs into the XenDesktop Controller via the Web Interface, the XenDesktop Controller manages the desktop groups by building, starting, and shutting down the desktops as required. At this juncture, the XenDesktop Controller relies on Machine Creation Services (MCS) to deliver the appropriate desktop image to the Pooled and Dedicated desktop groups.

MCS does not require additional servers; it utilizes integrated functionality built into Citrix XenServer, Microsoft Hyper-V and VMware vSphere. As MCS utilizes hypervisor functionality, it is only a viable option for desktops virtualized on a hypervisor. A master desktop image is created and maintained within the hypervisor pool. The XenDesktop Controller, via MCS, instructs the hypervisor to create a snapshot of the base image and thin provision new virtual machines through the built-in hypervisor functions. MCS utilizes special functionality within the XenDesktop Controller and XenDesktop Agent (installed within the virtual desktop image) to build unique identities for each virtual machine, which is stored within the virtual desktops identity disk. This functionality allows each virtual desktop to be unique even though it is using the same base image.

Using this test, you can monitor the health of transactions performed by the MCS on the broker's SQL database.

Target of the test : A Citrix Delivery Controller 5.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for the Delivery Controller being monitored.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the DDC listens to.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation						
Database average transaction time	Indicates the average time taken by the broker to execute a database transaction from the Citrix MCS.	Secs	<p>Ideally, the value of this measure should be low. A high value indicates that the Citrix MCS is taking too much time to execute transactions on the database; this can cause significant delays for users in accessing their desktops.</p>						
Is database connected?	Indicates whether the Citrix MCS is able to connect to the database or not.		<p>This measure reports the value Yes if the database is connected and No if it is not. The numeric values that correspond to these measure values are as follows:</p> <table border="1"> <tr> <th>Measure Value</th><th>Numeric Value</th></tr> <tr> <td>Yes</td><td>1</td></tr> <tr> <td>No</td><td>0</td></tr> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned Measure Values to indicate whether/not the Citrix Machine Creation service is connected to the database. However, in the graph of this measure, the same will be represented using the numeric equivalents – 1 and 0 only.</p> <p>If the database is unavailable, the Citrix MCS may not be able to perform one/more critical operations; this can cause a significant dip in the service-levels desired from the broker.</p>	Measure Value	Numeric Value	Yes	1	No	0
Measure Value	Numeric Value								
Yes	1								
No	0								
Database transaction errors	Indicates the rate at which the database transactions are failing while the Citrix MCS is executing the	Errors/Sec	A low value is typically desired for this measure.						

Measurement	Description	Measurement Unit	Interpretation
	transactions.		
Database transactions	Indicates the rate at which the database transactions are executed by the Citrix MCS.	Trans/Sec	

6.2.13 Citrix Machine Identity Service Test

The Citrix Machine Identity Service manages the storage of virtual machines. This test monitors the health of the transactions performed by this service on the broker's SQL database, and reveals the following:

- Whether the service is able to connect to the database or not;
- The load imposed by the service on the database;
- The speed and efficiency with which the database is able to handle the transaction load

Target of the test : A Citrix Delivery Controller 5.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for the Delivery Controller being monitored.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the DDC listens to.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Database average transaction time	Indicates the average time taken by the broker to execute a database transaction from the Citrix	Secs	Ideally, the value of this measure should be low. A high value indicates that the Citrix Machine Identity service is taking too much time to execute

Measurement	Description	Measurement Unit	Interpretation						
	Machine Identity service.		transactions on the database; this can cause significant delays for users in accessing their desktops.						
Is database connected?	Indicates whether the Citrix Machine Identity service is able to connect to the database or not.		<p>This measure reports the value <i>Yes</i> if the database is connected and <i>No</i> if it is not. The numeric values that correspond to these measure values are as follows:</p> <table border="1"> <thead> <tr> <th>Measure Value</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Yes</td><td>1</td></tr> <tr> <td>No</td><td>0</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned Measure Values to indicate whether/not the Citrix Machine Identity service is connected to the database. However, in the graph of this measure, the same will be represented using the numeric equivalents – 1 and 0 only.</p> <p>If the database is unavailable, the Citrix Machine Identity service may not be able to perform one/more critical operations; this can cause a significant dip in the service-levels desired from the broker.</p>	Measure Value	Numeric Value	Yes	1	No	0
Measure Value	Numeric Value								
Yes	1								
No	0								
Database transaction errors	Indicates the rate at which the database transactions are failing while the Citrix Machine Identity service is executing the transactions.	Errors/Sec	A low value is typically desired for this measure.						
Database transactions	Indicates the rate at which the database transactions	Trans/Sec							

Measurement	Description	Measurement Unit	Interpretation
	are executed by the Citrix Machine Identity service.		

6.2.14 Citrix XML Services Test

The Citrix XML service is responsible for communications between the Web Interface component and the XenDesktop site. The XML Service authenticates users, provides a list of available virtual desktops, and generates the information to allow the end-point to make a connection to the virtual desktop. To understand the load handled by the XML service, proactively determine probable delays in the delivery of the XML service, and to isolate the exact XML transaction that is causing the slowdown, you can use this test.

Target of the test : A Citrix Delivery Controller 5.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for each XML transaction performed by the XML service.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the specified host listens to.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Average transaction time	Indicates the time taken by this XML transaction to complete.	Secs	Ideally, the value of this measure should be low. A high value indicates that a particular XML transaction is taking too much time for execution; this can adversely impact the user experience with the broker.
Concurrent transactions	Indicates the number of concurrent transactions	Number	These measures are good indicators of the processing ability of the XML

Measurement	Description	Measurement Unit	Interpretation
	being processed.		service.
Transactions	Indicates the rate at which this transaction was processed by the XML service.	Trans/Sec	

6.2.15 XenDesktop Alerts Test

This test monitors the log files of the Delivery Controller to capture errors/warnings of configured patterns.

This test is disabled by default. To enable the test, go to the **ENABLE / DISABLE TESTS** page using the menu sequence : Agents -> Tests -> Enable/Disable, pick the *Delivery Controller 5* as the **Component type**, set *Performance* as the **Test type**, choose this test from the disabled tests list, and click on the **>>** button to move the test to the **ENABLED TESTS** list. Finally, click the **Update** button.

Target of the test : A Citrix Delivery Controller 5.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for every *alertfile and searchpattern combination*.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	The port at which the server listens.
AlertFile	<p>Specify the path to the alert log file to be monitored. For eg., <i>C:/cds/controller.log</i>. Multiple log file paths can be provided as a comma-separated list - eg., <i>c:/cds/pool.log,C:/cds/controller.log</i>.</p> <p>Also, instead of a specific log file path, the path to the directory containing log files can be provided - eg., <i>c:/cds</i>. This ensures that eG monitors the most recent log files in the specified directory. Specific log file name patterns can also be specified. For example, to monitor the latest log files with names containing the string 'pool', the parameter</p>

Parameter	Description
	<p>specification can be, <code>c:/cds/*pool/*</code>. Here, '*' indicates leading/trailing characters (as the case may be). In this case, the eG agent first enumerates all the log files in the specified path that match the given pattern, and then picks only the latest log file from the result set for monitoring.</p> <p>You can also configure the path in the following format: <code>Name@filepath</code>. Here, <code>Name</code> represents the display name of the path being configured. Accordingly, the parameter specification for the 'pool' example discussed above can be: <code>pool@/tmp/db/*pool*</code>. In this case, the display name <code>pool</code> will alone be displayed as the descriptor of this test.</p> <p>Every time this test is executed, the eG agent verifies the following:</p> <ul style="list-style-type: none"> • Whether any changes have occurred in the size and/or timestamp of the log files that were monitoring during the last measurement period; • Whether any new log files (that match the AlertFile specification) have been newly added since the last measurement period; <p>If a few lines have been added to a log file that was monitored previously, then the eG agent monitors the additions to that log file, and then proceeds to monitor newer log files (if any). If an older log file has been overwritten, then, the eG agent monitors this log file completely, and then proceeds to monitor the newer log files (if any).</p>
SearchPattern	<p>Enter the specific patterns of alerts to be monitored. The pattern should be in the following format: <code><PatternName>:<Pattern></code>, where <code><PatternName></code> is the pattern name that will be displayed in the monitor interface and <code><Pattern></code> is an expression of the form - <code>*expr*</code> or <code>expr</code> or <code>*expr or expr*</code>, etc. A leading '*' signifies any number of leading characters, while a trailing '*' signifies any number of trailing characters.</p> <p>For example, say you specify <code>XenFactory:*XenFactory*</code>, in the SearchPattern text box. This indicates that "XenFactory" is the pattern name to be displayed in the monitor interface. <code>"*XenFactory*"</code> indicates that the test will monitor only those lines in the log which contain the term "XenFactory".</p> <p>A single pattern may also be of the form <code>e1+e2</code>, where <code>+</code> signifies an OR condition. That is, the <code><PatternName></code> is matched if either <code>e1</code> is true or <code>e2</code> is true.</p> <p>Multiple search patterns can be specified as a comma-separated list. For example: <code>XenFactory:*XenFactory*,LicenseRetry:*LicenseRetryThreadBody*</code></p> <p>If the AlertFile specification is of the format <code>Name@filepath</code>, then the descriptor for this test in the eG monitor interface will be of the format: <code>Name:PatternName</code>. On the other hand, if the AlertFile specification consists only of a comma-separated list of log file paths, then the descriptors will be of the format: <code>LogFilePath:PatternName</code>.</p>

Parameter	Description
	If you want all the messages in a log file to be monitored, then your specification would be: <PatternName>:*
Lines	Specify two numbers in the format x:y. This means that when a line in the alert file matches a particular pattern, then x lines before the matched line and y lines after the matched line will be reported in the detail diagnosis output (in addition to the matched line). The default value here is 0:0. Multiple entries can be provided as a comma-separated list.
	If you give 1:1 as the value for Lines, then this value will be applied to all the patterns specified in the SearchPattern field. If you give 0:0,1:1 as the value for Lines and if the corresponding value in the SearchPattern text box is like
	<i>XenFactory:*XenFactory*,LicenseRetry:*LicenseRetryThreadBody*</i> :
	0:0 will be applied to <i>XenFactory:*XenFactory*</i> pattern
	1:1 will be applied to <i>LicenseRetry:*LicenseRetryThreadBody*</i> pattern
ExcludePattern	Provide a comma-separated list of patterns to be excluded from monitoring in the ExcludePattern text box. For example *critical*, *exception*. By default, this parameter is set to 'none'.
UniqueMatch	By default, the UniqueMatch parameter is set to False , indicating that, by default, the test checks every line in the log file for the existence of each of the configured SearchPatterns. By setting this parameter to True , you can instruct the test to ignore a line and move to the next as soon as a match for one of the configured patterns is found in that line. For example, assume that <i>Pattern1:*fatal*,Pattern2:*error*</i> is the Searchpattern that has been configured. If UniqueMatch is set to False , then the test will read every line in the log file completely to check for the existence of messages embedding the strings 'fatal' and 'error'. If both the patterns are detected in the same line, then the number of matches will be incremented by 2. On the other hand, if UniqueMatch is set to True , then the test will read a line only until a match for one of the configured patterns is found and not both. This means that even if the strings 'fatal' and 'error' follow one another in the same line, the test will consider only the first match and not the next. The match count in this case will therefore be incremented by only 1.
RotatingFile	This flag governs the display of descriptors for this test in the eG monitoring console.
	If this flag is set to True and the AlertFile text box contains the full path to a specific (log/text) file, then, the descriptors of this test will be displayed in the following format: <i>Directory_containing_monitored_file:<SearchPattern></i> . For instance, if the AlertFile parameter is set to <i>c:\eGurkha\logs\syslog.txt</i> , and RotatingFile is set to True , then, your descriptor will be of the following format: <i>c:\eGurkha\logs:<SearchPattern></i> . On the other hand, if the RotatingFile flag had

Parameter	Description
	<p>been set to False, then the descriptors will be of the following format: <i><FileName>:<SearchPattern></i> - i.e., <i>syslog.txt:<SearchPattern></i> in the case of the example above.</p>
	<p>If this flag is set to True and the AlertFile parameter is set to the directory containing log files, then, the descriptors of this test will be displayed in the format: <i>Configured_directory_path:<SearchPattern></i>. For instance, if the AlertFile parameter is set to <i>c:\eGurkha\logs</i>, and RotatingFile is set to True, then, your descriptor will be: <i>c:\eGurkha\logs:<SearchPattern></i>. On the other hand, if the RotatingFile parameter had been set to False, then the descriptors will be of the following format: <i>Configured_directory:<SearchPattern></i> - i.e., <i>logs:<SearchPattern></i> in the case of the example above.</p>
	<p>If this flag is set to True and the AlertFile parameter is set to a specific file pattern, then, the descriptors of this test will be of the following format: <i><FilePattern>:<SearchPattern></i>. For instance, if the AlertFile parameter is set to <i>c:\eGurkha\logs*sys*</i>, and RotatingFile is set to True, then, your descriptor will be: <i>*sys*<SearchPattern></i>. In this case, the descriptor format will not change even if the RotatingFile flag status is changed.</p>
DD Frequency	<p>Refers to the frequency with which detailed diagnosis measures are to be generated for this test. The default is <i>1:1</i>. This indicates that, by default, detailed measures will be generated every time this test runs, and also every time the test detects a problem. You can modify this frequency, if you so desire. Also, if you intend to disable the detailed diagnosis capability for this test, you can do so by specifying <i>none</i> against DD Frequency.</p>
Detailed Diagnosis	<p>To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Recent errors	Indicates the number of errors that were added to the alert log when the test was last executed.	Number	The value of this measure is a clear indicator of the number of “new” alerts that have come into the alert log of the monitored Delivery Controller. The detailed diagnosis of this measure, if enabled, provides the detailed descriptions of the errors of the configured patterns.

6.3 The Desktop Sites Layer

The tests mapped to this layer monitor the following:

- The status of physical/virtual desktops managed by the current site
- The availability and usage of desktops in each catalog managed by the current site
- The availability and responsiveness of the license server in the site;
- The status of critical services executing on the controller;

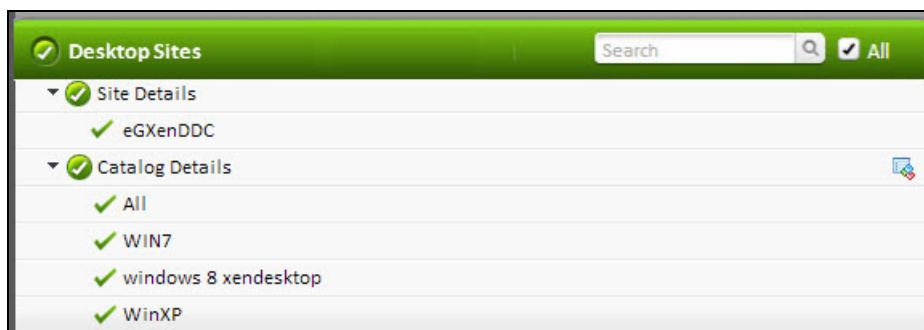


Figure 6.7: The tests mapped to the Desktop Site layer

6.3.1 Brokering Machines Test

A broker site is a top-level, logical representation of the XenDesktop site, from the perspective of the brokering services running within the site. It defines various site-wide default attributes used by the brokering services. A XenDesktop installation has only a single broker site instance.

This test reports the current powered-on state and registration state of each virtual/physical desktop that is managed by the current broker site.

This test is disabled by default. To enable the test, go to the **ENABLE / DISABLE TESTS** page using the menu sequence : Agents -> Tests -> Enable/Disable, pick the *Citrix Delivery Controller 5.x* as the **Component type**, set *Performance* as the **Test type**, choose this test from the **DISABLED TESTS** list, and click on the >> button to move the test to the **ENABLED TESTS** list. Finally, click the **Update** button.

Target of the test : A Citrix Delivery Controller 5.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for each desktop or each *catalog:desktop* pair (as the case may be) in the current broker site.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the DDC listens to.
Report by Catalog	By default, the Report by Catalog flag is set to Yes , indicating that this test reports a set of measures for every <i>catalog name: desktop name</i> combination, by default. To ensure that this test reports the <i>desktop name</i> alone, set this flag to No .
Detailed Diagnosis	<p>To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation																						
Power state	Indicates the current operational state of this desktop.		<p>This measure reports the following values to indicate the operational state of a desktop.</p> <ul style="list-style-type: none"> • On • TurningOn • Resuming • Suspending • Suspended • Off • TurningOff • Unmanaged • Unavailable • Unknown <p>The numeric values that correspond to the above-mentioned states are as follows:</p> <table border="1"> <thead> <tr> <th>State</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>On</td><td>1</td></tr> <tr> <td>TurningOn</td><td>2</td></tr> <tr> <td>Resuming</td><td>3</td></tr> <tr> <td>Suspending</td><td>4</td></tr> <tr> <td>Suspended</td><td>5</td></tr> <tr> <td>Off</td><td>6</td></tr> <tr> <td>TurningOff</td><td>7</td></tr> <tr> <td>Unmanaged</td><td>8</td></tr> <tr> <td>Unavailable</td><td>9</td></tr> <tr> <td>Unknown</td><td>10</td></tr> </tbody> </table>	State	Numeric Value	On	1	TurningOn	2	Resuming	3	Suspending	4	Suspended	5	Off	6	TurningOff	7	Unmanaged	8	Unavailable	9	Unknown	10
State	Numeric Value																								
On	1																								
TurningOn	2																								
Resuming	3																								
Suspending	4																								
Suspended	5																								
Off	6																								
TurningOff	7																								
Unmanaged	8																								
Unavailable	9																								
Unknown	10																								

Measurement	Description	Measurement Unit	Interpretation
			<p>Note:</p> <p>By default, this measure reports one of the above-mentioned States to indicate the operational state of a desktop. However, the graph of this measure will represent the states using their corresponding numeric equivalents – i.e., 1 to 10.</p> <p>Using the detailed diagnosis this measure, you can easily determine the catalog to which the desktop belongs, the DNS with which it interacts, the hosting server on which the desktop operates, the hypervisor connection name, and the last hosting update time.</p>
Registration state	Indicates whether this desktop is registered with the broker or not.		<p>This measure reports the following states to indicate the registration state of the desktop.</p> <ul style="list-style-type: none"> • Registered • Unregistered • AgentError <p>A virtual desktop is said to be in an Unregistered state if the Virtual Desktop Agent is executing smoothly on the desktop, but fails to register with the controller, owing to one/more of the following desktop-related issues:</p> <ul style="list-style-type: none"> • The virtual desktop may not be added to the correct site; • The virtual desktop firewall is not properly configured;

Measurement	Description	Measurement Unit	Interpretation								
			<ul style="list-style-type: none"> • The DNS is not properly configured; • The time synchronization between the virtual desktop and the controller is not properly configured; • Domain membership problems – a virtual desktop may appear to be a part of a particular domain, but in reality, may be part of another domain; • The usage of multiple network adapters by a virtual desktop may cause the security negotiation between the desktop and controller to fail; • Issues with the virtual desktop's Service Principal Name (SPN) <p>An AgentError is reported if the Virtual Desktop Agent itself is experiencing issues in its operations.</p> <p>The numeric values that correspond to the above-mentioned states are as follows:</p> <table border="1"> <thead> <tr> <th>State</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Registered</td><td>1</td></tr> <tr> <td>Unregistered</td><td>2</td></tr> <tr> <td>AgentError</td><td>3</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned States while indicating the registration state of the virtual</p>	State	Numeric Value	Registered	1	Unregistered	2	AgentError	3
State	Numeric Value										
Registered	1										
Unregistered	2										
AgentError	3										

Measurement	Description	Measurement Unit	Interpretation
			desktop with the desktop broker. However, the graph of this measure will represent the states using their corresponding numeric equivalents – i.e., 1 to 3.

Using the detailed diagnosis of the *Power state* measure, you can easily determine the catalog to which the desktop belongs, the DNS with which it interacts, the hosting server on which the desktop operates, the hypervisor connection name, and the last hosting update time.

Time	Catalog Name	DNS Name	Hosted Machine Name	Hypervisor Connection Name	Last Hosting Update Time
Feb 02, 2011 12:13:33	hypxp1	hypxp64bit.Mas.eGinnovations.com	-	-	-

Figure 6.8: The detailed diagnosis of the Power state measure reported by the Brokering Machines Test

6.3.2 Catalog Details Test

In XenDesktop, collections of virtual machines (VMs) or physical computers of the same type are managed as a single entity called a catalog. To deliver desktops to users, the machine administrator creates a catalog of machines and the assignment administrator allocates machines from the catalog to users by creating desktop groups.

This test auto-discovers the catalogs managed by the XenDesktop site being monitored, and reports useful statistics related to each catalog, which reveal:

- The catalog type;
- The type of desktops allocated to each catalog;
- The availability, usage, and assignment of desktops in each catalog

Target of the test : A Citrix Delivery Controller 5.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for each catalog managed by the target XenDesktop site.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the DDC listens to.
Detailed Diagnosis	<p>To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation						
Allocation type	Indicates the allocation type of the virtual desktops available in this catalog.		<p>This measure can report one of the following values:</p> <ul style="list-style-type: none"> • Permanent • Random <p>The table below provides the numeric values that correspond to the allocation types listed above, and a brief description of each type:</p> <table border="1"> <thead> <tr> <th>Allocation Type</th> <th>Numeric Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Permanent</td> <td>1</td> <td>Indicates that</td> </tr> </tbody> </table>	Allocation Type	Numeric Value	Description	Permanent	1	Indicates that
Allocation Type	Numeric Value	Description							
Permanent	1	Indicates that							

Measurement	Description	Measurement Unit	Interpretation		
			Allocation Type	Numeric Value	Description
					the virtual desktops in this catalog are permanently assigned to the user.
			Random	2	Indicates that the virtual desktops in this catalog are picked in random and are temporarily assigned to the user.
			<p>Note:</p> <p>By default, this measure reports the Allocation Types listed in the table above. However, the graph of this measure will represent the allocation types using their corresponding numeric equivalents – i.e., 1 and 2.</p>		
Total machines	Indicates the number of virtual desktops in this catalog.	Number			
Machines assigned to users	Indicates the number of virtual desktops in this catalog that are currently assigned to users.	Number			
Machines assigned to users not in any desktop groups	Indicates the number of virtual desktops in this catalog, which are not part of any desktop group, but are assigned to users.	Number			
Machines not in any desktop group	Indicates the number of virtual desktops in this	Number			

Measurement	Description	Measurement Unit	Interpretation				
	catalog, which are not part of any desktop group.						
Machines not assigned to users not in any desktop groups	Indicates the number of unassigned virtual desktops in this catalog that are not part of any desktop group.	Number					
Machines not assigned to users	Indicates the number of virtual desktops in this catalog that are not assigned to any users.	Number					
Machines used in desktop groups	Indicates the number of virtual desktops in this catalog that are within desktop groups.	Number					
Catalog kind	Indicates the type of catalog.		<p>This measure reports one of the following values:</p> <ul style="list-style-type: none"> • ThinCloned • SingleImage • PowerManaged • Unmanaged • PVS • Unknown <p>The table below provides the description for each of the aforesaid catalog types:</p> <table border="1"> <thead> <tr> <th>Catalog Type</th><th>Description</th></tr> </thead> <tbody> <tr> <td>ThinCloned</td><td>This type of</td></tr> </tbody> </table>	Catalog Type	Description	ThinCloned	This type of
Catalog Type	Description						
ThinCloned	This type of						

Measurement	Description	Measurement Unit	Interpretation						
			<table border="1"> <thead> <tr> <th>Catalog Type</th><th>Description</th></tr> </thead> <tbody> <tr> <td></td><td>catalog is for the virtual desktops that are created and managed through Citrix Provisioning Service (PVS). These virtual desktops when managed, are associated with a hypervisor connection. This catalog type implies that the original golden VM image in the PVS gets cloned when the virtual desktops are assigned to the users and the data stored in the virtual desktops by the users is retained even after the restart of the virtual desktops.</td></tr> <tr> <td>SingleImage</td><td>This type of</td></tr> </tbody> </table>	Catalog Type	Description		catalog is for the virtual desktops that are created and managed through Citrix Provisioning Service (PVS). These virtual desktops when managed, are associated with a hypervisor connection. This catalog type implies that the original golden VM image in the PVS gets cloned when the virtual desktops are assigned to the users and the data stored in the virtual desktops by the users is retained even after the restart of the virtual desktops.	SingleImage	This type of
Catalog Type	Description								
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SingleImage	This type of								

Measurement	Description	Measurement Unit	Interpretation						
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Catalog Type	Description								
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PowerManaged	This type of catalog indicates that the managed								

Measurement	Description	Measurement Unit	Interpretation								
			<table border="1"> <thead> <tr> <th>Catalog Type</th><th>Description</th></tr> </thead> <tbody> <tr> <td></td><td>virtual desktops are manually provisioned by the administrators. These virtual desktops when managed, are associated with a hypervisor connection.</td></tr> <tr> <td>Unmanaged</td><td>This catalog type indicates that the virtual desktops are not managed and hence, there is no need for a hypervisor connection.</td></tr> <tr> <td>PVS</td><td>This catalog type is for the managed virtual desktops that are provisioned using the existing PVS product. These virtual desktops when managed, are associated with a hypervisor connection. Only shared</td></tr> </tbody> </table>	Catalog Type	Description		virtual desktops are manually provisioned by the administrators. These virtual desktops when managed, are associated with a hypervisor connection.	Unmanaged	This catalog type indicates that the virtual desktops are not managed and hence, there is no need for a hypervisor connection.	PVS	This catalog type is for the managed virtual desktops that are provisioned using the existing PVS product. These virtual desktops when managed, are associated with a hypervisor connection. Only shared
Catalog Type	Description										
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Measurement	Description	Measurement Unit	Interpretation														
			<table border="1"> <thead> <tr> <th>Catalog Type</th><th>Description</th></tr> </thead> <tbody> <tr> <td></td><td>virtual desktops are suitable for this catalog type.</td></tr> <tr> <td>Unknown</td><td>Indicates that the type of the catalog for the virtual desktops is unknown.</td></tr> </tbody> </table>	Catalog Type	Description		virtual desktops are suitable for this catalog type.	Unknown	Indicates that the type of the catalog for the virtual desktops is unknown.								
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State	Numeric Value																
ThinCloned	1																
SingleImage	2																
PowerManaged	3																
Unmanaged	4																
PVS	5																
Unknown	0																
Physical machines included in catalog	Indicates whether or not this catalog contains any physical desktops.		<p>Note:</p> <p>By default, this measure reports the above-mentioned Catalog Types. However, the graph of this measure will represent the types using the numeric equivalents mentioned in the table above – i.e., 0 to 5.</p> <p>This measure is relevant only if the Catalog kind measure reports the value PVS – i.e., only if the type of catalog is PVS.</p> <p>This measure reports the values Yes or No to indicate whether or not a catalog</p>														

Measurement	Description	Measurement Unit	Interpretation						
			<p>contains any physical desktops.</p> <p>The numeric values that correspond to the Yes/No states are as follows:</p> <table border="1"> <thead> <tr> <th>State</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Yes</td><td>1</td></tr> <tr> <td>No</td><td>0</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned states while indicating whether the catalog contains any physical desktops. However, the graph of this measure will represent States using the corresponding numeric equivalents – i.e., 1 and 0 only.</p> <p>The detailed diagnosis of this measure reveals the IP address and domain name of the server that provisioned the physical desktops. The eG agent will collect the detailed measures only if the catalog contains physical desktops - i.e., only if this measure returns the value Yes.</p>	State	Numeric Value	Yes	1	No	0
State	Numeric Value								
Yes	1								
No	0								

6.3.3 Site Details Test

A broker site is a top-level, logical representation of the XenDesktop site, from the perspective of the brokering services running within the site. It defines various site-wide default attributes used by the brokering services. A XenDesktop installation has only a single broker site instance.

This test promptly alerts administrators to the following anomalies related to the monitored site:

- The sudden non-availability of the license server in the site;
- Poor responsiveness of the license server;
- Failure of the Citrix Broker service, Citrix Machine Creation service, and other critical services executing on the controller

Target of the test : A Citrix Delivery Controller 5.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for each catalog managed by the target XenDesktop site.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the DDC for which this test is to be configured.
Port	Refers to the port at which the specified DDC listens to.
Detailed Diagnosis	<p>To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
License server availability	Indicates the availability of the license server in this site.	Percent	<p>If the license server is available, a value of 100 is shown and if the license server is not available, a value of 0 is shown.</p> <p>Since the license server is responsible for managing the licenses for all the components of XenDesktop, the non-availability of the license server, should have serious repercussions on the performance of the XenDesktop site. However, such adversities are averted by the 90-day grace period that</p>

Measurement	Description	Measurement Unit	Interpretation
			<p>XenDesktop embeds; this allows the system to function normally for 90 days if the license server becomes unavailable.</p> <p>Moreover, if this measure reports that the license server is unavailable, then you may instantly want to know which license server the XenDesktop is communicating with. At this juncture, you can use the detailed diagnosis of this measure (if enabled) to ascertain the name of the license server and the port at which it listens.</p>
Response time	Indicates the time taken by the broker to establish a connection with the license server.	Secs	Ideally, the response time should be low.
Status of Broker service on controller	Indicates the current state of the Citrix Broker service on the monitored controller.		<p>The Citrix Broker Service brokers connections from endpoint devices to desktops and applications. This service is critical to the continuous functioning of the Delivery Controller. If this service fails or reports errors, then users may not be able to access their desktops.</p> <p>This measure reports the following states while indicating the broker connection to the configured database.</p> <ul style="list-style-type: none"> • Ok • DBUnconfigured • DBRejectedConnection • InvalidDBCConfigured • DBNewerVersionThanService • DBOlderVersionThanService • DBVersionChangeInProgress

Measurement	Description	Measurement Unit	Interpretation								
			<ul style="list-style-type: none"> • PendingFailure • Failed • Unknown <p>The table below briefly describes each of the states listed above:</p> <div style="border: 1px solid black; padding: 10px; width: fit-content; margin-left: auto; margin-right: auto;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center; padding: 5px;">State</th> <th style="text-align: center; padding: 5px;">Description</th> </tr> </thead> <tbody> <tr> <td style="text-align: center; padding: 10px;">Ok</td> <td>Indicates that the broker is connected to a valid database and the service is running.</td> </tr> <tr> <td style="text-align: center; padding: 10px;">DBUnconfigured</td> <td>Indicates that the broker does not possess a configured database connection.</td> </tr> <tr> <td style="text-align: center; padding: 10px;">DBRejectedConnection</td> <td>Indicates that the database has rejected the login credentials from the Broker Service. This may be caused by bad login credentials, or due to the data-</td> </tr> </tbody> </table> </div>	State	Description	Ok	Indicates that the broker is connected to a valid database and the service is running.	DBUnconfigured	Indicates that the broker does not possess a configured database connection.	DBRejectedConnection	Indicates that the database has rejected the login credentials from the Broker Service. This may be caused by bad login credentials, or due to the data-
State	Description										
Ok	Indicates that the broker is connected to a valid database and the service is running.										
DBUnconfigured	Indicates that the broker does not possess a configured database connection.										
DBRejectedConnection	Indicates that the database has rejected the login credentials from the Broker Service. This may be caused by bad login credentials, or due to the data-										

Measurement	Description	Measurement Unit	Interpretation										
			<table border="1"> <thead> <tr> <th>State</th><th>Description</th></tr> </thead> <tbody> <tr> <td></td><td>base not being installed.</td></tr> <tr> <td>InvalidDBConfigured</td><td>Indicates that the database schema is missing i.e., the stored procedures are missing from the database.</td></tr> <tr> <td>DBNewerVersionThanService</td><td>Indicates that the version of the broker is older than the database versioSn. To access the database, upgrade the version of the broker.</td></tr> <tr> <td>DBOlder-VersionThanService</td><td>Indicates that the version of the database is older than the broker version. To access the database, upgrade the version of the database.</td></tr> </tbody> </table>	State	Description		base not being installed.	InvalidDBConfigured	Indicates that the database schema is missing i.e., the stored procedures are missing from the database.	DBNewerVersionThanService	Indicates that the version of the broker is older than the database versioSn. To access the database, upgrade the version of the broker.	DBOlder-VersionThanService	Indicates that the version of the database is older than the broker version. To access the database, upgrade the version of the database.
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Measurement	Description	Measurement Unit	Interpretation								
			<table border="1"> <thead> <tr> <th>State</th><th>Description</th></tr> </thead> <tbody> <tr> <td>DBVersionChangeInProgress</td><td>Indicates that the database schema upgrade is in progress.</td></tr> <tr> <td>PendingFailure</td><td>Indicates that the connectivity between the Broker Service and the database has been lost. This may be due to a transitory network error, but may indicate a loss of connectivity that requires administrator intervention.</td></tr> <tr> <td>Failed</td><td>Indicates that the connectivity between the broker and the database has been lost for an extended period of time, or</td></tr> </tbody> </table>	State	Description	DBVersionChangeInProgress	Indicates that the database schema upgrade is in progress.	PendingFailure	Indicates that the connectivity between the Broker Service and the database has been lost. This may be due to a transitory network error, but may indicate a loss of connectivity that requires administrator intervention.	Failed	Indicates that the connectivity between the broker and the database has been lost for an extended period of time, or
State	Description										
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PendingFailure	Indicates that the connectivity between the Broker Service and the database has been lost. This may be due to a transitory network error, but may indicate a loss of connectivity that requires administrator intervention.										
Failed	Indicates that the connectivity between the broker and the database has been lost for an extended period of time, or										

Measurement	Description	Measurement Unit	Interpretation						
			<table border="1"> <thead> <tr> <th>State</th><th>Description</th></tr> </thead> <tbody> <tr> <td></td><td>the connectivity has failed due to a configuration problem. The broker service cannot operate while its connection to the database is unavailable.</td></tr> <tr> <td>Unknown</td><td>Indicates that the status of the service cannot be determined.</td></tr> </tbody> </table>	State	Description		the connectivity has failed due to a configuration problem. The broker service cannot operate while its connection to the database is unavailable.	Unknown	Indicates that the status of the service cannot be determined.
State	Description								
	the connectivity has failed due to a configuration problem. The broker service cannot operate while its connection to the database is unavailable.								
Unknown	Indicates that the status of the service cannot be determined.								

The table below lists the numeric values that correspond to the states reported by this measure:

State	Numeric Value
Ok	1
DBUnconfigured	2
DBRejectedConnection	3
InvalidDBConfigured	4
DBNewerVersionThanService	5
DBOlderVersionThanService	6

Measurement	Description	Measurement Unit	Interpretation														
			<table border="1"> <thead> <tr> <th>State</th><th>Numeri-c Value</th></tr> </thead> <tbody> <tr> <td>DBVer-sionChangeinProgress</td><td>7</td></tr> <tr> <td>Pending Failure</td><td>8</td></tr> <tr> <td>Failed</td><td>9</td></tr> <tr> <td>Unknown</td><td>10</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the States listed in the table above to indicate the status of the broker's connection with the database. However, the graph of this measure will represent States using the corresponding numeric equivalents – i.e., 1 to 10 only.</p>	State	Numeri-c Value	DBVer-sionChangeinProgress	7	Pending Failure	8	Failed	9	Unknown	10				
State	Numeri-c Value																
DBVer-sionChangeinProgress	7																
Pending Failure	8																
Failed	9																
Unknown	10																
Status of Host service on controller	Indicates the current state of the Host service on the controller.		<p>The Citrix Host Service creates and manages hypervisor connections via specific plugins for XenServer, ESX, and Hyper-V. If this service is unavailable, then, the broker service will not be able to access, clone, start, or stop VMs on hypervisors.</p> <p>The table below lists the States reported by this measure and the numeric values that correspond to each of these states:</p> <table border="1"> <thead> <tr> <th>State</th><th>Numeri-c Value</th></tr> </thead> <tbody> <tr> <td>Ok</td><td>1</td></tr> <tr> <td>DBUnconfigured</td><td>2</td></tr> <tr> <td>DBRejectedConnection</td><td>3</td></tr> <tr> <td>InvalidDBConfigured</td><td>4</td></tr> <tr> <td>DBNew-erVersionThanService</td><td>5</td></tr> <tr> <td>DBOlder-VersionThanService</td><td>6</td></tr> </tbody> </table>	State	Numeri-c Value	Ok	1	DBUnconfigured	2	DBRejectedConnection	3	InvalidDBConfigured	4	DBNew-erVersionThanService	5	DBOlder-VersionThanService	6
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DBVer-sionChangeinProgress	7																								
Pending Failure	8																								
Failed	9																								
Unknown	10																								
Status of AD Identity service on controller	Indicates the current state of the AD Identity service on the controller.		<p>The AD Identity server manages Active Directory computer accounts.</p> <p>The table below lists the States reported by this measure and the numeric values that correspond to each of these states:</p> <table border="1"> <thead> <tr> <th>State</th><th>Numeri-c Value</th></tr> </thead> <tbody> <tr> <td>Ok</td><td>1</td></tr> <tr> <td>DBUnconfigured</td><td>2</td></tr> <tr> <td>DBRejectedConnection</td><td>3</td></tr> <tr> <td>InvalidDBConfigured</td><td>4</td></tr> <tr> <td>DBNew-erVersionThanService</td><td>5</td></tr> <tr> <td>DBOlder-VersionThanService</td><td>6</td></tr> <tr> <td>DBVer-sionChangeinProgress</td><td>7</td></tr> <tr> <td>Pending Failure</td><td>8</td></tr> <tr> <td>Failed</td><td>9</td></tr> <tr> <td>Unknown</td><td>10</td></tr> </tbody> </table>	State	Numeri-c Value	Ok	1	DBUnconfigured	2	DBRejectedConnection	3	InvalidDBConfigured	4	DBNew-erVersionThanService	5	DBOlder-VersionThanService	6	DBVer-sionChangeinProgress	7	Pending Failure	8	Failed	9	Unknown	10
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			<p>Note:</p> <p>By default, this measure reports the States listed in the table above to indicate the status of the Citrix AD Identity service. However, the graph of this measure will represent States using the corresponding numeric equivalents – i.e., 1 to 10 only.</p>																						
Status of Configuration service on controller	Indicates the current status of the Configuration service on the controller.		<p>The Citrix Configuration Service stores global meta-data about all the other services so there is no SCP record needed in AD anymore.</p> <p>The table below lists the States reported by this measure and the numeric values that correspond to each of these states:</p> <table border="1"> <thead> <tr> <th>State</th><th>Numeri-c Value</th></tr> </thead> <tbody> <tr> <td>Ok</td><td>1</td></tr> <tr> <td>DBUnconfigured</td><td>2</td></tr> <tr> <td>DBRejectedConnection</td><td>3</td></tr> <tr> <td>InvalidDBConfigured</td><td>4</td></tr> <tr> <td>DBNew-erVersionThanService</td><td>5</td></tr> <tr> <td>DBOlder-VersionThanService</td><td>6</td></tr> <tr> <td>DBVer-sionChangeInProgress</td><td>7</td></tr> <tr> <td>Pending Failure</td><td>8</td></tr> <tr> <td>Failed</td><td>9</td></tr> <tr> <td>Unknown</td><td>10</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the States listed in the table above to indicate the status of the Citrix Configuration service. However, the graph of this measure will represent</p>	State	Numeri-c Value	Ok	1	DBUnconfigured	2	DBRejectedConnection	3	InvalidDBConfigured	4	DBNew-erVersionThanService	5	DBOlder-VersionThanService	6	DBVer-sionChangeInProgress	7	Pending Failure	8	Failed	9	Unknown	10
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Measurement	Description	Measurement Unit	Interpretation																						
			<p>States using the corresponding numeric equivalents – i.e., 1 to 10 only.</p> <p>Status of Machine Creation service on controller</p> <p>Indicates the current state of the Machine Creation server on the controller.</p> <p>The Citrix Machine Creation Service creates new virtual machines.</p> <p>The table below lists the States reported by this measure and the numeric values that correspond to each of these states:</p> <div style="border: 1px solid black; padding: 10px; width: fit-content; margin-left: auto; margin-right: auto;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">State</th> <th style="text-align: center;">Numeri-c Value</th> </tr> </thead> <tbody> <tr><td>Ok</td><td style="text-align: center;">1</td></tr> <tr><td>DBUnconfigured</td><td style="text-align: center;">2</td></tr> <tr><td>DBRejectedConnection</td><td style="text-align: center;">3</td></tr> <tr><td>InvalidDBConfigured</td><td style="text-align: center;">4</td></tr> <tr><td>DBNew-erVersionThanService</td><td style="text-align: center;">5</td></tr> <tr><td>DBOlder-VersionThanService</td><td style="text-align: center;">6</td></tr> <tr><td>DBVer-sionChangeInProgress</td><td style="text-align: center;">7</td></tr> <tr><td>Pending Failure</td><td style="text-align: center;">8</td></tr> <tr><td>Failed</td><td style="text-align: center;">9</td></tr> <tr><td>Unknown</td><td style="text-align: center;">10</td></tr> </tbody> </table> </div> <p>Note:</p> <p>By default, this measure reports the States listed in the table above to indicate the status of the Citrix Machine Creation service. However, the graph of this measure will represent States using the corresponding numeric equivalents – i.e., 1 to 10 only.</p>	State	Numeri-c Value	Ok	1	DBUnconfigured	2	DBRejectedConnection	3	InvalidDBConfigured	4	DBNew-erVersionThanService	5	DBOlder-VersionThanService	6	DBVer-sionChangeInProgress	7	Pending Failure	8	Failed	9	Unknown	10
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DBVer-sionChangeInProgress	7																								
Pending Failure	8																								
Failed	9																								
Unknown	10																								
Status of Machine Identity service on controller	Indicates the current status of the Machine Identity service on the controller.		<p>The Citrix Machine Identity Service manages the storage of virtual machines.</p> <p>The table below lists the States reported by this measure and the numeric values that correspond to each of these states:</p>																						

Measurement	Description	Measurement Unit	Interpretation																						
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Note:

By default, this measure reports the **States** listed in the table above to indicate the status of the Citrix Machine Identity service. However, the graph of this measure will represent **States** using the corresponding numeric equivalents – i.e., 1 to 10 only.

The detailed diagnosis of the *License server availability* measure displays the name of the License server in the site and the port at which it listens. This information enables administrators to effectively troubleshoot issues with the availability of the License server.

Figure 6.9: The detailed diagnosis of the License server availability measure

6.4 The Desktop Groups Layer

With the help of the tests mapped to this layer, you can accurately identify the following:

- Which desktop group has been over-utilized?
- Which desktop group is unavailable currently?

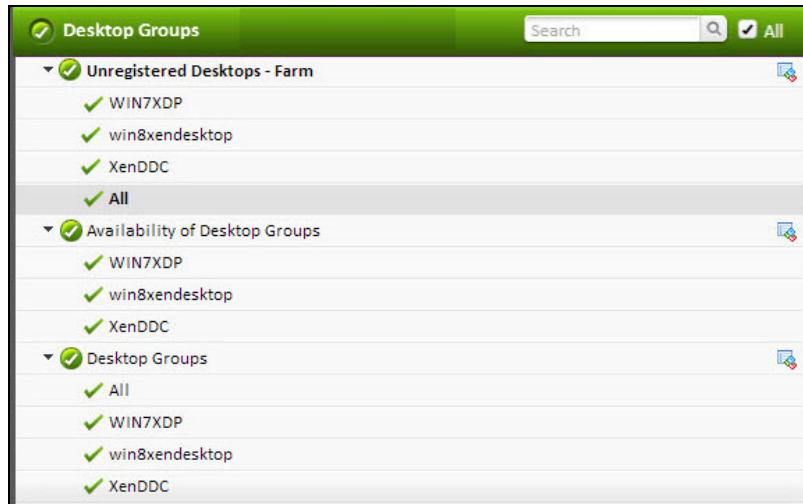


Figure 6.10: The tests mapped to the Desktop Groups layer

6.4.1 Desktop Groups Test

Desktop groups are sets of virtual machines allocated to users and user groups.

In a desktop group:

- You can use multiple catalogs
- You can allocate a user to multiple machines
- You can allocate multiple users to one machine
- You can, using the XenDesktop SDK, allocate a machine to a device instead of a user or group

With the help of this test, you can determine the maintenance mode of each desktop group managed by the monitored controller, and track the usage of desktops within each group. Unregistered desktops, CPU-intensive desktops, disconnected desktops, and desktops available to users, which are managed by this controller, can thus be quickly and accurately isolated.

Target of the test : A Citrix Delivery Controller 5.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for each desktop group managed by the monitored controller.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The host for which this test is to be configured.
Port	Refers to the port used by the DDC. The default port number is 80.
Detailed Diagnosis	<p>To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Is desktop group in maintenance mode?	Indicates whether this desktop group is in a maintenance mode or not.		<p>Desktop groups are typically put on maintenance mode, if the connections to the desktops within the group are to be temporarily stopped so that maintenance tasks are carried out.</p> <p>XenDesktop has no control over desktop groups that are in maintenance mode. No user can log on to a desktop in this state.</p> <p>This measure reports the value Yes if a desktop group is in the maintenance mode, and reports No if it is not. The</p>

Measurement	Description	Measurement Unit	Interpretation						
			<p>numeric values that correspond to the above-mentioned states are as follows:</p> <table border="1"> <thead> <tr> <th>State</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Yes</td><td>1</td></tr> <tr> <td>No</td><td>0</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned states while indicating the maintenance status of the desktop group. However, the graph of this measure will represent the maintenance modes using the numeric equivalents – 1 and 0 – only.</p>	State	Numeric Value	Yes	1	No	0
State	Numeric Value								
Yes	1								
No	0								
Total desktops	Indicates the total number of desktops in this group.	Number							
Available desktops	Indicates the number of desktops in this desktop group that are available for a new user to connect to.	Number	Ideally, this value should be high. The detailed diagnosis of this measure will reveal the complete details of the available desktops, such as, the desktop name, IP address, the desktop type, the catalog to which the desktop belongs, the hosting server on which the desktop operates, etc.						
Disconnected desktops	Indicates the number of desktops that are disconnected from this desktop group.	Number	The detailed diagnosis of this measure will reveal the complete details of the disconnected desktops, such as, the desktop name, IP address, the desktop type, the catalog to which the desktop belongs, the hosting server on which the desktop operates, etc.						
Desktops in use	Indicates the number of desktops in this group that are currently used by users.	Number	The detailed diagnosis of this measure provides complete details of the desktops in use such as the desktop name, the desktop group and catalog to which it belongs, the operating system it						

Measurement	Description	Measurement Unit	Interpretation
			runs on, the DNS server with which it communicates, and the desktop type - whether Private or Shared.
Percentage of used desktops	Indicates the percentage of desktops in this group that are currently in use by users.	Percent	<p>Ideally, the value of this measure should be low. A value close to 100% indicates that the desktop group is about to run out of free desktops. Owing to the absence of unused desktops, other users who have been assigned to this desktop group will be denied access to the group upon login.</p> <p>Moreover, high usage of a desktop group may also drain the corresponding hosting infrastructure of its physical and virtual resources.</p>
Never registered desktops	Indicates the number of desktops that are not registered properly with the broker although they are configured in this desktop group.	Number	A virtual desktop may not register if the virtual desktop agent executing on that desktop experiences issues in its operations.
Unregistered desktops	Indicates the number of desktops that are configured in this desktop group but are in an unregistered state with the broker.	Number	<p>A virtual desktop is said to be in an Unregistered state if the Virtual Desktop Agent is executing smoothly on the desktop, but fails to register with the controller, owing to one/more desktop-related issues.</p> <p>The detailed diagnosis of this measure will reveal the complete details of the unregistered desktops, such as, the desktop name, IP address, the desktop type, the catalog to which the desktop belongs, the hosting server on which the desktop operates, etc.</p>
Registered desktops	Indicates the number of desktops that are registered in this desktop		

Measurement	Description	Measurement Unit	Interpretation
	group.		
High CPU desktops	Indicates the number of desktops managed by this desktop group that are currently consuming CPU resources excessively.	Number	A low value is desired for this measure. Use the detailed diagnosis of this measure to know which desktops are running CPU-intensive applications.
High latency desktops	Indicates the number of desktops managed by this desktop group that are currently experiencing high network latencies.	Number	A low value is desired for this measure. Use the detailed diagnosis of this measure to know which desktops are experiencing high latencies.
High profile load time desktops:	Indicates the number of desktops managed by this desktop group that are currently taking too long a time to load profiles.	Number	A low value is desired for this measure. Use the detailed diagnosis of this measure to know which desktops facing issues when loading profiles.
Last connection failed desktops	Indicates the number of desktops to which the last connection attempt failed.	Number	A low value is desired for this measure. Use the detailed diagnosis of this measure to know which desktops could not be connected to recently.
Recent failed connection desktops	Indicates the number of desktops to which connections failed during the last measurement period.	Number	A low value is desired for this measure. Use the detailed diagnosis of this measure to know which desktops could not be connected to in the last measurement period.
Pending update desktops	Indicates the number of desktops managed by this desktop group to which updates are currently pending.	Number	Use the detailed diagnosis of this measure to know which desktops are awaiting updates.
PoweredOff desktops	Indicates the number of desktops in this desktop group that are currently powered off.	Number	Use the detailed diagnosis of this measure to know which desktops are currently powered off.
Unavailable desktops	Indicates the number of desktops that are not	Number	Unavailable desktops are those desktops to which the Citrix Broker

Measurement	Description	Measurement Unit	Interpretation
	available currently.		<p>service is unable to broker user connections.</p> <p>This problem occurs when a Desktop Group is configured with the '<i>ShutdownAfterUse</i>' parameter, but is not properly shutdown by the XenDesktop DDC after use. When a session is started to a desktop group with the '<i>ShutdownAfterUse</i>' setting enabled, the desktop is flagged with a parameter called '<i>WillShutdownAfterUse</i>'. This flag is cleared when the desktop is shut down by the broker, so if/when a '<i>ShutdownAfterUse</i>' power action fails, the worker remains in this state until the desktop is successfully power managed by the broker. Desktops will also reach this state when placed into maintenance mode while a session is active, and logged off while still in maintenance mode.</p> <p>Idle pool buffers facilitate cleaning of 'tainted' desktops when transitioning from peak to off-peak schedules. However, if both peak and off-peak idle pool buffers are set to 100%, desktops will remain in this state until restarted by XenDesktop.</p> <p>To prevent this issue from occurring, ensure that the broker is able to power manage virtual machines on the target hosting infrastructure by right-clicking on any desktop and clicking Shut Down or Restart. Check your hypervisor console to ensure that the power action takes place. If this does not take place, additional</p>

Measurement	Description	Measurement Unit	Interpretation
			<p>troubleshooting will be required to address this.</p> <p>Citrix recommends creating a schedule to restart Virtual Machines during an off-peak time of possible, which will clear the WillShutdownAfterUse flag. You can also clean up desktops in a 'tainted' state every week, so that no desktops remain in this state:</p>

The detailed diagnosis of the *Desktops in use* measure provides complete details of the desktops in use such as the desktop name, the desktop group and catalog to which it belongs, the operating system it runs on, the DNS server with which it communicates, and the desktop type - whether Private or Shared.

Time	Machine Name	DNS Name	IP Address	OS Type	Desktop Kind	Desktop Group Name	Catalog Name	Hosted Machine Name	Hosted Server Name	Hypervisor Connection Name
Jan 10, 2011 14:07:23	MAS\OOK123	ook123.Mas.eGinnovations.com	192.168.10.175	Windows XP Service Pack 3	Private	NETWORK IT	XP2	-	-	-

Figure 6.11: The detailed diagnosis of the Desktops in use measure

The detailed diagnosis of the *PoweredOff desktops* measure provides complete details of the desktops that are currently powered off.

Time	Machine Name	DNS Name	IP Address	OS Type	Desktop Kind	Desktop Group Name	Catalog Name	Hosted Machine Name	Hosted Server Name	Hypervisor Connection Name
Aug 11, 2011 18:43:56	MAS\FP1XP1	fp1xp1.Mas.eGinnovations.com	-	-	Private	ADMIN_XP_1	Admin-XP1	Windows XP SP3 (32-bit) forxd5clust1 (192.168.8.170)	-	HYP1cbx56fp1
Aug 11, 2011 18:34:31	MAS\FP1XP1	fp1xp1.Mas.eGinnovations.com	-	-	Private	ADMIN_XP_1	Admin-XP1	Windows XP SP3 (32-bit) forxd5clust1 (192.168.8.170)	-	HYP1cbx56fp1

Figure 6.12: The detailed diagnosis of the Poweredoff desktops measure

6.4.2 Availability of Desktop Groups Test

Desktop groups consist of desktops that are pooled, preassigned, or assigned on first use. Each group can contain only one type of desktop. Desktops in pooled groups are allocated to users on a per-session, first-come first-served basis.

This test promptly alerts you to the non-availability of desktop groups that are configured for this broker site.

Target of the test : A Citrix Delivery Controller 5.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for each desktop group managed by the target XenDesktop site.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the DDC listens to.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation						
Is desktop group available?	Indicates the availability of this desktop group.		<p>This measure reports the values Yes or No to indicate the availability of the desktop group. The numeric values that correspond to the measure values are available in the table below:</p> <table border="1"> <thead> <tr> <th>State</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Yes</td><td>1</td></tr> <tr> <td>No</td><td>0</td></tr> </tbody> </table> <p>Note:</p>	State	Numeric Value	Yes	1	No	0
State	Numeric Value								
Yes	1								
No	0								

Measurement	Description	Measurement Unit	Interpretation
			By default, this measure reports the above-mentioned states while indicating the availability of the desktop group. However, the graph of this measure will represent the availability states using the corresponding numeric equivalents.

6.4.3 Unregistered Desktops Test

XenDesktop relies upon a software component installed on each virtual desktop (the Virtual Desktop Agent) being in communication with one of the controllers in a XenDesktop site. This state is referred to as the Virtual Desktop Agent being registered with a controller. If communication fails for any reason, the Virtual Desktop Agent is said to have failed to register with a controller. It is then not possible for XenDesktop to broker a connection to the virtual desktop in question, and the virtual desktop becomes a wasted resource.

If this is to be avoided, administrators should be able to quickly detect which virtual desktops are not registered with any controller in the farm, figure out the reasons for this condition, and fix the problem, so that the virtual desktop agent is able to communicate with the controller. This is where the **Unregistered Desktops** test helps!

Using this test, administrators can be instantly alerted to unregistered desktops in each desktop group in a broker farm. The detailed diagnosis of the test reveals the names of the unregistered desktops.

Note:

Since this test reports the number and names of unregistered desktops at the farm-level, it will report the same metrics when executed on any controller in a farm. Therefore, if you are monitoring multiple controllers in a farm, it is recommended that you run this test for only one controller, and disable this test for other controllers in that farm.

Target of the test : A Citrix Delivery Controller 5.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for each desktop group managed by a desktop broker farm.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the DDC listens to.
Detailed Diaganosis	<p>To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation				
Unregistered desktops	Indicates the number of unregistered desktops in this desktop group.	Number	<p>A high value is indicative of too many unregistered desktops in a group.</p> <p>Some of the common reasons for registration failures are as follows:</p> <table border="1"> <thead> <tr> <th>Reason</th><th>Resolution</th></tr> </thead> <tbody> <tr> <td>Improper fire-wall configuration</td><td>If the firewall on the virtual desktop has not had the appropriate exclusions configured to enable communication with controllers, the registration fails. Reconfigure and re-</td></tr> </tbody> </table>	Reason	Resolution	Improper fire-wall configuration	If the firewall on the virtual desktop has not had the appropriate exclusions configured to enable communication with controllers, the registration fails. Reconfigure and re-
Reason	Resolution						
Improper fire-wall configuration	If the firewall on the virtual desktop has not had the appropriate exclusions configured to enable communication with controllers, the registration fails. Reconfigure and re-						

Measurement	Description	Measurement Unit	Interpretation	
			Reason	Resolution
			enable the firewall.	
			Incorrect DNS configuration	If the virtual desktop or the controller sees an incorrect IP address for the other party, registration fails. In this case, fix the problem with your DNS configuration, and restart the virtual desktop, the controller, or both, as appropriate.
			Time synchronization not properly configured	The communication between virtual desktops and controllers is secured using Kerberos. This relies on Tickets with a limited life span.
				If the difference in system time between the two ends of the communication is too great, the Tickets are always considered to have timed out when they are accessed and communication fails. Check that the system time on all systems is within a reasonably small margin (the default domain-wide Kerberos setting is five minutes).
			Domain membership problems	Under some circumstances, it can appear that a machine (virtual

Measurement	Description	Measurement Unit	Interpretation	
			Reason	Resolution
			<p>desktop or controller) is a part of a domain, but in fact, it is not (for various reasons). This can cause problems with the secure communication between virtual desktops and controller. Try removing the machines in question from their domains (temporarily moving them into a workgroup, for example) and then subsequently rejoin them to their domains. When the subsequent system restart has completed, check to see if registration has been successful.</p> <p>Service Principal Names (SPNs)</p>	<p>desktop or controller) is a part of a domain, but in fact, it is not (for various reasons). This can cause problems with the secure communication between virtual desktops and controller. Try removing the machines in question from their domains (temporarily moving them into a workgroup, for example) and then subsequently rejoin them to their domains. When the subsequent system restart has completed, check to see if registration has been successful.</p> <p>Service Principal Names (SPNs)</p> <p>Communication between virtual desktops and controllers uses Microsoft's Windows Communication Foundation (WCF). The services implementing the communication endpoints use the computer's identity. Thus, WCF's mutual authentication model uses the SPN associated with the respective computer accounts (by default, HOST/host's-fully-</p>

Measurement	Description	Measurement Unit	Interpretation	
			Reason	Resolution
			qualified-domain-name). The controller determines the virtual desktop's SPN after inspecting the servicePrincipalName attribute of the associated computer account in Active Directory. You can inspect the virtual desktop's computer account using tools such as Active Directory Explorer. If the servicePrincipalName attribute does not include an entry with the computer's fully qualified domain name, try editing it manually, and check to see if that fixes registration problems.	
			Multiple network adapters	If your virtual desktops contain multiple network adapters that can be used to communicate with the controllers, this might cause the security negotiation to fail.
			Virtual desktop not added to the site	If you see Virtual Desktop Agent event log entries on the worker suggesting registration failure, complete the following steps:

Measurement	Description	Measurement Unit	Interpretation	
			Reason	Resolution
			<ul style="list-style-type: none"> Check that the virtual desktop is correctly added to the correct XenDesktop site. This must be done from both the point of view of the virtual desktop and of the XenDesktop site itself. In Desktop Director, enter the name of the machine into the search box – the machine name must appear in the drop-down that appears below the search box as you type the name. If it does not, it means that the 	<ul style="list-style-type: none"> Check that the virtual desktop is correctly added to the correct XenDesktop site. This must be done from both the point of view of the virtual desktop and of the XenDesktop site itself. In Desktop Director, enter the name of the machine into the search box – the machine name must appear in the drop-down that appears below the search box as you type the name. If it does not, it means that the

Measurement	Description	Measurement Unit	Interpretation	
			Reason	Resolution
			<p>machine has not been added to the site correctly.</p> <ul style="list-style-type: none"> Check that the machine in question is a member of the correct site, check that the list of controllers listed in the event log entry with Event ID = 1010 on the virtual desktop is correct for your XenDesktop site. If it does not, the virtual desktop has not been correctly configured to be part of the site. 	<p>Using the detailed diagnosis of this measure, you can identify the unregistered desktops, the virtual host on which these desktops are operating, when last these</p>

Measurement	Description	Measurement Unit	Interpretation
			virtual desktops attempted to connect to the broker, and why that connection attempt failed.

Using the detailed diagnosis of this measure, you can identify the unregistered desktops, the virtual host on which these desktops are operating, when last these virtual desktops attempted to connect to the broker, and why that connection attempt failed. This way, administrators can quickly determine the reason for the ‘unregistered’ state of the desktops and endeavour to fix it, so that no desktop remains a wasted resource.

Component	Measured By	Test	Description	Measurement	Timeline	Submit											
Broker_142:80	Broker_142	Unregistered Desktops - Farm	win8xendesktop	Unregistered desktop	Latest	<input type="button" value="Submit"/>											
List the unregistered desktops																	
<input type="button" value="May 06, 2014 11:02:36"/>																	
TIME	MACHINE NAME	DNS NAME	IP ADDRESS	OS TYPE	POWER STATE	SUMMARY STATE	DESKTOP GROUP NAME	DESKTOP KIND	HOSTED MACHINE NAME	HOSTED SERVER NAME	HYPERVERSOR CONNECTION NAME	CATALOG NAME	LAST CONNECTION FAILED REASON	LAST CONNECTION TIME	LAST CONNECTION USER	ASSOCIATED USER	PEND UPDA
	MAS\win8xendesk001	win8xendesk001.Mas.eGInnovations.com	-	-	Off	Off	win8xendesktop	Shared	win8xendesk001 -	Xendesk8	windows 8 xendesktop	None	-	-	-	<input type="checkbox"/>	

Figure 6.13: Detailed diagnosis of Unregistered desktops measure

6.5 The Virtual Desktops Layer

Using the tests mapped to this layer, you can easily understand the following:

- The count of disconnected and reconnected sessions
- The count of logins and logouts from desktops
- Whether/not the virtual desktop agent is available on a desktop
- The state of desktops
- The number of sessions in which published applications on a desktop were accessed



Figure 6.14: The tests mapped to the Virtual Desktops layer

6.5.1 Desktop Disconnects in Controller Test

A user session is terminated when a user logs off from the desktop or when the session is abruptly interrupted. When a user logs off, all the applications started by the user are terminated. However, when a user disconnects, the applications started by the user will keep running on the desktop consuming resources. Hence, the number of disconnected sessions on a desktop should be kept to a minimum. In some environments, desktop administrators may also wish to automatically restart/shutdown those virtual desktops with sessions that are in a disconnected state for a long period of time.

This test reports the total number of disconnected sessions to all the desktops managed by the monitored controller, and also automatically restarts/shuts down the virtual desktop, if the disconnected session duration to that desktop exceeds a configured value.

Target of the test : A Citrix Delivery Controller 5.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for the target Delivery controller.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the DDC for which this test is to be configured.
Port	Refers to the port at which the specified DDC listens to.

Parameter	Description
Reconnect Duration	The reconnect Duration parameter is used by this test while computing the value for the <i>Quick reconnects by users</i> measure. This measure counts all the users who reconnected to the virtual desktops within the short period of time (in minutes) specified against Reconnect Duration. By default, the Reconnect Duration is 15 minutes.
DD Frequency	Refers to the frequency with which detailed diagnosis measures are to be generated for this test. The default is 1:1. This indicates that, by default, detailed measures will be generated every time this test runs, and also every time the test detects a problem. You can modify this frequency, if you so desire. Also, if you intend to disable the detailed diagnosis capability for this test, you can do so by specifying <i>none</i> against DD frequency.
Detailed Diagnosis	<p>To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Total disconnected sessions	Indicates the total number of sessions that are disconnected.	Number	The detailed diagnosis for this measure provides the complete details of disconnected sessions on the virtual desktops managed by the Delivery Controller.
New disconnected sessions	Indicates the number of sessions that were disconnected in the last measurement period.	Number	The detailed diagnosis for this measure can be used to track whether specific users are being disconnected often.
Quick reconnects by users	Indicates the number of users who reconnected soon after a disconnect.	Number	The detailed diagnosis of this measure, if enabled lists the users who have reconnected quickly.

The detailed diagnosis for the *Total disconnected sessions* measure provides the complete details of disconnected sessions on the virtual desktops managed by the Delivery Controller.

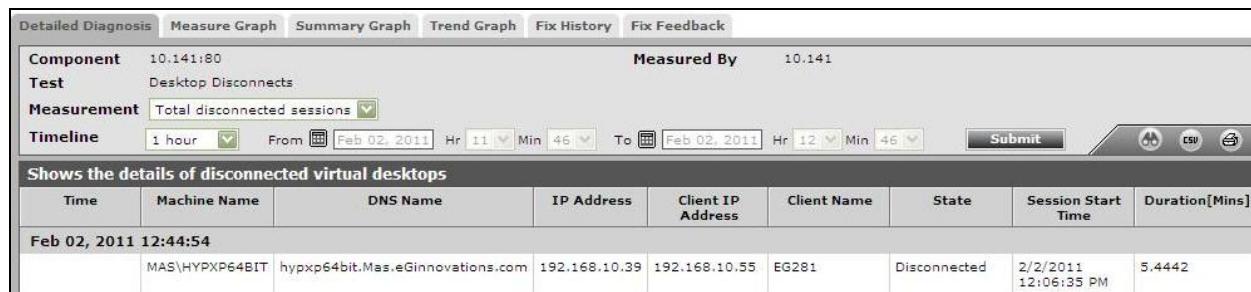


Figure 6.15: The detailed diagnosis of the Total disconnected sessions measure

The detailed diagnosis for the *New disconnected sessions* provides the details of sessions that were newly disconnected; this information can be used to track whether specific users are being disconnected often.



Figure 6.16: The detailed diagnosis of the New disconnected sessions measure

6.5.2 Desktop Logins in Controller Test

This test monitors the logins to virtual desktops managed by the monitored controller and reports the total number of logins and logouts.

Target of the test : A Citrix Delivery Controller 5.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for the target Delivery controller.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the specified DDC listens to.
Reconnect Duration	The Reconnect Duration parameter is used by this test while computing the value for the <i>Quick reconnects by users</i> measure. This measure counts all the users who reconnected to the virtual desktops within the short period of time (in minutes) specified against Reconnect Duration. By default, the Reconnect Duration is 15 minutes.
DD Frequency	Refers to the frequency with which detailed diagnosis measures are to be generated for this test. The default is 1:1. This indicates that, by default, detailed measures will be generated every time this test runs, and also every time the test detects a problem. You can modify this frequency, if you so desire. Also, if you intend to disable the detailed diagnosis capability for this test, you can do so by specifying <i>none</i> against DD frequency.
Detailed Diagnosis	<p>To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Current sessions	Indicates the number of user sessions that are currently active across all the virtual desktops.	Number	<p>This is a good indicator of the session load on the desktops.</p> <p>To determine the details of the currently active sessions, use the detailed diagnosis of this measure.</p>

Measurement	Description	Measurement Unit	Interpretation
New sessions	This is a good indicator of the session load on the desktops.	Number	A consistent zero value could indicate a connection issue.
Percent new sessions	Indicates the percentage of current sessions that has been logged in during the last measurement period.	Percent	
Sessions logging out	Indicates the number of sessions that has been logged out.	Number	If all the current sessions suddenly log out, it indicates a problem condition that requires investigation. The detailed diagnosis of this measure lists the sessions that was logged out.

To determine the details of the currently active sessions, use the detailed diagnosis of the *Current sessions* measure. The detailed diagnosis reveals the names of the VMs to which user sessions are currently active, the IP address of each VM, the operating system of the VM, the user who has connected to the VM via the session, the IP address, name, and version of the client that initiated the session, the current state of the session, and the session start time.

Time	Machine Name	DNS Name	IP Address	Os Type	Brokering Username	Client IP Address	Client Name	Client Version	Protocol	State	Session Start Time
Jan 10, 2011 14:03:48	MAS\OOK123	ook123.Mas.eGinnovations.com	192.168.10.175	Windows XP Service Pack 3	-	192.168.10.158	EG343	12.1.0.30	HDX	NonBrokeredSession	12/22/2011 10:50:31 AM

Figure 6.17: The detailed diagnosis of the Current sessions measure

6.5.3 Desktop Applications Test

With Citrix Delivery Controller 5.x, you provide users with access to information by publishing the following types of resources that can be virtualized on servers or desktops:

- Applications installed on servers running Delivery Controller - 5. When users access them, the published applications appear to be running locally on client devices.

- Streamed applications installed in application profiles and stored on a file server in your App Hub. Users access the profile and virtualize the applications on their client desktops.
- Data files such as Web pages, documents, media files, spreadsheets, and URLs. In XenApp, the combined total of data types you publish is referred to as content.
- The server desktops, so users can access all of the resources available on the server.

All these types of resources are published using a Publish Application wizard in the Delivery Controller -5 console. Such resources that are launched in the Delivery Controller - 5 are called as Published applications.

This test reports the total number of sessions in which, a user has accessed each application published on managed desktops. Only those published applications that are launched from a Citrix client are monitored. If a user launches an application from within a virtual desktop session then it will not show up in the list of running applications. Also note that this is a list of launched published applications, not a list of processes that are running on the desktop.

Target of the test : A Citrix Delivery Controller 5.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for each application published on the desktops managed by the target Delivery Controller.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the DDC for which this test is to be configured.
Port	Refers to the port at which the specified DDC listens to.
Detailed Diagnosis	<p>To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability

Parameter	Description
	<ul style="list-style-type: none"> Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Total sessions	Indicates the total number of sessions in which a user has accessed this published application.	Number	The detailed diagnosis of this measure provides the details of the published applications accessed by user sessions. Such details include the name of the desktop hosting the application, the catalog to which the virtual desktop belongs, the executable path to the application, the user who accessed the application, the IP address of the client from which the user accessed the application, the start time of the user session, the brokering time, and the desktop license ID.

6.5.4 Desktops Agents Test

The Virtual Desktop Agent runs on the computers that host the virtual desktops you want to deliver to your users. This agent enables direct ICA (Independent Computing Architecture) service that manages communication between virtual desktops and user devices. Without this agent, the Delivery Controller - 5 will not be able to communicate with virtual desktops. It is therefore essential to periodically verify the availability of the Virtual Desktop Agent.

This test enables administrators to find out whether a Virtual Desktop Agent is available or not on each virtual desktop within each desktop group managed by the Delivery Controller.

Target of the test : A Citrix Delivery Controller 5.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for each desktop managed by the target Delivery Controller 5.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the specified DDC listens to.
Virtual Desktop Agent port	Specify the port using which the broker connects to the virtual desktops. By default, 80 is displayed here.
Report by Groupname	By default, the Report by Groupname flag is set to Yes , indicating that this test reports a set of measures for every <i>desktopgroup:virtualdesktop</i> combination, by default. To ensure that this test reports a set of measures for every virtualdesktop alone, set this flag to No .
Report by Controllername	By default, this flag is set to Yes . This implies that every <i>desktopgroup:virtualdesktop</i> pair for which this test reports metrics will be prefixed by the <i>controllername</i> as well. Every descriptor will hence be of the following format by default: <i>Controllername->desktopgroup:virtualdesktop</i> . If you want to remove the controllername prefix from the descriptors, then, set this flag to No .
Only Poweredon VMs	By default, the Only Poweredon VMs flag is set to Yes , indicating that this test reports the availability of the virtual desktop agent on powered-on VMs alone. To know the availability of this agent on powered-off VMs as well, set this flag to No .

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Desktop agent availability	Indicates whether the Virtual Desktop Agent is available on this virtual desktop within this desktop group.	Percent	While the value 100 indicates that the Virtual Desktop Agent is available to broker requests sent from the Delivery Controller - 5, the value 0 indicates that it is currently unavailable. If a Virtual Desktop Agent is unavailable, the Delivery Controller - 5 will not be able to communicate with the corresponding virtual desktop, thereby affecting the quality of the user experience with the XenDesktop solution.

6.5.5 Desktops in Controller Test

This test reports the status of the virtual desktops managed by monitored controller.

Target of the test : A Citrix Delivery Controller 5.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for each desktop managed by the target Delivery controller.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the specified DDC listens to.
Virtual Desktop Agent port	Specify the port using which the broker connects to the virtual desktops. By default, 80 is displayed here.
Report by Groupname	By default, the Report by Groupname flag is set to Yes , indicating that this test reports a set of measures for every <i>desktopgroup:virtualdesktop</i> combination, by default. To ensure that this test reports a set of measures for every virtualdesktop alone, set this flag to No .
Report by Controllername	By default, this flag is set to Yes . This implies that every <i>desktopgroup:virtualdesktop</i> pair for which this test reports metrics will be prefixed by the <i>controllername</i> as well. Every descriptor will hence be of the following format by default: <i>Controllername->desktopgroup:virtualdesktop</i> . If you want to remove the controllername prefix from the descriptors, then, set this flag to No .
Only Poweredon VMs	By default, the Only Poweredon VMs flag is set to Yes , indicating that this test reports the availability of the virtual desktop agent on powered-on VMs alone. To know the availability of this agent on powered-off VMs as well, set this flag to No .
Detailed Diagnosis	<p>To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p>

Parameter	Description
	<ul style="list-style-type: none"> The eG manager license should allow the detailed diagnosis capability Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation								
Power state of desktop	Indicates the power state of the virtual desktop.		<p>This measure reports the following states while monitoring the power state of the virtual desktops.</p> <ul style="list-style-type: none"> On TurningOn Resuming Suspending Suspended Off TurningOff Unmanaged Unavailable Unknown <p>The numeric values that correspond to the above-mentioned states are as follows:</p> <table border="1"> <thead> <tr> <th>State</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>On</td><td>1</td></tr> <tr> <td>TurningOn</td><td>2</td></tr> <tr> <td>Resuming</td><td>3</td></tr> </tbody> </table>	State	Numeric Value	On	1	TurningOn	2	Resuming	3
State	Numeric Value										
On	1										
TurningOn	2										
Resuming	3										

Measurement	Description	Measurement Unit	Interpretation																
			<table border="1"> <thead> <tr> <th>State</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Suspending</td><td>4</td></tr> <tr> <td>Suspended</td><td>5</td></tr> <tr> <td>Off</td><td>6</td></tr> <tr> <td>Turning Off</td><td>7</td></tr> <tr> <td>Unmanaged</td><td>8</td></tr> <tr> <td>Unavailable</td><td>9</td></tr> <tr> <td>Unknown</td><td>10</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned States while indicating the power state of the virtual desktop. However, the graph of this measure will represent the states using their corresponding numeric equivalents – i.e., 1 to 10.</p> <p>The detailed diagnosis of this measure reveals the IP address and operating system of the desktop, the desktop group to which it belongs, the hypervisor on which it operates, and the name of the hypervisor connection.</p>	State	Numeric Value	Suspending	4	Suspended	5	Off	6	Turning Off	7	Unmanaged	8	Unavailable	9	Unknown	10
State	Numeric Value																		
Suspending	4																		
Suspended	5																		
Off	6																		
Turning Off	7																		
Unmanaged	8																		
Unavailable	9																		
Unknown	10																		
Registration state	Indicates whether this virtual desktop is registered with the broker or not.		<p>This measure reports the following states to indicate the registration state of the virtual desktop.</p> <ul style="list-style-type: none"> • Registered • Unregistered • AgentError <p>A virtual desktop is said to be in an Unregistered state if the Virtual Desktop Agent is executing smoothly on the desktop, but fails to register with the controller, owing to one/more of the</p>																

Measurement	Description	Measurement Unit	Interpretation
			<p>following desktop-related issues:</p> <ul style="list-style-type: none"> • The virtual desktop may not be added to the correct site; • The virtual desktop firewall is not properly configured; • The DNS is not properly configured; • The time synchronization between the virtual desktop and the controller is not properly configured; • Domain membership problems – a virtual desktop may appear to be a part of a particular domain, but in reality, may be part of another domain; • The usage of multiple network adapters by a virtual desktop may cause the security negotiation between the desktop and controller to fail; • Issues with the virtual desktop's Service Principal Name (SPN) <p>For more details, you can refer to the following Citrix Knowledge Articles:</p> <ul style="list-style-type: none"> • CTX126992 - Troubleshooting Virtual Desktop Agent Registration with Controllers in XenDesktop 5.x • CTX129225 - VDAs fail to register when using disjoint namespaces in a

Measurement	Description	Measurement Unit	Interpretation								
			<p>XenDesktop 5 Environment</p> <ul style="list-style-type: none"> • CTX129700 - XenDesktop 5 Virtual Machines Do Not Successfully Register with the Desktop Delivery Controller <p>An <i>AgentError</i> is reported if the Virtual Desktop Agent itself is experiencing issues in its operations.</p> <p>The numeric values that correspond to the above-mentioned states are as follows:</p> <table border="1"> <thead> <tr> <th>State</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Registered</td><td>1</td></tr> <tr> <td>Unregistered</td><td>2</td></tr> <tr> <td>AgentError</td><td>3</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned States while indicating the registration state of the virtual desktop with the desktop broker. However, the graph of this measure will represent the states using their corresponding numeric equivalents – i.e., 1 to 3.</p>	State	Numeric Value	Registered	1	Unregistered	2	AgentError	3
State	Numeric Value										
Registered	1										
Unregistered	2										
AgentError	3										
Desktop state:	Indicates the current state of this virtual desktop.		<p>This measure indicates the following states while indicating the current state of the virtual desktop.</p> <ul style="list-style-type: none"> • Available • InUse • Disconnected • Unregistered • Off 								

Measurement	Description	Measurement Unit	Interpretation														
			<ul style="list-style-type: none"> Unknown <p>The numeric values that correspond to the above-mentioned states are as follows:</p> <table border="1"> <thead> <tr> <th>State</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Available</td><td>0</td></tr> <tr> <td>InUse</td><td>1</td></tr> <tr> <td>Disconnected</td><td>2</td></tr> <tr> <td>Unregistered</td><td>3</td></tr> <tr> <td>Off</td><td>4</td></tr> <tr> <td>Unknown</td><td>5</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the States listed in the table above for indicating the current state of the virtual desktop. However, the graph of this measure will represent states using their corresponding numeric equivalents – i.e., 0 to 5.</p>	State	Numeric Value	Available	0	InUse	1	Disconnected	2	Unregistered	3	Off	4	Unknown	5
State	Numeric Value																
Available	0																
InUse	1																
Disconnected	2																
Unregistered	3																
Off	4																
Unknown	5																
Desktop kind	Indicates this virtual desktop type.		<p>This measure reports the following values while indicating the virtual desktop type.</p> <ul style="list-style-type: none"> Unknown Private Shared PrivateApp SharedApp <p>The numeric values that correspond to the above-mentioned types are as follows:</p>														

Measurement	Description	Measurement Unit	Interpretation												
			<table border="1"> <thead> <tr> <th>Type</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Unknown</td><td>0</td></tr> <tr> <td>Private</td><td>1</td></tr> <tr> <td>Shared</td><td>2</td></tr> <tr> <td>PrivateApp</td><td>3</td></tr> <tr> <td>SharedApp</td><td>4</td></tr> </tbody> </table> <p>Note: By default, this measure reports the above-mentioned Types. However, the graph of this measure will represent these types using their corresponding numeric equivalents – i.e., 0 to 4.</p>	Type	Numeric Value	Unknown	0	Private	1	Shared	2	PrivateApp	3	SharedApp	4
Type	Numeric Value														
Unknown	0														
Private	1														
Shared	2														
PrivateApp	3														
SharedApp	4														
Is desktop in maintenance mode?	Indicates whether this virtual desktop is currently under maintenance.		<p>If you want to temporarily stop connections to a desktop so that maintenance tasks can be carried out, you can put the desktop into maintenance mode. If this is the case, then the value of this measure will be Yes. If the desktop is not on maintenance, then the value will be No.</p> <p>The numeric values that correspond to the above-mentioned states are as follows:</p> <table border="1"> <thead> <tr> <th>State</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>No</td><td>0</td></tr> <tr> <td>Yes</td><td>1</td></tr> </tbody> </table> <p>Note: By default, this measure reports Yes/No to indicate the maintenance mode of a virtual desktop. However, the graph of this measure will represent the maintenance mode using the corresponding numeric equivalents – i.e., 0 and 1.</p>	State	Numeric Value	No	0	Yes	1						
State	Numeric Value														
No	0														
Yes	1														
Is user connected	Indicates whether any		This measure reports a value Yes, when												

Measurement	Description	Measurement Unit	Interpretation						
desktop?	user is currently connected to this virtual desktop or not.		<p>the user is connected to the virtual desktop and reports a value <i>No</i> when the user is not connected.</p> <p>The numeric values that correspond to the above-mentioned values are as follows:</p> <table border="1"> <thead> <tr> <th>State</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>No</td><td>0</td></tr> <tr> <td>Yes</td><td>1</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the values <i>Yes</i> or <i>No</i> while indicating the connection state of the user to the virtual desktop. However, the graph of this measure will represent the connection state using the corresponding numeric equivalents of 0 and 1 only.</p> <p>If the value of this measure is <i>Yes</i>, then, you can identify the user who is connected to the desktop using the detailed diagnosis of this measure.</p>	State	Numeric Value	No	0	Yes	1
State	Numeric Value								
No	0								
Yes	1								

The detailed diagnosis of the *Power state of desktop* measure reveals the IP address and operating system of the desktop, the desktop group to which it belongs, the hypervisor on which it operates, and the name of the hypervisor connection.

Time	DNS Name	IP Address	OS Type	Desktop Group Name	Hosted Machine Name	Hosted Server Name	Hypervisor Connection Name
Jan 10, 2011 13:57:22	hypxp64bit.Mas.eGinnovations.com	192.168.10.39	Windows XP Service Pack 2	hyp1	-	-	-

Figure 6.18: The detailed diagnosis of the Power state of desktop measure

6.5.6 Connectivity to Virtual Desktop Test

Sometimes, a virtual desktop could be in a powered-on state, but the failure of the virtual desktop operating system or any fatal error in its operations could have rendered the desktop inaccessible to Delivery Controller, and consequently, to users. In order to enable administrators to promptly detect such 'hidden' anomalies, the eG agent periodically runs a connectivity check on each virtual desktop using the **Desktop Connectivity Check** test, and reports whether the virtual desktop is accessible over the network or not.

This test is disabled by default. To enable the test, go to the **ENABLE / DISABLE TESTS** page using the menu sequence : Agents -> Tests -> Enable/Disable, pick the *Citrix Delivery Controller 5.x* as the **Component type**, set *Performance* as the **Test type**, choose this test from the disabled tests list, and click on the < button to move the test to the **ENABLED TESTS** list. Finally, click the **Update** button.

Target of the test : A Citrix Delivery Controller 5.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for every virtual desktop managed by the monitored Delivery Controller.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port used by the DDC. The default port number is 80.
Report by Groupname	By default, this flag is set to Yes , indicating that this test reports a set of measures for every <i>desktopgroup:virtualdesktop</i> combination, by default. To ensure that this test reports a set of measures for every <i>virtualdesktop</i> alone, set this flag to No .
Report by Controllername	By default, this flag is set to Yes . This implies that every <i>desktopgroup:virtualdesktop</i> pair for which this test reports metrics will be prefixed by the controllername as well. Every descriptor will hence be of the following format by default: <i>Controllername->desktopgroup:virtualdesktop</i> . If you want to remove the <i>controllername</i> prefix from the descriptors, then, set this flag to No .
ReportUnavailability	By default, this flag is set to No . This implies that, by default, the test will not report the unavailability of network connection to any virtual desktop. In other words, if the

Parameter	Description
	Network availability of <i>desktopmeasure</i> of this test registers the value 0 for any virtual desktop, then, by default, this test will not report any measure for that virtual desktop; under such circumstances, the corresponding virtual desktop name will not appear as a descriptor of this test. You can set this flag to Yes , if you want the test to report and alert you to the unavailability of the network connection to a virtual desktop.
Packetsize	The size of packets used for the test (in bytes)
Packetcount	The number of packets to be transmitted during the test.
Timeout	How long after transmission should a packet be deemed lost (in seconds).
PacketInterval	Represents the interval (in milliseconds) between successive packet transmissions during the execution of the network test for a specific target.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Average delay	Indicates the average delay between transmission of packet to a virtual desktop and receipt of the response to the packet at the source.	Secs	An increase in network latency could result from misconfiguration of the router(s) along the path, network congestion, retransmissions at the network, etc.
Minimum delay	The minimum time between transmission of a packet and receipt of the response back.	Secs	A significant increase in the minimum round-trip time is often a sure sign of network congestion.
Packet loss	Indicates the percentage of packets lost during transmission from source to target and back.	Percent	Packet loss is often caused by network buffer overflows at a network router or by packet corruptions over the network.
Network availability of desktop	Indicates whether the network connection is available or not.	Percent	A value of 100 indicates that the virtual desktop is connected. The value 0 indicates that the desktop is not connected. Typically, the value 100 corresponds to a Packet loss of 0.

Chapter 6: Citrix Delivery Controller v7 Monitoring Using eG Enterprise?

Citrix Delivery Controller 7.x is the latest release from Citrix represents the merging of the XenApp and XenDesktop technologies into one cohesive package that's built on the same back-end components. Previously, XenApp servers were running on the Citrix Independent Management Architecture. Delivery Controller 7 however is built on the Citrix FlexCast Management Architecture. This architecture is made up out of Delivery Controllers and Agents. XenDesktop 7 supports two types of Delivery Agents: one for Windows Server OS machines and one for Windows Desktop OS machines. As shown in the diagram below, both Delivery Agents communicate with the same set of Delivery Controllers and share the common management infrastructure in Delivery Controller 7. This infrastructure consists of the following core components:

- **Receiver** provides users with self-service access to published resources.
- **StoreFront** authenticates users to site(s) hosting resources and manages stores of desktops and applications that users access.
- **Studio** is a single management console that enables you to configure and manage your deployment. Studio provides various wizards to guide you through the process of setting up an environment, creating workloads to host applications and desktops, and assigning applications and desktops to users.
- **Delivery Controller** distributes applications and desktops, manages user access, and optimizes connections to applications. Each site will have one or more delivery controllers.
- **Server OS Machines** are the “XenApp” replacement – these are VMs or physical machines based on the Windows Server operating system used for delivering applications or hosted shared desktops to users.
- **Desktop OS Machines** are the “XenDesktop” replacement – these are VMs or physical machines based on the Windows Desktop operating system used for delivering personalized desktops to users, or applications from desktop operating systems.

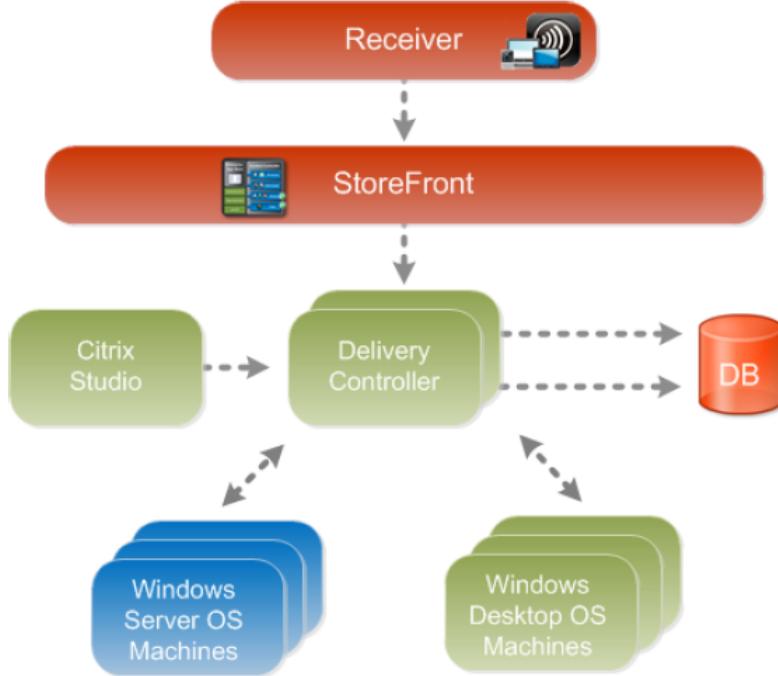


Figure 6.19: The Delivery Controller 7 architecture

Since these components closely co-ordinate with each other to deliver desktops and applications to end-users, a problem with any of these core components - say, the unavailability of StoreFront to authorize user logins, the failure of the broker service, performance bottlenecks with the hypervisor, resource-intensive user sessions to the Server OS machines, snags in the internal operations of the Desktop OS machines - can significantly impact the user experience with Delivery Controller 7. Therefore, to ensure a high-quality user experience with the application/desktop delivery service, administrators should closely monitor each component of the Delivery Controller 7 infrastructure, proactively capture performance dips, and accurately isolate where the root-cause of the problem lies - is it with StoreFront? Is it with the delivery controller? Is it with the Server OS machines? Is it with the virtualized platform? Or is it with the Desktop OS machines? This is where eG Enterprise helps!

The eG Enterprise Suite performs end-to-end monitoring of the Delivery Controller 7 infrastructure! Dedicated, web-based monitoring models are offered by eG for each component in the Delivery Controller 7 infrastructure. While the Citrix StoreFront model focuses on the health of StoreFront and promptly captures issues in user authentication, the Delivery Controller component monitors the Delivery Controller (or the Delivery Controller) and reports how well it manages the delivery agents and brokers connections to the Server OS and Desktop OS machines. Moreover the Citrix XenApp model that eG Enterprise provides zooms into the overall performance and problems related to the

Server OS machines (that typically run Citrix XenApp) and helps isolate pain-points. Also, to monitor the resources allocated to and the resource usage of hypervisors and the Desktop OS machines operating on them, eG Enterprise offers a specialized monitoring model per hypervisor (such as Citrix XenServer, VMware vSphere, Microsoft Hyper-V, etc.).

Detailed service topology maps in eG represent how these heterogeneous models interact with each other and how dependencies flow.

In the event of a slowdown, eG's patented virtualization-aware root-cause analysis engine analyzes these dependencies, auto-correlates the performance results captured from the different monitoring models in the light of these dependencies, and accurately diagnoses the source of the slowdown. Proactive email/SMS/web-based alerts are then promptly sent out to administrators to alert them to the potential slowdown and what is causing it. This way, eG Enterprise emerges as the ideal solution for monitoring Citrix XenDesktop 7.

This document deep dives into the Delivery Controller monitoring model that eG Enterprise offers.

Chapter 7: How to Monitor Citrix Delivery Controller 7 Using eG Enterprise?

eG Enterprise adopts an agent-based approach to monitor the Citrix Delivery Controller v7. This approach requires that the eG agent be installed on any DDC in a DDC farm. This agent should then be configured to periodically execute tests to collect a wide variety of performance statistics pertaining to that DDC/farm. To enable the eG agent to collect metrics, a set of pre-requisites should be set in place. These requirements have been explained in the following section.

7.1 Pre-requisites for monitoring the Citrix Delivery Controller 7.x

Typically, to monitor a Citrix Delivery Controller 7.x (and above), every test that the eG agent runs on the controller should be configured with the credentials of a user with the following privileges:

- The *All* scope and *read-only* privileges
- The *Allow log on locally* security privilege on the Delivery Controller host

To assign the aforesaid privileges to a user, do the following:

1. Login to the Citrix Studio console and select the **Administrators** node in the **Configuration** tree structure in the left panel of the console (see Figure 7.1).

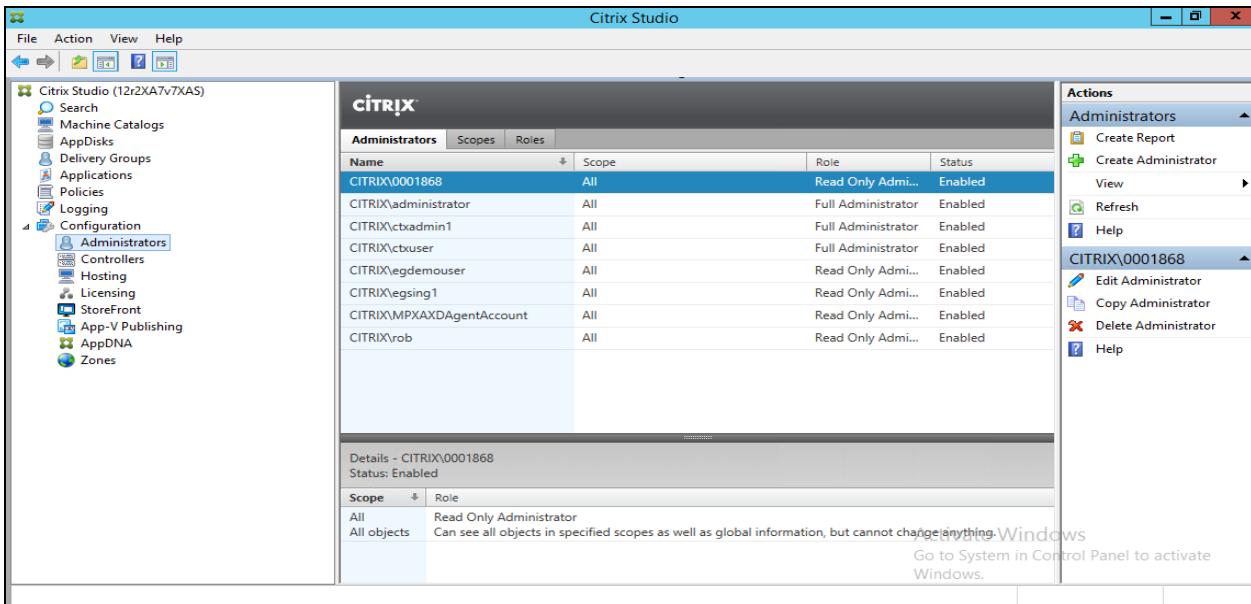


Figure 7.1: Citrix Studio Console

2. To assign the monitoring rights to a user, click on the **Create Administrator** option under the **Administrators** menu in the **Actions** panel of the console. This will open the **Administrator and Scope** page in the **Create Administrator** window (see Figure 7.2).

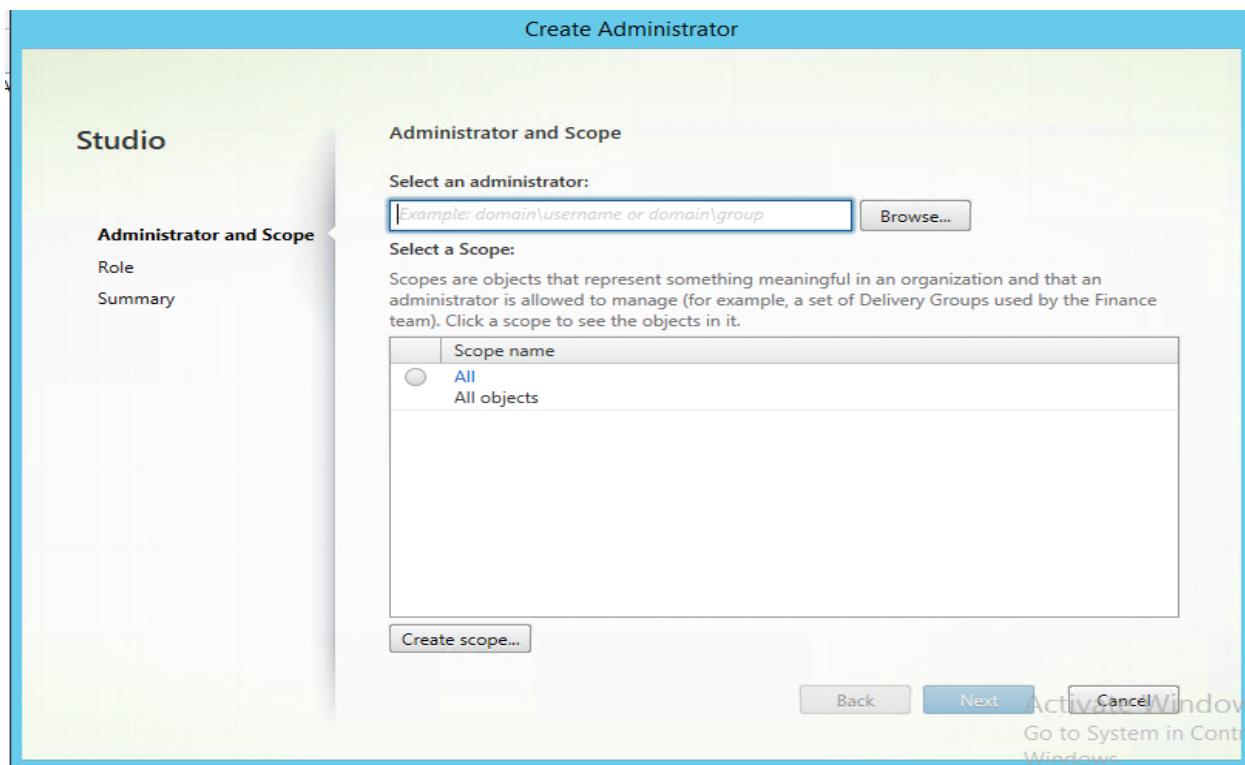


Figure 7.2: The Create Administrator window

3. In the **Administrator and Scope** page that opens, click on the **Browse** button. This will invoke Figure 7.3, using which you can select the user from the domain. Once you selected the user, click **OK** button in Figure 7.3.

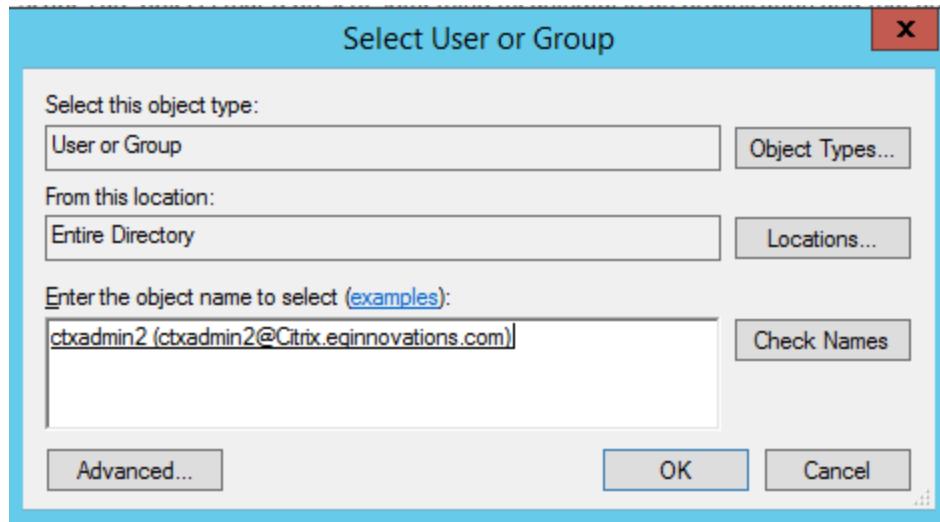


Figure 7.3: Selecting the user from the domain

4. This will lead you to the **Administrator and Scope** page as shown in Figure 7.4, where the chosen user will be displayed. Now, select **All** as the scope for the chosen user, and then click **Next** button in Figure 7.4 to proceed.

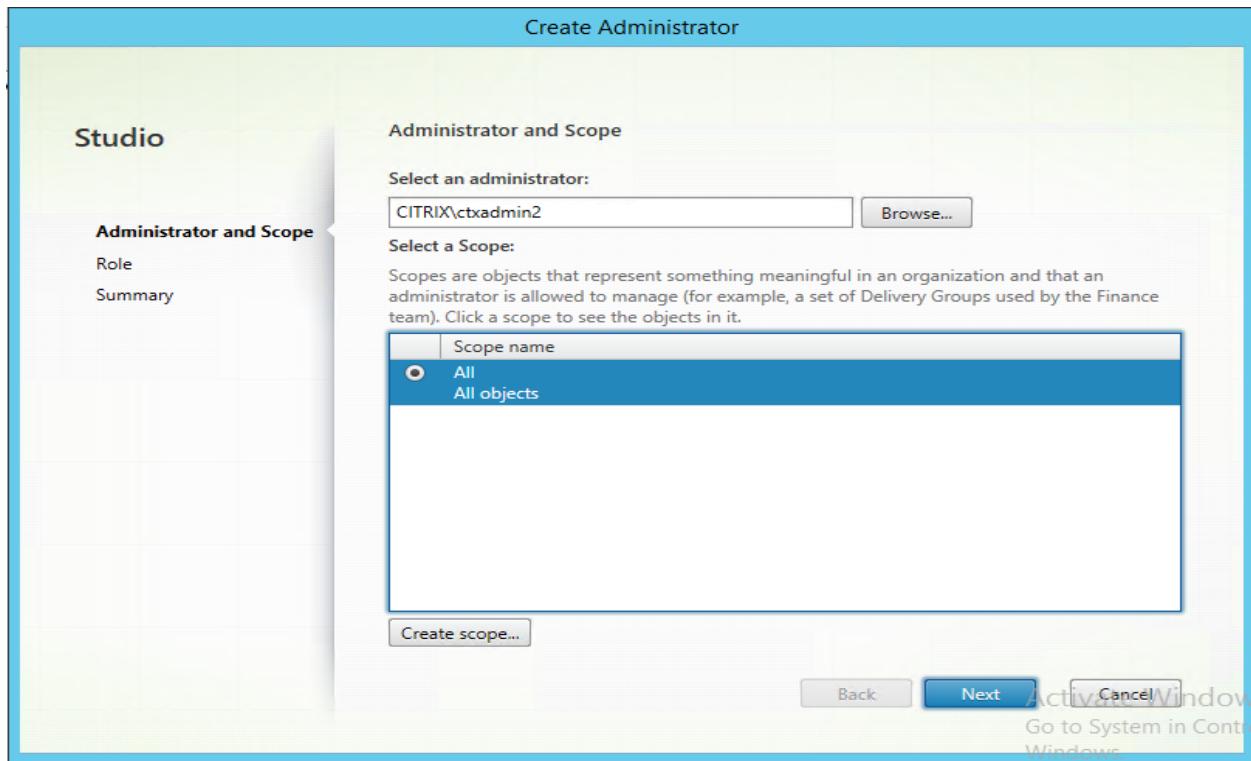


Figure 7.4: Selecting the scope for the chosen user

5. Then, the **Role** page of the **Create Administrator** window appears (see Figure 7.5). In this page, select the **Read Only Administrator** role for the chosen user.

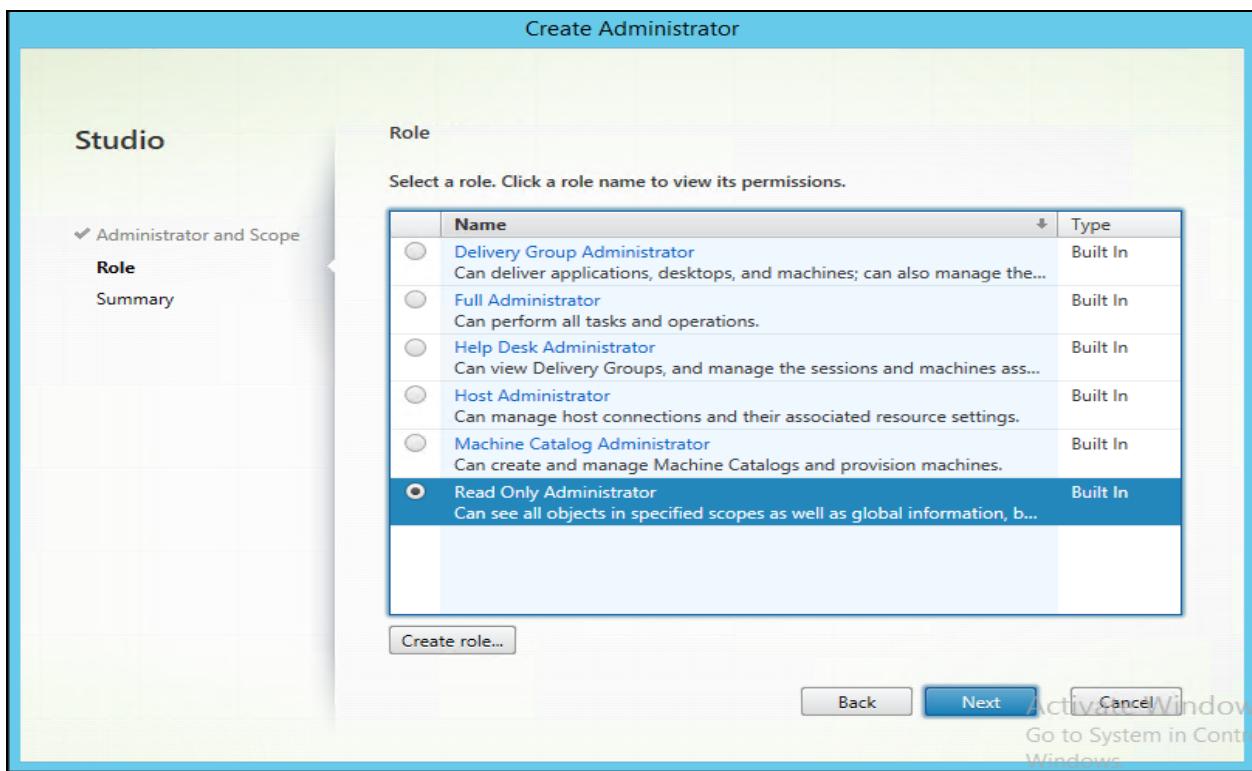


Figure 7.5: Selecting the role for the chosen user

6. Upon clicking the **Next** button in the **Role** page, the **Summary** page will appear, as shown in Figure 7.6. This will display the summary of your settings for the chosen user.

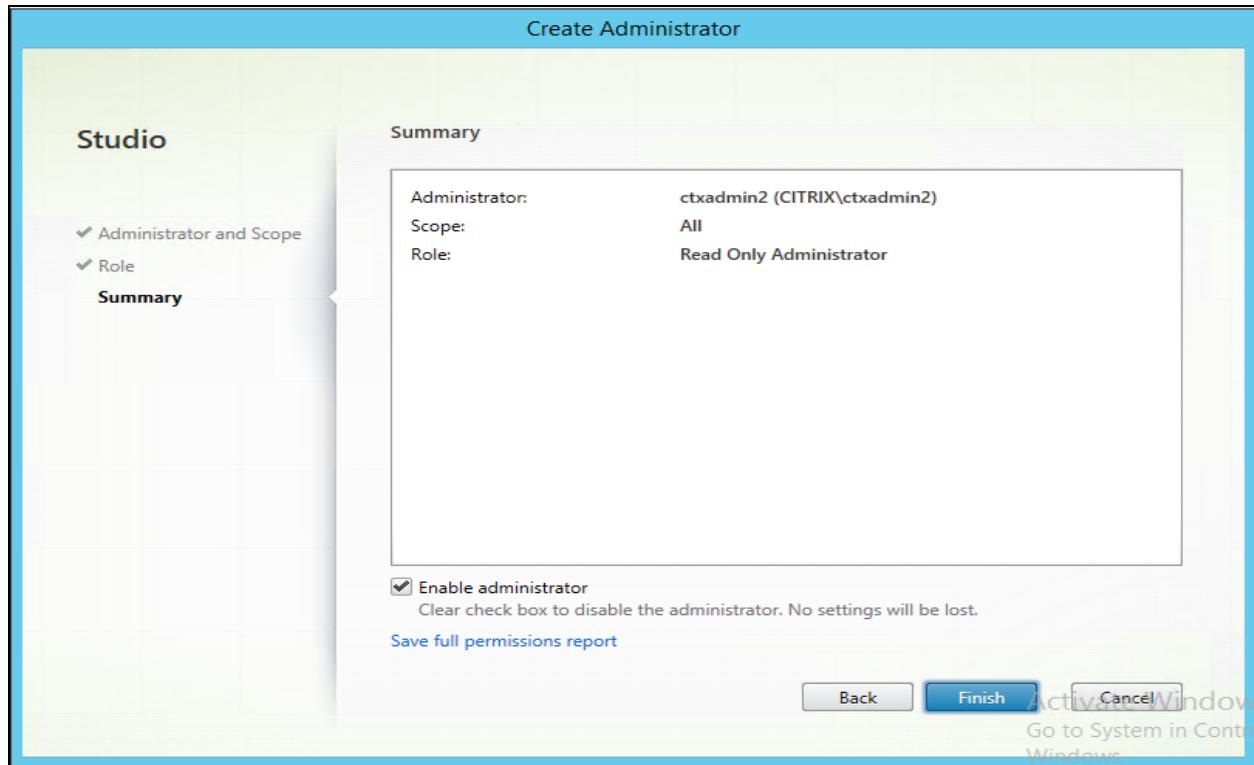


Figure 7.6: The Summary page

7. Finally, click the **Finish** button.
8. Next, proceed to assign the *Allow log on locally* security privilege for the same user on the Delivery Controller host. To achieve this, do the following:
 - Go to the **Control Panel** in the host.
 - From the list of control panel items, click the **Administrative Tools** to view the set of tools available for system administrators and advanced users.
 - Upon selecting the **Local Security Policy** tool in the **Administrative Tools** location, the **Local Security Policy** settings console will appear.
 - Next, navigate to the **User Rights Assignment** node in the **Local Policies** tree in the left panel of the settings console. This will display the security policies corresponding to the user rights in the right panel.
 - Now, select the **Allow log on locally** policy to assign the security privilege to the user (see Figure 7.7).

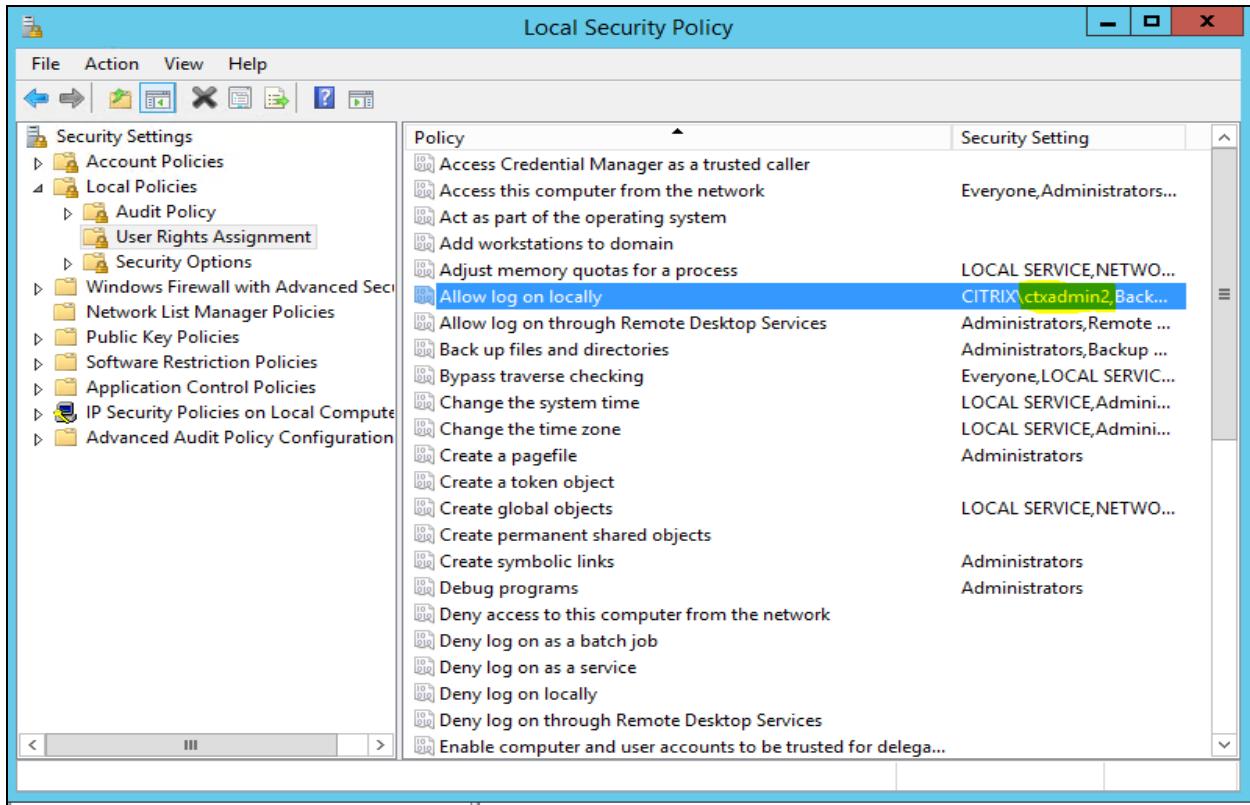


Figure 7.7: Setting the Allow log on locally policy to the user

9. The **eGurkhaAgent** service should run using the *Local system account*.

Once the above-said pre-requisites are fulfilled, manage the Citrix Delivery Controller component using eG administrative interface. The procedure for achieving this is explained in the following section.

7.2 Managing the Citrix Delivery Controller 7.x

eG Enterprise can automatically discover the Citrix Delivery Controller v7 components in the environment and also let you to manually add the Citrix Delivery Controller v7 components using the eG administrative component. To achieve this, follow the steps given below:

1. Log into the eG administrative interface.
2. eG Enterprise cannot automatically discover the Citrix Delivery Controller 7.x. You need to manually add the server using the **COMPONENTS** page (see Figure 7.8) that appears when the Infrastructure -> Components -> Add/Modify menu sequence is followed. Remember that components manually added are managed automatically.

COMPONENT

This page enables the administrator to provide the details of a new component

Category	Component type
All	Citrix Delivery Controller 7.x

Component information

Host IP/Name	192.168.10.1
Nick name	citdelcon7
Port number	80

Monitoring approach

Agentless	<input type="checkbox"/>
Internal agent assignment	<input checked="" type="radio"/> Auto <input type="radio"/> Manual
External agents	192.168.9.90

Add

Figure 7.8: Adding a Citrix Delivery Controller 7.x

3. Specify the **Host IP** and the **Nick name** of the Citrix Delivery Controller 7.x server in Figure 7.8. Then click the **Add** button to register the changes.
4. When you attempt to sign out, a list of unconfigured tests appears (see Figure 7.9).

List of unconfigured tests for 'Citrix Delivery Controller 7.x'		
Performance		citdelcon7:80
Applications	Brokering Machines	Citrix Machine Creation Service Tasks
Citrix XML Access	Controller Details	Controller Service Details
Delivery Groups	Hypervisor Details	Load Evaluator Index
Login Details	Machine Catalog Details	Session and Application States
Site Details		

Figure 7.9: List of tests to be configured for the Citrix Delivery Controller 7.x

5. Click on the **Brokering Machines** test to configure it. To know how to configure the test, refer to Section 8.4.3.

6. Once you configured the **Brokering Machines** test, try to signout of the eG administrative interface. Now, you will be prompted to configure the **Citrix XML Access** test. Click on the test to configure it. To know how to configure the test, refer to Section 8.3.8.
7. Finally, signout of the eG administrative interface.

Chapter 8: Monitoring Delivery Controller 7.x

Delivery Controller 7 integrates Citrix XenApp and VDI desktop virtualization technologies into a unified architecture that enables a scalable, simple, efficient, and manageable solution for delivering Windows applications and desktops. Figure 8.1 depicts the architecture of the Delivery Controller 7.

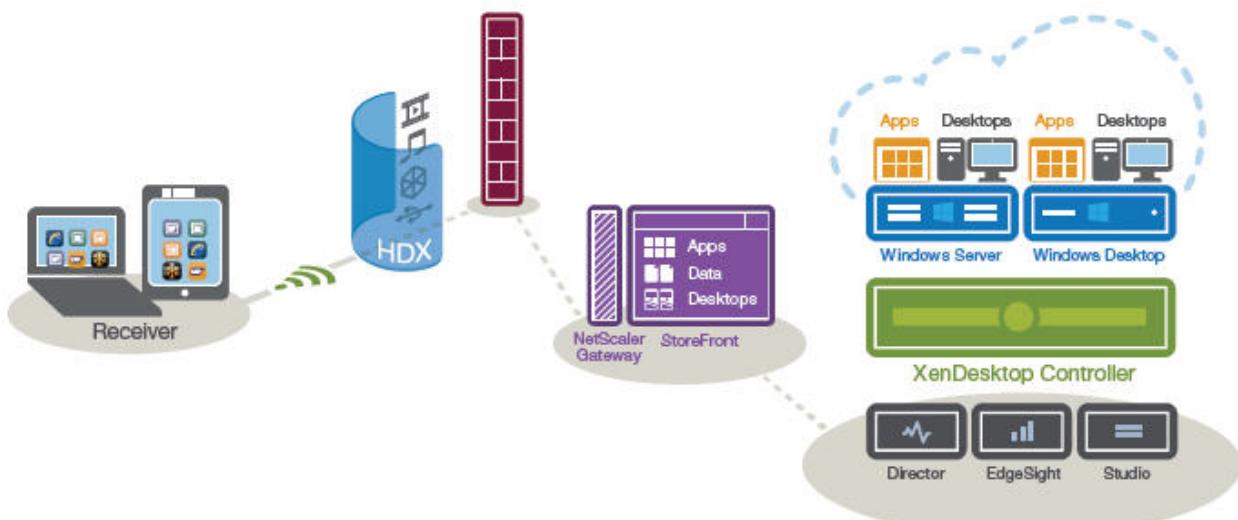


Figure 8.1: The Delivery Controller 7 architecture

eG Enterprise offers a 100% web based Delivery Controller monitoring model to monitor the Delivery Controller 7 (or above) continuously and to proactively alert administrators to the potential issues in its performance.

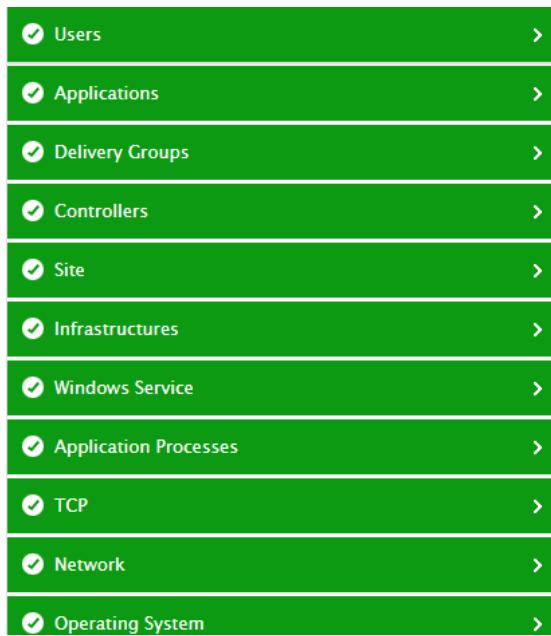


Figure 8.2: Layer model of the Delivery Controller 7 server

Note:

This monitoring model reports metrics for only a single Delivery Controller in a Site. For a site-wide overview of performance, use the Citrix XA/XD Site monitoring model. To know how to monitor a Site, refer to the Monitoring Citrix XA-XD Site document.

The metrics mapped to every layer of this model enable administrators to find quick and accurate answers to the following performance queries:

- Is the broker able to connect to the hosting server?
- Is any hosting server in the maintenance mode? If so, which one?
- Have any controllers in the site failed? If so, which ones?
- Is the controller being monitored operating without glitches?
- Are any controllers in the farm in a powered-off state? If so, which ones?
- Is the controller being monitored in a powered-on/off state currently?
- Are the critical services running across the site? Are they inactive on any controller in the site? If so, which ones?
- Are the critical site services running on the controller being monitored?
- How healthy are the interactions between the broker's MS SQL database and critical Citrix services such as the Broker service, the Configuration service, the Configuration Logging service, the Host service, the AD Identity service, the Machine Creation service, the Citrix Delegated

Admin service, the Storefront service, the Environment Test service, the Monitor service and the Machine Identity service? Is any service unable to access the database, or is any service experiencing slowdowns while executing database transactions? Which one of these services is in an abnormal state currently?

- Have the broker's logs captured any errors/warnings recently?
- Is any machine unable to register with the broker? If so, which one?
- How many catalogs have been configured on the broker? What are they? What is the type of each catalog?
- How many machines in each catalog have been assigned to users, and how many are unassigned?
- Does any catalog consist of machines that do not belong to any delivery group?
- Is the License server available on the site?
- Is the broker able to connect to the SQL database server?
- Is any delivery group in maintenance mode?
- Is any delivery group unavailable?
- Are there adequate idle machines in every delivery group, or is any delivery group over-utilized?
- Have any machines disconnected from their delivery groups? Which delivery groups have such disconnected machines?
- Does any delivery group consist of unregistered machines?
- Which delivery group is managing CPU-intensive machines? Which desktops are these? Which controller is managing these desktop groups?
- Are too many desktops in a desktop group experiencing network latencies?
- Did the connection attempt to any machine fail recently? If so, which machine is this? Which delivery group and controller are managing this machine?
- Are any machines in a group powered off currently?
- Is the broker overloaded with sessions?
- Have published applications been accessed in any session?
- Have too many user sessions disconnected from the broker?
- Are too many sessions to the machines logging out?

- Is any machine in an Unavailable state currently?
- Is the virtual desktop agent unavailable on any machine?
- Is any machine in the maintenance mode?

Since the last 5 layers of the monitoring model have already been dealt with in the *Monitoring Unix and Windows Servers* document, let us proceed to look at the remaining layers of Figure 8.2.

8.1 The Infrastructures Layer

Use the test mapped to this layer to determine connectivity issues (if any) between the broker and the hosting platform.



Figure 8.3: The tests mapped to the Infrastructures layer

8.1.1 Hypervisor Details Test

This test reports the status of the connection between the Delivery Controller and each server that hosts the machines. In the absence of a healthy connection between the two, the broker may not be able to provision machines on-demand.

If users complain of any delay in the servicing of their machine requests, you may want to use this test to check the connection status between the broker and the server hosting that machine, so that connection errors (if any) can be promptly detected.

Target of the test : A Citrix Delivery Controller 7.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for each broker that is to be monitored.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.

Parameter	Description
Port	Refers to the port at which the specified host listens to.
Username	<p>In order to monitor the target Delivery Controller 7, eG requires a special user with the following privileges;</p> <ul style="list-style-type: none"> • The <i>All</i> scope and <i>read-only</i> privileges • The <i>Allow log on locally</i> security privilege on the Delivery Controller host <p>The steps for assigning such privileges to a user are discussed in the How to Monitor Citrix Delivery Controller 7 Using eG Enterprise? chapter. Specify the name of such a user, here.</p>
Password	Specify the password for the user specified in the Username text box, here.
Confirm Password	Confirm the Password by retyping it here.
Domain	Here, specify the domain to which the user specified in the Username text box belongs to.
Detailed Diagnosis	<p>To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Broker's connection state to hypervisor	Indicates the status of the connection between the broker and this hosting server.		<p>This test reports one of the following values to indicate the status of the connection between the broker and a hosting server:</p> <ul style="list-style-type: none"> • On

Measurement	Description	Measurement Unit	Interpretation												
			<ul style="list-style-type: none"> • InMaintenanceMode • Unavailable <p>The numeric values that correspond to the above-mentioned states are as follows:</p> <table border="1"> <thead> <tr> <th>State</th><th>Numeric Value</th><th>Description</th></tr> </thead> <tbody> <tr> <td>On</td><td>1</td><td>Indicates that the broker is in contact with the hypervisor</td></tr> <tr> <td>InMaintenanceMode</td><td>2</td><td>Indicates that the hosting server (e.g., XenServer, Hyper-V) through which machines are managed, is under maintenance</td></tr> <tr> <td>Unavailable</td><td>3</td><td>Indicates that the broker is unable to contact the hypervisor</td></tr> </tbody> </table>	State	Numeric Value	Description	On	1	Indicates that the broker is in contact with the hypervisor	InMaintenanceMode	2	Indicates that the hosting server (e.g., XenServer, Hyper-V) through which machines are managed, is under maintenance	Unavailable	3	Indicates that the broker is unable to contact the hypervisor
State	Numeric Value	Description													
On	1	Indicates that the broker is in contact with the hypervisor													
InMaintenanceMode	2	Indicates that the hosting server (e.g., XenServer, Hyper-V) through which machines are managed, is under maintenance													
Unavailable	3	Indicates that the broker is unable to contact the hypervisor													

Measurement	Description	Measurement Unit	Interpretation						
			<p>Note:</p> <p>By default, this measure reports the above-mentioned States while indicating the connection status of the broker and the hypervisor. However, in the graph of this measure, the same will be represented using the corresponding numeric equivalents – 1 to 3 – only.</p> <p>The detailed diagnosis capability of this measure if enabled, reveals the connection name, connection type, Hypervisor address, the controller and the user who is accessing the hypervisor.</p>						
Is Broker's connection to hypervisor in maintenance mode?	Indicates whether the connection between the broker and the hosting server is in maintenance mode.		<p>This measure reports a value Yes if the connection between the broker and the hosting server is in maintenance mode and No if otherwise.</p> <p>The numeric values corresponding to the above-mentioned measure values are as follows:</p> <table border="1"> <thead> <tr> <th>Measure Value</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Yes</td><td>1</td></tr> <tr> <td>No</td><td>0</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned Measure Values while indicating whether the connection between the broker and the hosting server is in maintenance mode. However, the graph of this measure will be represented using the corresponding numeric equivalents i.e., 0 or 1 only.</p>	Measure Value	Numeric Value	Yes	1	No	0
Measure Value	Numeric Value								
Yes	1								
No	0								
Is Broker's connection to hypervisor in persistent?	Indicates whether/not the connection is persistent between		<p>This measure reports a value Yes if the connection between the broker and the hosting server is persistent and No if otherwise.</p> <p>The numeric values corresponding to the above-</p>						

Measurement	Description	Measurement Unit	Interpretation						
	the broker and the hosting server.		<p>mentioned measure values are as follows:</p> <table border="1"> <thead> <tr> <th>Measure Value</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Yes</td><td>1</td></tr> <tr> <td>No</td><td>0</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned Measure Values while indicating whether the connection between the broker and the hosting server is persistent. However, the graph of this measure will be represented using the corresponding numeric equivalents i.e., 0 or 1 only.</p>	Measure Value	Numeric Value	Yes	1	No	0
Measure Value	Numeric Value								
Yes	1								
No	0								
Is local storage caching enabled?	Indicates whether the local storage caching is enabled or not.		<p>This measure reports a value Yes if the local storage caching capability is enabled and No if otherwise.</p> <p>The numeric values corresponding to the above-mentioned measure values are as follows:</p> <table border="1"> <thead> <tr> <th>Measure Value</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Yes</td><td>1</td></tr> <tr> <td>No</td><td>0</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned Measure Values while indicating whether the local storage caching capability is enabled. However, the graph of this measure will be represented using the corresponding numeric equivalents i.e., 0 or 1 only.</p>	Measure Value	Numeric Value	Yes	1	No	0
Measure Value	Numeric Value								
Yes	1								
No	0								
Is provisioning service used to create VMs?	Indicates whether/not the provisioning service is used to create provisioned machines.		<p>This measure reports a value Yes if the provisioning service is used to create provisioned machines and No if otherwise.</p> <p>The numeric values corresponding to the above-mentioned measure values are as follows:</p>						

Measurement	Description	Measurement Unit	Interpretation						
			<table border="1"> <thead> <tr> <th>Measure Value</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Yes</td><td>1</td></tr> <tr> <td>No</td><td>0</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned Measure Values while indicating whether the provisioning service is used to create provisioned machines. However, in the graph of this measure, the same will be represented using the corresponding numeric equivalents i.e., 0 or 1 only.</p>	Measure Value	Numeric Value	Yes	1	No	0
Measure Value	Numeric Value								
Yes	1								
No	0								
Is hypervisor connection in ready state?	Indicates whether/not the connection between the hosting server and the delivery controller is ready.		<p>The numeric values corresponding to the above-mentioned measure values are as follows:</p> <table border="1"> <thead> <tr> <th>Measure Value</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Yes</td><td>1</td></tr> <tr> <td>No</td><td>0</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned Measure Values while indicating whether the connection is ready between the hosting server and the delivery controller. However, in the graph of this measure, the same will be represented using the corresponding numeric equivalents only.</p>	Measure Value	Numeric Value	Yes	1	No	0
Measure Value	Numeric Value								
Yes	1								
No	0								
Machines associated with this hypervisor connection	Indicates the number of machines associated with the connection between the hosting server and the delivery controller.	Number							

The detailed diagnosis of the *Broker's connection state to hypervisor* measure reveals the connection name, connection type, Hypervisor address, the controller and the user who is accessing the hypervisor.

The screenshot shows the 'Detailed Diagnosis' interface for the 'Broker's connection state to hypervisor' measure. The interface includes a header with tabs: Detailed Diagnosis, Measure Graph, Summary Graph, Trend Graph, Fix History, and Fix Feedback. The 'Detailed Diagnosis' tab is selected. The main area displays a table of connection details. The table has columns: TIME, CONNECTION NAME, CONNECTION TYPE, HYPERVISOR ADDRESS, PREFERRED CONTROLLER, USERNAME, and SCOPES. The data in the table is as follows:

TIME	CONNECTION NAME	CONNECTION TYPE	HYPERVISOR ADDRESS	PREFERRED CONTROLLER	USERNAME	SCOPES
2013-09-18 02:31:17	VMware-VC	VMWare Virtualization	https://WIN-LJ27BDNN4IQ/sdk	CITRIX\EXCL-1	administrator	-
2013-09-18 02:21:25	VMware-VC	VMWare Virtualization	https://WIN-LJ27BDNN4IQ/sdk	CITRIX\EXCL-1	administrator	-
2013-09-18 02:11:54	VMware-VC	VMWare Virtualization	https://WIN-LJ27BDNN4IQ/sdk	CITRIX\EXCL-1	administrator	-
2013-09-18 02:01:12	VMware-VC	VMWare Virtualization	https://WIN-LJ27BDNN4IQ/sdk	CITRIX\EXCL-1	administrator	-
2013-09-18 01:51:06	VMware-VC	VMWare Virtualization	https://WIN-LJ27BDNN4IQ/sdk	CITRIX\EXCL-1	administrator	-
2013-09-18 01:41:30	VMware-VC	VMWare Virtualization	https://WIN-LJ27BDNN4IQ/sdk	CITRIX\EXCL-1	administrator	-

Figure 8.4: The detailed diagnosis of the Broker's connection state to hypervisor measure

8.2 The Site Layer

Using the test mapped to this layer, you can monitor the availability and responsiveness of the license server in the site, the session related information and the number of brokers managed by this site. Additionally, the status of AppDisk and zones in the site can also be monitored by this layer. The details on tags utilization are also revealed.

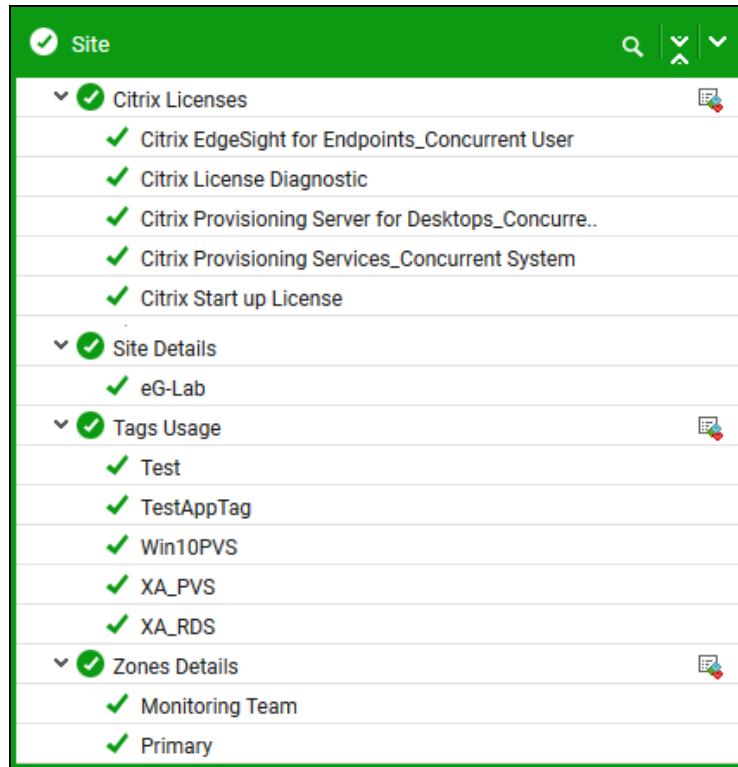


Figure 8.5: The tests mapped to the Site layer

8.2.1 Site Details Test

Deployment of XenDesktop in a single geographical location may be called as a site. A site therefore typically comprises of one/more brokers that point to the same database, a database server, a license server, a Citrix Studio, Citrix StoreFront, hypervisors, virtual machines, and XenApp servers on the server-side, and receivers at the client side.

This test promptly alerts administrators to the following anomalies related to the monitored site:

- The sudden non-availability of the license server in the site;
- Poor responsiveness of the license server;
- Are the active sessions, desktop sessions and application sessions adequate?;
- Are there any brokers that are currently inactive in this site?

Target of the test : A Citrix Delivery Controller 7.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for the XenDesktop 7 server site that is to be monitored.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the specified host listens to.
Username	<p>In order to monitor the target Delivery Controller 7, eG requires a special user with the following privileges:</p> <ul style="list-style-type: none"> • The <i>All</i> scope and <i>read-only</i> privileges • The <i>Allow log on locally</i> security privilege on the Delivery Controller host <p>The steps for assigning such privileges to a user are discussed in the How to Monitor Citrix Delivery Controller 7 Using eG Enterprise? chapter. Specify the name of such a user, here.</p>
Password	Specify the password for the user specified in the Username text box, here.
Confirm Password	Confirm the Password by retyping it here.
Domain	Here, specify the domain to which the user specified in the Username text box belongs to.
Detailed Diagnosis	<p>To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
License server	Indicates the availability	Percent	If the license server is available, a

Measurement	Description	Measurement Unit	Interpretation
availability	of the license server in this site.		<p>value of 100 is shown and if the license server is not available, a value of 0 is shown.</p> <p>Since the license server is responsible for managing the licenses for all the components of XenDesktop, the non-availability of the license server, should have serious repercussions on the performance of the XenDesktop site. However, such adversities are averted by the 90-day grace period that XenDesktop embeds; this allows the system to function normally for 90 days if the license server becomes unavailable.</p> <p>Moreover, if this measure reports that the license server is unavailable, then you may instantly want to know which license server the XenDesktop is communicating with. At this juncture, you can use the detailed diagnosis of this measure (if enabled) to ascertain the name of the license server and the port at which it listens.</p>
License server response time	Indicates the time taken by the broker to establish a connection with the license server.	Secs	Ideally, the response time should be low.
Active sessions	Indicates the total number of sessions that are currently active on this site.	Number	This measure is a good indicator of the load on this site.
Is DNS resolution enabled?	Indicates whether the DNS resolution is enabled or not on this site.		The values and their corresponding numeric values that this measure could report are:

Measurement	Description	Measurement Unit	Interpretation						
			<table border="1"> <thead> <tr> <th>Measure value</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>No</td><td>0</td></tr> <tr> <td>Yes</td><td>1</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the values Yes or No while indicating whether DNS resolution is enabled or not on this site. However, in the graph of this measure, the same will be represented using the corresponding numeric equivalents of 0 and 1 only.</p>	Measure value	Numeric Value	No	0	Yes	1
Measure value	Numeric Value								
No	0								
Yes	1								
Is secure ICA required?	Indicates whether/not a secure ICA is required for this site.		<p>By default, client-server communications are obfuscated at a basic level through the SecureICA feature, which can be used to encrypt the ICA protocol.</p> <p>Plug-ins use the ICA protocol to encode user input (keystrokes and mouse clicks) and address it to a server farm for processing. Server farms use the ICA protocol to format application output (display and audio) and return it to the client device.</p> <p>You can increase the level of encryption for the ICA protocol when you publish a resource or after you publish a resource.</p> <p>In addition to situations when you want to protect against internal security threats, such as eavesdropping, you may want to use ICA encryption in the following situations:</p> <ul style="list-style-type: none"> • You need to secure communications from devices that use Microsoft 						

Measurement	Description	Measurement Unit	Interpretation						
			<p>DOS or run on Win16 systems</p> <ul style="list-style-type: none"> • You have older devices running plug-in software that cannot be upgraded to use SSL • As an alternative to SSL/TLS encryption, when there is no risk of a “man-in-the-middle” attack <p>The values that this measure can report and their corresponding numeric values are:</p> <table border="1"> <thead> <tr> <th>Measure value</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>No</td><td>0</td></tr> <tr> <td>Yes</td><td>1</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the values Yes or No while indicating whether a secure ICA is required for this site or not. However, in the graph of this measure, the same will be represented using the corresponding numeric equivalents of 0 and 1 only.</p>	Measure value	Numeric Value	No	0	Yes	1
Measure value	Numeric Value								
No	0								
Yes	1								
Are trust requests sent to the XML service port?	Indicates whether/not trust requests were sent to the XML service.		<p>Trusting requests sent to the XML Service means:</p> <ul style="list-style-type: none"> • Smooth Roaming works when connecting with the Web Interface using pass-through or smart card authentication, and when connecting with the online plug-in using smart card authentication or the Kerberos pass-through option. 						

Measurement	Description	Measurement Unit	Interpretation						
			<ul style="list-style-type: none"> For example, you can use workspace control to assist health-care workers in a hospital using smart cards, who need to move quickly among workstations and be able to pick up where they left off in published applications. XenApp can use the information passed on from Access Gateway (Version 4.0 or later) to control application access and session policies. This information includes Access Gateway filters that can be used to control access to published applications and to set XenApp session policies. If you do not trust requests sent to the XML Service, this additional information is ignored. <p>The values that this measure can report and their corresponding numeric values are:</p> <table border="1"> <thead> <tr> <th>Measure value</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>No</td><td>0</td></tr> <tr> <td>Yes</td><td>1</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the values Yes or No while indicating whether/not trust requests were sent to the XML service. However, in the graph of this measure, the same will be represented using the corresponding</p>	Measure value	Numeric Value	No	0	Yes	1
Measure value	Numeric Value								
No	0								
Yes	1								

Measurement	Description	Measurement Unit	Interpretation
			numeric equivalents of 0 and 1 only.
Total controllers on this site:	Indicates the total number of brokers that are configured for this site.	Number	Use the detailed diagnosis of this measure to know which controllers are part of the site.
Is connection leasing enabled?	Indicates whether/not connection leasing is enabled for this site.		To ensure that the Site database is always available, Citrix recommends starting with a fault-tolerant SQL Server deployment by following high availability best practices from Microsoft. However, network issues and interruptions may prevent Delivery Controllers from accessing the database, resulting in users not being able to connect to their applications or desktop. The connection leasing feature supplements the SQL Server high availability best practices by enabling users to connect and reconnect to their most recently used applications and desktops, even when the Site database is not available. Although users may have a large number of published resources available, they often use only a few of them regularly. When you enable connection leasing, each Controller caches user connections to those recently used applications and desktops during normal operations (when the database is available). The leases generated on each Controller are uploaded to the Site database for periodic synchronization to other Controllers on the Site. In addition to leases, each Controller's cache holds application, desktop, icon, and worker information. The lease and related information is stored on each

Measurement	Description	Measurement Unit	Interpretation						
			<p>Controller's local disk. If the database becomes unavailable, the Controller enters leased connection mode and "replays" the cached operations when a user attempts to connect or reconnect to a recently used application or desktop from StoreFront. Connections are cached for a lease period of two weeks. So, if the database becomes unavailable, the desktops and applications that the user launched in the previous two weeks remain accessible to that user through StoreFront. However, desktops and applications that have not been launched during the previous two-week lease period are not accessible when the database is unavailable.</p> <p>Connection leasing is enabled by default.</p> <p>You can turn connection leasing off or on from the PowerShell SDK or the Windows registry.</p> <p>This measure reports the value <i>Yes</i> if connection leasing is enabled for a site and the value <i>No</i> if connection leasing is not enabled for a site.</p> <p>The numeric values that correspond to these measure values are as follows:</p> <table border="1"> <thead> <tr> <th>Measure value</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>No</td><td>0</td></tr> <tr> <td>Yes</td><td>1</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the values <i>Yes</i> or <i>No</i> while indicating</p>	Measure value	Numeric Value	No	0	Yes	1
Measure value	Numeric Value								
No	0								
Yes	1								

Measurement	Description	Measurement Unit	Interpretation						
			<p>whether/not connection leasing is enabled for the site. However, in the graph of this measure, the same will be represented using the corresponding numeric equivalents of 0 and 1 only.</p>						
Is license in grace period?	Indicates whether/not the license for this site is in the grace period.		<p>In previous versions of XenApp and XenDesktop, if the correct licenses are not installed, users will get session rejections via the license policy engine. To avoid this limitation, Citrix introduced a new concept called Supplemental Grace Period (SGP) in XenApp/XenDesktop 7.6. During the SGP, the license policy engine will grant unlimited connections, for about 15 days to allow for fixing the issue. An alarm is activated when the grace period expires, and the Delivery Controller can not checkout licenses to launch sessions from license server. After the expiration of SGP, regular license limits are enforced.</p> <p>If the license for the site is in the grace period, then the value of this measure will be <i>Yes</i>. If the license has not entered the grace period, then the value of this measure will be <i>No</i>.</p> <p>The numeric values that correspond to these measure values are as follows:</p> <table border="1"> <thead> <tr> <th>Measure value</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>No</td><td>0</td></tr> <tr> <td>Yes</td><td>1</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the values <i>Yes</i> or <i>No</i> while indicating</p>	Measure value	Numeric Value	No	0	Yes	1
Measure value	Numeric Value								
No	0								
Yes	1								

Measurement	Description	Measurement Unit	Interpretation						
			whether/not the site license is in the grace period. However, in the graph of this measure, the same will be represented using the corresponding numeric equivalents of 0 and 1 only.						
Is license in out of box grace period?	Indicates whether/not the license grace period for this site has expired.		<p>If the license for the site has lived out its grace period, then the value of this measure will be <i>Yes</i>. If the license grace period has not expired, then the value of this measure will be <i>No</i>.</p> <p>The numeric values that correspond to these measure values are as follows:</p> <table border="1"> <thead> <tr> <th>Measure value</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>No</td><td>0</td></tr> <tr> <td>Yes</td><td>1</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the values <i>Yes</i> or <i>No</i> while indicating whether/not the grace period of the site license has expired. However, in the graph of this measure, the same will be represented using the corresponding numeric equivalents of 0 and 1 only.</p>	Measure value	Numeric Value	No	0	Yes	1
Measure value	Numeric Value								
No	0								
Yes	1								
License grace hours left	Indicates how much time (in hours) is left for the grace period to expire.	Hours	<p>This measure will report a value only if the value of the 'Is license in grace period?' measure is 'Yes'.</p> <p>If the value of this measure is low, then you may want to quickly install additional licenses on the site to ensure that your users receive uninterrupted access to their critical applications and desktops. Because, upon the expiry of the grace period, the Delivery Controllers in the site can not checkout licenses to launch sessions from license server.</p>						

The detailed diagnosis of the *License server availability* measure displays the name of the License server in the site and the port at which it listens. Alongside, the detailed diagnosis displays the desktop model, desktop edition, application model and application edition that is compatible with the license. The date on which the license would finally expire/the last date for renewal of the license is provided in the **REQUIRED SA DATE** column. This information enables administrators to effectively troubleshoot issues with the availability of the License server.

Shows the license server information on this site								
SITE NAME	LICENSE SERVER NAME	LICENSE SERVER PORT	DESKTOP LICENSE EDITION	DESKTOP LICENSE MODEL	APPLICATION LICENSE EDITION	APPLICATION LICENSE MODEL	REQUIRED SA DATE	
Jan 02, 2017 17:12:44		egsite	2K12R2XD711-DC1.egin.local	27000	Platinum Edition	User/Device	XenApp Platinum Edition	9/8/2016 5:30:00 AM

Figure 8.6: The detailed diagnosis of the License server availability measure

The detailed diagnosis of the *Total controllers on the site* measure displays the names of the delivery controllers on this site. For each controller, the detailed diagnosis additionally reveals the machine on which that controller is installed, the total number of desktops managed by the controller, the state of the controller, the version of the controller, the type of operating system, the version of the operating system, the last time at which the controller was active, and the zone to which the controller belongs. This information helps you to identify the controllers that are inactive.

Shows the list of controllers on this site									
MACHINE NAME	DNS NAME	CONTROLLER STATE	TOTAL MACHINES	CONTROLLER VERSION	OS	OS VERSION	LAST ACTIVE TIME	ZONE NAME	
Jan 02, 2017 17:03:32									
EGIN\2K12R2XD711-DC1	2K12R2XD711-DC1.egin.local	Active	4	7.11.0.23	Windows 2012 R2	6.2.9200.0	1/2/2017 5:02:43 PM	Primary	
EGIN\2K12R2-XDC7112	2K12R2-XDC7112.egin.local	Active	3	7.11.0.23	Windows 2012 R2	6.2.9200.0	1/2/2017 5:02:56 PM	Primary	

Figure 8.7: The detailed diagnosis of the Total brokers for this site measure

8.2.2 AppDisk Details Test

Citrix AppDisk, a new application layering technology in XenApp and XenDesktop 7.8, allows IT to package and deliver apps separately from golden images.

AppDisk allows IT to create, deploy and update fewer master images. Instead of installing applications alongside the OS, IT can package and deliver them separately in departmental AppDisks. An AppDisk is either a virtual hard disk or virtual machine disk file, depending on the hypervisor -- either Citrix XenServer or VMware ESXi.

The virtual disks that house the applications act as an independent storage layer that attaches to the base golden image when users boot a XenApp or XenDesktop session. The hypervisor controls the process of attaching the AppDisk's drives to the base image. From the users' perspectives, the apps contained in the AppDisks perform as if they are installed locally on the virtual machine (VM).

If an AppDisk is unable to perform application delivery, then you may want to know if the AppDisk was created properly and is ready for use. This can be ascertained using the **AppDisk Details** test. This test auto-discovers the AppDisks, and for each AppDisk reports the state of the AppDisk and the number of application packages installed on it. Detailed diagnostics provided by this test also reveal which applications are installed on which AppDisk.

Target of the test : A Citrix Delivery Controller 7.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for the Delivery Controller being monitored.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the specified host listens to.
Username	In order to monitor the target Delivery Controller 7, eG requires a special user with the following privileges: <ul style="list-style-type: none"> • The <i>All</i> scope and <i>read-only</i> privileges • The <i>Allow log on locally</i> security privilege on the Delivery Controller host The steps for assigning such privileges to a user are discussed in the How to Monitor Citrix Delivery Controller 7 Using eG Enterprise? chapter. Specify the name of such a user, here.
Password	Specify the password for the user specified in the Username text box, here.
Confirm Password	Confirm the Password by retyping it here.
Domain	Here, specify the domain to which the user specified in the Username text box belongs to.
Detailed Diagnosis	To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be

Parameter	Description
	<p>configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation										
AppDisk state	Indicates the current state of this AppDisk.		<p>The values that this measure reports and their corresponding numeric values are listed in the table below:</p> <table border="1"> <thead> <tr> <th>Measure Value</th> <th>Numeric Value</th> </tr> </thead> <tbody> <tr> <td>Unknown</td> <td>0</td> </tr> <tr> <td>Ready</td> <td>1</td> </tr> <tr> <td>Populating</td> <td>2</td> </tr> <tr> <td>Creating</td> <td>3</td> </tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned Measure Values to indicate the state of an AppDisk. However, in the graph of this measure, the same will be represented using the numeric equivalents.</p>	Measure Value	Numeric Value	Unknown	0	Ready	1	Populating	2	Creating	3
Measure Value	Numeric Value												
Unknown	0												
Ready	1												
Populating	2												
Creating	3												
Number of packages	Indicates the number of application packages available in this AppDisk.	Number	Use the detailed diagnosis of this measure to know which applications are installed on this AppDisk.										

The detailed diagnosis of the *Number of packages* measure lists the applications installed on an AppDisk, the manufacturer of each application, and the application version.

Details of packages		
NAME	MANUFACTURER	VERSION
Dec 22, 2016 13:17:09		
Symantec Endpoint Protection	Symantec Corporation	12.1.6608.6300

Figure 8.8: The detailed diagnosis of the Number of packages measure

8.2.3 Zones Details Test

Deployments that span widely-dispersed locations connected by a WAN can face challenges due to network latency and reliability. One of the means by which these challenges can be mitigated is by configuring zones. Zones can help users in remote regions connect to resources without necessarily forcing their connections to traverse large segments of the WAN. In other words, zones connect users to resources that are closest to them, keeping traffic ‘local’. Using zones allows effective Site management from a single Citrix Studio console, Citrix Director, and the Site database.

A Site always has one primary zone, which should include the central Site database and at least two Delivery Controllers. It can also optionally have one or more satellite zones, which should include one or more VDAs, Controllers, StoreFront servers, and NetScaler Gateway servers.

When a Delivery Controller in a zone (primary/satellite) fails, another one in the same zone will take over. But how does an administrator determine that a failover has occurred in a primary zone? By executing this test at regular intervals, administrators can be promptly alerted if a controller in primary zone fails over to another controller in the same zone. Additionally, this test also scans each zone configured in a site and reports the number of controllers, delivery groups, and machine catalogs in that zone.

Target of the test : A Citrix Delivery Controller 7.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for each zone configured in the Delivery Controller site being monitored.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.

Parameter	Description
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the specified host listens to.
Username	<p>In order to monitor the target Delivery Controller 7, eG requires a special user with the following privileges;</p> <ul style="list-style-type: none"> • The <i>All</i> scope and <i>read-only</i> privileges • The <i>Allow log on locally</i> security privilege on the Delivery Controller host <p>The steps for assigning such privileges to a user are discussed in the How to Monitor Citrix Delivery Controller 7 Using eG Enterprise? chapter. Specify the name of such a user, here.</p>
Password	Specify the password for the user specified in the Username text box, here.
Confirm Password	Confirm thePassword by retying it here.
Domain	Here, specify the domain to which the user specified in the Username text box belongs to.
Detailed Diagnosis	<p>To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Is primary zone?	Indicates whether/not this is the primary zone.		The values that this measure reports and their corresponding numeric values are listed in the table below:

Measurement	Description	Measurement Unit	Interpretation						
			<table border="1"> <thead> <tr> <th>Measure Value</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Yes</td><td>1</td></tr> <tr> <td>No</td><td>0</td></tr> </tbody> </table>	Measure Value	Numeric Value	Yes	1	No	0
Measure Value	Numeric Value								
Yes	1								
No	0								
Has primary zone recently changed?	Indicates whether/not the state of the primary zone changed during the last measurement period.		<p>Note:</p> <p>By default, this measure reports the above-mentioned Measure Values to indicate whether a zone is a primary or a satellite zone. However, in the graph of this measure, the same will be represented using the numeric equivalents.</p> <p>This measure will report a value only if the 'Is primary zone?' measure reports the value 'Yes'.</p> <p>Typically, when a controller in a primary zone fails over to another controller in the same zone in the last measure period, then this measure will report the value Yes. If no failover has occurred in the primary zone between two measure periods, then the value of this measure will be No.</p> <p>The numeric values that correspond to the measure values discussed above are listed in the table below:</p> <table border="1"> <thead> <tr> <th>Measure Value</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Yes</td><td>1</td></tr> <tr> <td>No</td><td>0</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned Measure Values to</p>	Measure Value	Numeric Value	Yes	1	No	0
Measure Value	Numeric Value								
Yes	1								
No	0								

Measurement	Description	Measurement Unit	Interpretation
			indicate whether/not a failover has occurred in the primary zone. However, in the graph of this measure, the same will be represented using the numeric equivalents.
Number of controllers	Indicates the number of controllers in this zone.	Number	Use the detailed diagnosis to know which controllers are in this zone and when each controller was last started.
Number of delivery groups	Indicates the number of delivery groups in this zone.	Number	Use the detailed diagnosis of this measure to know which delivery groups are operating in this zone.
Number of machine catalogs	Indicates the number of machine catalogs in this zone.	Number	Use the detailed diagnosis of this measure to identify the machine catalogs in this zone.

The detailed diagnosis of the *Number of controllers* measure lists the controllers in this zone, their version, their OS details, and the last start and activity time of each controller. A quick look at these details will also indicate if a failover occurred within the zone recently, and if so, which controller failed and which one took over.

Details of controllers						
DNS NAME	MACHINE NAME	CONTROLLER VERSION	OS TYPE	OS VERSION	LAST ACTIVITY TIME	LAST START TIME
Dec 01, 2016 13:02:48						
2K12R2XD711-DC1.egin.local	EGIN\2K12R2XD711-DC1	7.11.0.23	Windows 2012 R2	6.2.9200.0	12/1/2016 6:31:38 PM	11/27/2016 2:00:25 AM

Figure 8.9: The detailed diagnosis of the Number of controllers measure

The detailed diagnosis of the *Number of delivery groups* measure provides the current state and configuration of every delivery group in the zone. .

Details of delivery groups								
DELIVERY GROUP NAME	DESCRIPTION	SESSION SUPPORT	IS ENABLED	IN MAINTENANCE MODE	TOTAL MACHINES	DESKTOP KIND	SECURE ICA REQUIRED	SHU USE
Dec 01, 2016 13:02:48								
Win8-Apdsk1	-	Single Session	True	False	1	Shared	False	True

Figure 8.10: The detailed diagnosis of the Number of delivery groups measure

The detailed diagnosis of the *Number of machine catalogs* measure reveals the catalogs present in the zone and their complete details.

Details of machine catalogs							
CATALOG NAME	DESCRIPTION	SESSION SUPPORT	ALLOCATION TYPE	IS MACHINES ARE PHYSICAL	PERSIST USER CHANGES	PROVISIONING TYPE	SCOPES
Dec 01, 2016 13:02:48							
Linux-VDA	-	Multiple Sessions	Random	Yes	On local disk	Manual	-
Win10	-	Single Session	Static	No	On local disk	Manual	-
Win2k16-AppSrv	-	Multiple Sessions	Random	Yes	On local disk	Manual	-
Win7Base	-	Single Session	Random	No	Discard	Machine Creation Services	-
Win7-VMWare	-	Multiple Sessions	Random	No	Discard	Machine Creation Services	-
Win8-XDBase	-	Single Session	Random	No	Discard	Machine Creation Services	-
Windows8-VMWare	-	Single Session	Random	No	Discard	Machine Creation Services	-

Figure 8.11: The detailed diagnosis of the Number of catalogs measure

8.3 The Controllers Layer

Using the tests mapped to this layer, you can easily determine the following:

- What is the state of each broker?;
- How many machines are registered with each broker?;
- The overall health of the broker in terms of how error-prone it is;
- The issues in the communication between the Citrix Configuration Service and the MS SQL database;
- Errors in transactions executed by the Citrix Host Service on the broker's database;
- How well the Citrix AD Identity Service interacts with the broker's MS SQL database?;
- The health of transactions performed by the Machine Creation Service on the broker's database;
- Whether the Citrix Machine Identity Service is able to connect to the broker's database, and how well the database is managing the load generated by the service;
- The load handling ability of the Citrix XML Service that is responsible for communication between the Web Interface component and the XenDesktop site;

Since most of the tests mapped to this layer are already discussed in the *Monitoring Citrix Delivery Controller v3/4* and *Monitoring Citrix Delivery v5* chapters, let us now proceed to discuss those tests that haven't been dealt before.

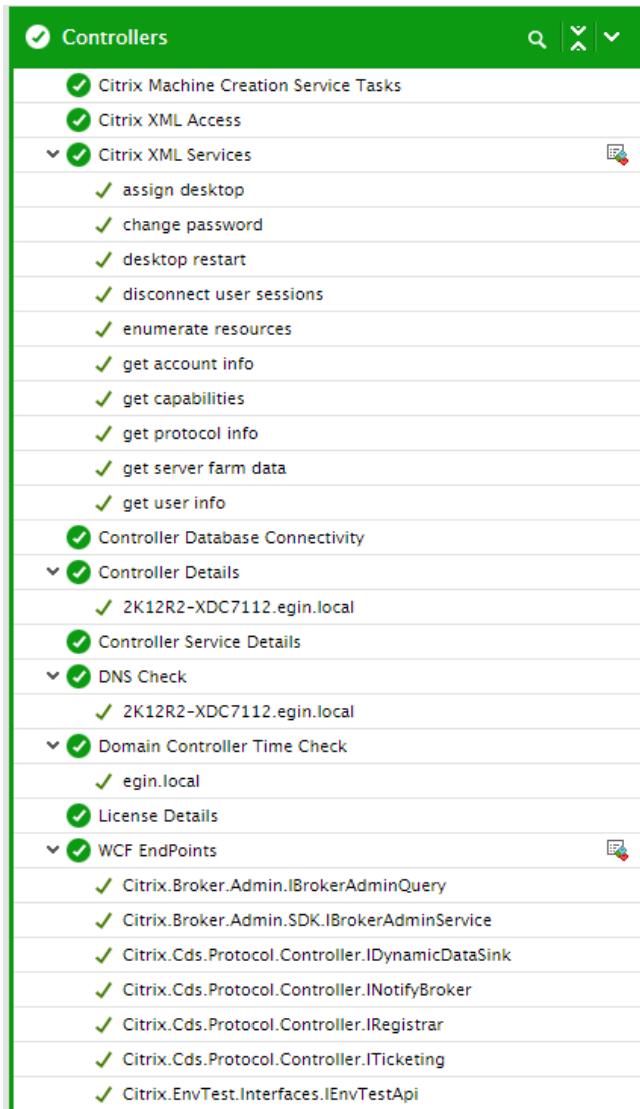


Figure 8.12: The tests mapped to the Controllers layer

8.3.1 Controller Details Test

Controllers are server machines running instances of the broker service. The broker service is responsible for the brokering of user sessions to desktops or applications, and for power management of the underlying machines. An operational site must contain at least one Controller.

This test auto-discovers the Desktop Delivery Controllers configured within a site, and reports the current status of each controller and the count of machines registered with every controller. The test also reveals the current status of the licensing server on each controller. This helps administrators to re-allocate additional set of licenses on the Citrix License server and restart licensing services if the .

Target of the test : A Citrix Delivery Controller 7.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for every controller configured within a site.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the specified host listens to.
Username	<p>In order to monitor the target Delivery Controller 7, eG requires a special user with the following privileges;</p> <ul style="list-style-type: none"> • The <i>All</i> scope and <i>read-only</i> privileges • The <i>Allow log on locally</i> security privilege on the Delivery Controller host <p>The steps for assigning such privileges to a user are discussed in the How to Monitor Citrix Delivery Controller 7 Using eG Enterprise? chapter. Specify the name of such a user, here.</p>
Password	Specify the password for the user specified in the Username text box, here.
Confirm Password	Confirm the Password by retyping it here.
Domain	Here, specify the domain to which the user specified in the Username text box belongs to.
Detailed Diagnosis	<p>To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation										
Controller state	Indicates the current state of this desktop delivery controller (broker).	Number	<p>This test reports one of the following values to indicate the current state of a desktop delivery controller:</p> <ul style="list-style-type: none"> • Active – Indicates that the broker is powered-on and fully operational • On – Indicates that the broker is powered-on, but not fully operational • Failed – Indicates that the broker has failed due to some reason • Off – Indicates that the broker is powered-off <p>The numeric values that correspond to the above-mentioned states are as follows:</p> <table border="1"> <thead> <tr> <th>State</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Active</td><td>1</td></tr> <tr> <td>On</td><td>2</td></tr> <tr> <td>Failed</td><td>3</td></tr> <tr> <td>Off</td><td>4</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned States while indicating the current state of a broker. However, the graph of this measure will represent states using the corresponding numeric equivalents – i.e., 1 to 4.</p> <p>The detailed diagnosis of this measure reveals when the controller was last</p>	State	Numeric Value	Active	1	On	2	Failed	3	Off	4
State	Numeric Value												
Active	1												
On	2												
Failed	3												
Off	4												

Measurement	Description	Measurement Unit	Interpretation																
			accessed, when it was last started, the zone to which the controller belongs, and also displays the site services that were active on the controller during its last access.																
Licensing server state on this controller	Indicates the current state of the licensing server on this desktop delivery controller (broker).		<p>The numeric values that correspond to the above-mentioned states are as follows:</p> <table border="1"> <thead> <tr> <th>State</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Ok</td><td>1</td></tr> <tr> <td>License Expired</td><td>2</td></tr> <tr> <td>Not Connected</td><td>3</td></tr> <tr> <td>Server Not Specified</td><td>4</td></tr> <tr> <td>License Not Installed</td><td>5</td></tr> <tr> <td>Incompatible</td><td>6</td></tr> <tr> <td>Failed</td><td>7</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned States while indicating the current state of the licensing server on a broker. However, the graph of this measure will represent states using the corresponding numeric equivalents – i.e., 1 to 7.</p>	State	Numeric Value	Ok	1	License Expired	2	Not Connected	3	Server Not Specified	4	License Not Installed	5	Incompatible	6	Failed	7
State	Numeric Value																		
Ok	1																		
License Expired	2																		
Not Connected	3																		
Server Not Specified	4																		
License Not Installed	5																		
Incompatible	6																		
Failed	7																		
Total registered machines	Indicates the number of machines that are currently registered with this broker.	Number																	

The detailed diagnosis of the *Controller state* measure reveals when the controller was last accessed, when it was last started, and also displays the name of the machine on which the

controller is installed, the version of the controller, the zone to which the controller belongs, the Operating system of the machine and the Operating system version.

Shows the controller information							
DNS NAME	MACHINE NAME	CONTROLLER VERSION	OS	OS VERSION	LAST ACTIVE TIME	LAST START TIME	ZONE NAME
Jan 02, 2017 17:50:45							
2K12R2XD711- DC1.egin.local	EGIN\2K12R2XD711- DC1	7.11.0.23	Windows 2012 R2	6.2.9200.0	1/2/2017 5:50:25 PM	12/28/2016 5:46:34 AM	Primary

Figure 8.13: The detailed diagnosis of the Controller state measure

8.3.2 Controller Service Details Test

This test auto-discovers the critical services executing on the XenDesktop 7 server, and reports the status of each service. With the help of this test, you can promptly detect which services have failed currently.

Target of the test : A Citrix Delivery Controller 7.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for every controller configured within a site.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the specified host listens to.
Username	In order to monitor the target Delivery Controller 7, eG requires a special user with the following privileges; <ul style="list-style-type: none"> The <i>All</i> scope and <i>read-only</i> privileges The <i>Allow log on locally</i> security privilege on the Delivery Controller host The steps for assigning such privileges to a user are discussed in the How to Monitor Citrix Delivery Controller 7 Using eG Enterprise? chapter. Specify the name of such a user, here.
Password	Specify the password for the user specified in the Username text box, here.

Parameter	Description
Confirm Password	Confirm the Password by retyping it here.
Domain	Here, specify the domain to which the user specified in the Username text box belongs to.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation																												
Broker service status	Indicates the current status of the broker service on this broker.		<p>The Citrix Broker Service brokers connections from endpoint devices to desktops and applications.</p> <p>The numeric values that correspond to the Measure Values that this measure can take are as follows:</p> <table border="1"> <thead> <tr> <th>Measure Value</th> <th>Numeri-c Value</th> </tr> </thead> <tbody> <tr> <td>OK</td> <td>1</td> </tr> <tr> <td>DBUnconfigured</td> <td>2</td> </tr> <tr> <td>DBRejectedConnection</td> <td>3</td> </tr> <tr> <td>InvalidDBConfigured</td> <td>4</td> </tr> <tr> <td>Electroencephalographic</td> <td>5</td> </tr> <tr> <td>DBOlder-VersionThanService</td> <td>6</td> </tr> <tr> <td>DBVer-sionChangeInProgress</td> <td>7</td> </tr> <tr> <td>PendingFailure</td> <td>8</td> </tr> <tr> <td>Failed</td> <td>9</td> </tr> <tr> <td>Unknown</td> <td>10</td> </tr> <tr> <td>DBNotFound</td> <td>11</td> </tr> <tr> <td>DBMiss-ingOptionalFeature</td> <td>12</td> </tr> <tr> <td>DBMiss-ingMandatoryFeature</td> <td>13</td> </tr> </tbody> </table> <p>Note:</p>	Measure Value	Numeri-c Value	OK	1	DBUnconfigured	2	DBRejectedConnection	3	InvalidDBConfigured	4	Electroencephalographic	5	DBOlder-VersionThanService	6	DBVer-sionChangeInProgress	7	PendingFailure	8	Failed	9	Unknown	10	DBNotFound	11	DBMiss-ingOptionalFeature	12	DBMiss-ingMandatoryFeature	13
Measure Value	Numeri-c Value																														
OK	1																														
DBUnconfigured	2																														
DBRejectedConnection	3																														
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Electroencephalographic	5																														
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DBVer-sionChangeInProgress	7																														
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Failed	9																														
Unknown	10																														
DBNotFound	11																														
DBMiss-ingOptionalFeature	12																														
DBMiss-ingMandatoryFeature	13																														

Measurement	Description	Measurement Unit	Interpretation																						
			<p>By default, this measure reports the above-mentioned Measure Values while indicating the current state of the broker service. However, in the graph of this measure, the same will be represented using the corresponding numeric equivalents – i.e., 1 to 13.</p>																						
AD identity service status	Indicates the current status of the AD Identity Service on this broker.		<p>The Citrix AD Identity Service manages active directory computer accounts. Once the broker validates a user login, this service connects to the broker's database to identify the virtual desktop that is assigned to the user who has logged in.</p> <p>The values that this measure reports and the numeric values that correspond to them are as follows:</p> <table border="1"> <thead> <tr> <th>Measure Value</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>OK</td><td>1</td></tr> <tr> <td>DBUnconfigured</td><td>2</td></tr> <tr> <td>DBRejectedConnection</td><td>3</td></tr> <tr> <td>InvalidDBConfigured</td><td>4</td></tr> <tr> <td>DBNotFound</td><td>5</td></tr> <tr> <td>DBNewerVersionThanService</td><td>6</td></tr> <tr> <td>DBOlderVersionThanService</td><td>7</td></tr> <tr> <td>DBVersionChangeInProgress</td><td>8</td></tr> <tr> <td>Failed</td><td>9</td></tr> <tr> <td>Unknown</td><td>10</td></tr> </tbody> </table> <p>Note: By default, this measure reports the above-mentioned Measure Values while</p>	Measure Value	Numeric Value	OK	1	DBUnconfigured	2	DBRejectedConnection	3	InvalidDBConfigured	4	DBNotFound	5	DBNewerVersionThanService	6	DBOlderVersionThanService	7	DBVersionChangeInProgress	8	Failed	9	Unknown	10
Measure Value	Numeric Value																								
OK	1																								
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DBNewerVersionThanService	6																								
DBOlderVersionThanService	7																								
DBVersionChangeInProgress	8																								
Failed	9																								
Unknown	10																								

Measurement	Description	Measurement Unit	Interpretation																						
			<p>indicating the current status of the AD Identity Service. However, in the graph of this measure, the same will be represented using the corresponding numeric equivalents – i.e., 1 to 10.</p>																						
Configuration service status	Indicates the current status of the Configuration Service on this broker.		<p>The Citrix Configuration Service stores the configuration information related to Citrix services in the broker's MS SQL database.</p> <p>The values that this measure can report and their corresponding numeric values are as follows:</p> <table border="1"> <thead> <tr> <th>Measure Value</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>OK</td><td>1</td></tr> <tr> <td>DBUnconfigured</td><td>2</td></tr> <tr> <td>DBRejectedConnection</td><td>3</td></tr> <tr> <td>InvalidDBConfigured</td><td>4</td></tr> <tr> <td>DBNotFound</td><td>5</td></tr> <tr> <td>DBNewerVersionThanService</td><td>6</td></tr> <tr> <td>DBOlderVersionThanService</td><td>7</td></tr> <tr> <td>DBVersionChangeInProgress</td><td>8</td></tr> <tr> <td>Failed</td><td>9</td></tr> <tr> <td>Unknown</td><td>10</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned Measure Values while indicating the current status of the Configuration service. However, in the graph of this measure, the same will be represented using the corresponding numeric equivalents – i.e., 1 to 10.</p>	Measure Value	Numeric Value	OK	1	DBUnconfigured	2	DBRejectedConnection	3	InvalidDBConfigured	4	DBNotFound	5	DBNewerVersionThanService	6	DBOlderVersionThanService	7	DBVersionChangeInProgress	8	Failed	9	Unknown	10
Measure Value	Numeric Value																								
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DBNewerVersionThanService	6																								
DBOlderVersionThanService	7																								
DBVersionChangeInProgress	8																								
Failed	9																								
Unknown	10																								

Measurement	Description	Measurement Unit	Interpretation																						
Host service status	Indicates the current status of the Host service on this broker.		<p>The Citrix Host Service manages host and hypervisor connections.</p> <p>The values that this measure can take and their corresponding numeric values are as follows:</p> <table border="1"> <thead> <tr> <th>Measure Value</th><th>Numeric Value</th></tr> </thead> <tbody> <tr><td>OK</td><td>1</td></tr> <tr><td>DBUnconfigured</td><td>2</td></tr> <tr><td>DBRejectedConnection</td><td>3</td></tr> <tr><td>InvalidDBConfigured</td><td>4</td></tr> <tr><td>DBNotFound</td><td>5</td></tr> <tr><td>DBNewerVersionThanService</td><td>6</td></tr> <tr><td>DBOlderVersionThanService</td><td>7</td></tr> <tr><td>DBVersionChangeInProgress</td><td>8</td></tr> <tr><td>Failed</td><td>9</td></tr> <tr><td>Unknown</td><td>10</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned Measure Values while indicating the current status of the Configuration service. However, in the graph of this measure, the same will be represented using the corresponding numeric equivalents – i.e., 1 to 10.</p>	Measure Value	Numeric Value	OK	1	DBUnconfigured	2	DBRejectedConnection	3	InvalidDBConfigured	4	DBNotFound	5	DBNewerVersionThanService	6	DBOlderVersionThanService	7	DBVersionChangeInProgress	8	Failed	9	Unknown	10
Measure Value	Numeric Value																								
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DBUnconfigured	2																								
DBRejectedConnection	3																								
InvalidDBConfigured	4																								
DBNotFound	5																								
DBNewerVersionThanService	6																								
DBOlderVersionThanService	7																								
DBVersionChangeInProgress	8																								
Failed	9																								
Unknown	10																								
Machine creation service status	Indicates the current status of the Machine Creation Service on this broker.		<p>The Citrix Machine Creation Service creates new virtual machines.</p> <p>Once a valid user logs into the Delivery Controller via the Web Interface, the Delivery Controller manages the delivery groups by building, starting, and shutting</p>																						

Measurement	Description	Measurement Unit	Interpretation																						
			<p>down the desktops as required. At this juncture, the Delivery Controller relies on Machine Creation Services (MCS) to deliver the appropriate desktop image to the Pooled and Dedicated delivery groups.</p> <p>The values that this measure can take and their corresponding numeric equivalents are as follows:</p> <table border="1"> <thead> <tr> <th>Measure Value</th><th>Numeric Value</th></tr> </thead> <tbody> <tr><td>OK</td><td>1</td></tr> <tr><td>DBUnconfigured</td><td>2</td></tr> <tr><td>DBRejectedConnection</td><td>3</td></tr> <tr><td>InvalidDBConfigured</td><td>4</td></tr> <tr><td>DBNotFound</td><td>5</td></tr> <tr><td>DBNewerVersionThanService</td><td>6</td></tr> <tr><td>DBOlderVersionThanService</td><td>7</td></tr> <tr><td>DBVersionChangeInProgress</td><td>8</td></tr> <tr><td>Failed</td><td>9</td></tr> <tr><td>Unknown</td><td>10</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned Measure Values while indicating the current status of the Machine creation service. However, in the graph of this measure, the same will be represented using the corresponding numeric equivalents – i.e., 1 to 10.</p>	Measure Value	Numeric Value	OK	1	DBUnconfigured	2	DBRejectedConnection	3	InvalidDBConfigured	4	DBNotFound	5	DBNewerVersionThanService	6	DBOlderVersionThanService	7	DBVersionChangeInProgress	8	Failed	9	Unknown	10
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DBVersionChangeInProgress	8																								
Failed	9																								
Unknown	10																								
Admin service status	Indicates the current status of the Delegated Administration service on this broker.		The Delegated Administration Service (DAS) stores information about Citrix administrators and the rights they have.																						

Measurement	Description	Measurement Unit	Interpretation																						
			<p>Services in the XenDesktop deployment use the DAS to determine whether a particular user has the privilege to perform an operation or not.</p> <p>The values that this measure can report and their corresponding numeric equivalents are as follows:</p> <table border="1"> <thead> <tr> <th>Measure Value</th><th>Numeric Value</th></tr> </thead> <tbody> <tr><td>OK</td><td>1</td></tr> <tr><td>DBUnconfigured</td><td>2</td></tr> <tr><td>DBRejectedConnection</td><td>3</td></tr> <tr><td>InvalidDBConfigured</td><td>4</td></tr> <tr><td>DBNotFound</td><td>5</td></tr> <tr><td>DBNewerVersionThanService</td><td>6</td></tr> <tr><td>DBOlderVersionThanService</td><td>7</td></tr> <tr><td>DBVersionChangeInProgress</td><td>8</td></tr> <tr><td>Failed</td><td>9</td></tr> <tr><td>Unknown</td><td>10</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned Measure Values while indicating the current status of the Delegated Administration service. However, in the graph of this measure, the same will be represented using the corresponding numeric equivalents – i.e., 1 to 10.</p>	Measure Value	Numeric Value	OK	1	DBUnconfigured	2	DBRejectedConnection	3	InvalidDBConfigured	4	DBNotFound	5	DBNewerVersionThanService	6	DBOlderVersionThanService	7	DBVersionChangeInProgress	8	Failed	9	Unknown	10
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DBVersionChangeInProgress	8																								
Failed	9																								
Unknown	10																								
Licensing service status	Indicates the current status of the Licensing service on this broker.		The values that this measure can take and their corresponding numeric values are as follows:																						

Measurement	Description	Measurement Unit	Interpretation																						
		<table border="1"> <thead> <tr> <th>Measure Value</th><th>Numeric Value</th></tr> </thead> <tbody> <tr><td>OK</td><td>1</td></tr> <tr><td>DBUnconfigured</td><td>2</td></tr> <tr><td>DBRejectedConnection</td><td>3</td></tr> <tr><td>InvalidDBConfigured</td><td>4</td></tr> <tr><td>DBNotFound</td><td>5</td></tr> <tr><td>DBNewerVersionThanService</td><td>6</td></tr> <tr><td>DBOlderVersionThanService</td><td>7</td></tr> <tr><td>DBVersionChangeInProgress</td><td>8</td></tr> <tr><td>Failed</td><td>9</td></tr> <tr><td>Unknown</td><td>10</td></tr> </tbody> </table>		Measure Value	Numeric Value	OK	1	DBUnconfigured	2	DBRejectedConnection	3	InvalidDBConfigured	4	DBNotFound	5	DBNewerVersionThanService	6	DBOlderVersionThanService	7	DBVersionChangeInProgress	8	Failed	9	Unknown	10
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Unknown	10																								
Monitoring service status	Indicates the current status of the Monitoring service on this broker.		<p>Note:</p> <p>By default, this measure reports the above-mentioned Measure Values while indicating the current status of the Licensing service. However, in the graph of this measure, the same will be represented using the corresponding numeric equivalents – i.e., 1 to 10.</p> <p>The Citrix Monitor Service monitors the Flexcast system. Citrix FlexCast is a delivery technology that allows an IT administrator to personalize virtual desktops to meet the performance, security and flexibility requirements of end users. Currently, there are five different FlexCast models available.</p> <p>The values that this measure can take and their corresponding numeric values are as follows:</p>																						

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DBOlderVersionThanService	7																								
DBVersionChangeInProgress	8																								
Failed	9																								
Unknown	10																								
Logging service status	Indicates the current status of the Logging service on this broker.		<p>Note:</p> <p>By default, this measure reports the above-mentioned Measure Values while indicating the current status of the Monitoring service. However, in the graph of this measure, the same will be represented using the corresponding numeric equivalents – i.e., 1 to 10.</p> <p>The Configuration Logging Service logs configuration changes or administrator requested state changes made to the site.</p> <p>The values that this measure can take and their corresponding numeric values are as follows:</p> <table border="1"> <thead> <tr> <th>Measure Value</th><th>Numeric Value</th></tr> </thead> <tbody> <tr><td>OK</td><td>1</td></tr> </tbody> </table>	Measure Value	Numeric Value	OK	1																		
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DBVersionChangeInProgress	8																						
Failed	9																						
Unknown	10																						
AppDisk status	Indicates the current state of the AppDisk service.		<p>Note:</p> <p>By default, this measure reports the above-mentioned Measure Values while indicating the current status of the Monitoring service. However, in the graph of this measure, the same will be represented using the corresponding numeric equivalents – i.e., 1 to 10.</p> <p>Citrix AppDisk, a new application layering technology in XenApp and XenDesktop 7.8, allows IT to package and deliver apps separately from golden images. AppDisk allows IT to create, deploy and update fewer master images. Instead of installing applications alongside the OS, IT can package and deliver them separately in departmental AppDisks. An AppDisk is either a virtual hard disk or virtual machine disk file, depending on the hypervisor - either Citrix XenServer or VMware ESXi. The values that this measure can take and</p>																				

Measurement	Description	Measurement Unit	Interpretation																						
			<p>their corresponding numeric values are as follows:</p> <table border="1"> <thead> <tr> <th>Measure Value</th><th>Numeri-c Value</th></tr> </thead> <tbody> <tr><td>OK</td><td>1</td></tr> <tr><td>DBUnconfigured</td><td>2</td></tr> <tr><td>DBRejectedConnection</td><td>3</td></tr> <tr><td>InvalidDBConfigured</td><td>4</td></tr> <tr><td>DBNotFound</td><td>5</td></tr> <tr><td>DBNew-erVersionThanService</td><td>6</td></tr> <tr><td>DBOlder-VersionThanService</td><td>7</td></tr> <tr><td>DBVer-sionChangeInProgress</td><td>8</td></tr> <tr><td>Failed</td><td>9</td></tr> <tr><td>Unknown</td><td>10</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned Measure Values while indicating the current status of the AppDisk service. However, in the graph of this measure, the same will be represented using the corresponding numeric equivalents – i.e., 1 to 10.</p>	Measure Value	Numeri-c Value	OK	1	DBUnconfigured	2	DBRejectedConnection	3	InvalidDBConfigured	4	DBNotFound	5	DBNew-erVersionThanService	6	DBOlder-VersionThanService	7	DBVer-sionChangeInProgress	8	Failed	9	Unknown	10
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8.3.3 Citrix Configuration Logging Service Test

The Configuration Logging Service logs configuration changes or administrator requested state changes made to the site. Configuration Logging can be configured, site wide, to be mandatory or optional. If mandatory logging is selected, then any attempts to change site configuration or state when the logging mechanism is unavailable are denied.

The Configuration Logging Service stores information about the logged changes in a database which can be configured to be separate from the site database.

The Configuration Logging Service runs on every Controller in the Site handling logging requests. If one Controller fails, the service on another Controller automatically handles logging requests.

This test periodically monitors the Citrix Configuration Logging Service and reports the connectivity between the service and the database and the health of transactions performed by the service on the database, so that you can receive real-time updates on the following:

- The sudden unavailability of connection to the database;
- A service overload;
- Failure of transactions to the database;
- Delays in the completion of transactions on the database

Target of the test : A Citrix Delivery Controller 7.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for the Delivery Controller being monitored.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the host listens to. By default, this is 80.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Database average transaction time	Indicates the average time taken by the service to execute database transactions.	Secs	Ideally, the value of this measure should be low. A high value indicates that the service is taking too much time to execute transactions on the database; this can cause significant delays in connection brokering.
Is database connected?	Indicates whether the database is connected or not i.e., whether this service is in contact with the database.		This measure reports the value Yes if the database is connected and No if it is not. The numeric values that correspond to these measure values are as follows:

Measurement	Description	Measurement Unit	Interpretation						
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Measure Value	Numeric Value								
Yes	1								
No	0								
			<p>Note:</p> <p>By default, this measure reports the above-mentioned Measure Values to indicate whether/not the Citrix Configuration Logging service is connected to the database. However, in the graph of this measure, the same will be represented using the numeric equivalents – 1 and 0 only.</p> <p>If the database is unavailable, the logging service may not be able to perform critical database transactions; this may adversely impact the user experience with the service and with the broker as a whole.</p>						
Database transaction errors	Indicates the rate at which the database transactions are failing while the Citrix Configuration Logging Service is executing the transactions.	Errors/Sec	A low value is desired for this measure.						
Database transactions	Indicates the rate at which the database transactions are executed by the Citrix Configuration Logging Service.	Trans/Sec							

8.3.4 Citrix Delegated Admin Service Test

The Delegated Administration Service (DAS) stores information about Citrix administrators and the rights they have. Services in the XenDesktop deployment use the DAS to determine whether a particular user has the privilege to perform an operation or not.

This test periodically monitors the connectivity between the service and the database, and the health of transactions performed by the service on the database, so that you can receive real-time updates on the following:

- The sudden unavailability of connection to the database;
- Failure of transactions to the database;
- Delays in the execution of transactions on the database

Target of the test : A Citrix Delivery Controller 7.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for the Delivery Controller being monitored.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the host listens to. By default, this is 80.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Database average transaction time	Indicates the average time taken by the service to execute a database transaction.	Secs	Ideally, the value of this measure should be low. A high value indicates that the service is taking too much time to execute transactions on the database; this can cause significant delays in connection brokering.
Is database connected	Indicates whether the database is connected or not.		This measure reports the value Yes if the database is connected and No if it is not. The numeric values that correspond to these measure values are as follows:

Measurement	Description	Measurement Unit	Interpretation	
			Measure Value	Numeric Value
			Yes	1
			No	0
			<p>Note:</p> <p>By default, this measure reports the above-mentioned Measure Values to indicate whether/not the Citrix Delegated Admin service is connected to the database. However, in the graph of this measure, the same will be represented using the numeric equivalents – 1 and 0 only.</p> <p>If the database is unavailable, the service may not be able to perform critical database transactions; this may adversely impact the user experience with the service and with the broker as a whole.</p>	
Database transaction errors	Indicates the rate at which the database transactions are failing while the Citrix Delegated Administration Service is executing the transactions.	Errors/Sec	A low value is desired for this measure.	
Database transactions	Indicates the rate at which the database transactions are executed by the Citrix Delegated Administration Service.	Trans/Sec		

8.3.5 Citrix Environment Test Service Test

The Citrix Environment Test Service provides tools to test and inspect the state of a XenDesktop installation at different points during and after configuration and install.

This test tracks the transactions executed by the **Citrix Environment** Test Service on the broker's MS SQL database server, and reports errors/delays (if any) in the transactions.

Target of the test : A Citrix Delivery Controller 7.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for the Delivery Controller being monitored.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port number at which the host listens to. By default, this is 80.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation						
Database average transaction time	Indicates the average time taken by the service to execute database transactions.	Secs	<p>Ideally, the value of this measure should be low. A high value indicates that the service is taking too much time to execute transactions on the database; this can cause significant delays in connection brokering.</p>						
Is database connected?	Indicates whether the database is connected or not.		<p>This measure reports the value Yes if the database is connected and No if it is not. The numeric values that correspond to these measure values are as follows:</p> <table border="1"> <thead> <tr> <th>Measure Value</th> <th>Numeric Value</th> </tr> </thead> <tbody> <tr> <td>Yes</td> <td>1</td> </tr> <tr> <td>No</td> <td>0</td> </tr> </tbody> </table> <p>Note: By default, this measure reports the</p>	Measure Value	Numeric Value	Yes	1	No	0
Measure Value	Numeric Value								
Yes	1								
No	0								

Measurement	Description	Measurement Unit	Interpretation
			<p>above-mentioned Measure Values to indicate whether/not the Citrix Environment Test service is connected to the database. However, in the graph of this measure, the same will be represented using the numeric equivalents – 1 and 0 only.</p> <p>If the database is unavailable, the broker service may not be able to perform critical database transactions; this may adversely impact the user experience with the service and with the broker as a whole.</p>
Database transaction errors	Indicates the rate at which the database transactions are failing while the Citrix Environment Test Service is executing the transactions.	Trans/Sec	A low value is desired for this measure.
Database transactions	Indicates the rate at which the database transactions are executed by the Citrix Environment Test Service.	Trans/Sec	

8.3.6 Citrix Monitor Service Test

The Citrix Monitor Service monitors the Flexcast system. Citrix FlexCast is a delivery technology that allows an IT administrator to personalize virtual desktops to meet the performance, security and flexibility requirements of end users. Currently, there are five different FlexCast models available.

- **Hosted Shared** - hosts multiple user desktops on a single server-based operating system.
- **Hosted VDI** - provides each user with their own individual desktop operating systems.
- **Streamed VHD** - allows Windows 7, Vista, or XP desktops to be run locally on an end user's desktop computer. Desktops are based on a single golden image and provisioned using Provisioning Services.

- **Local VM** – allows Windows 8, Windows 7, Vista, or XP desktops to run locally within a hypervisor on the end user's laptop. The virtual desktop image in its entirety is delivered to the hypervisor to allow for offline connectivity.
- **On-Demand Apps** - delivers Windows applications from the data center. Allows software applications to be delivered online or offline. Does not provide end users with a virtual desktop.

This test periodically monitors the load on the Citrix Monitor Service, the connectivity between the service and the database, and the health of transactions performed by the service on the database, so that you can receive real-time updates on the following:

- The sudden unavailability of connection to the database;
- A service overload;
- Failure of transactions to the database;
- Delays in the execution of transactions on the database

Target of the test : A Citrix Delivery Controller 7.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for the Citrix XenDesktop 7 being monitored.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the host listens to. By default, this is 80.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Database average transaction time	Indicates the average time taken by the service to execute database transactions.	Secs	Ideally, the value of this measure should be low. A high value indicates that the service is taking too much time to execute transactions on the database; this can cause significant delays in connection brokering.

Measurement	Description	Measurement Unit	Interpretation						
Is database connected?	Indicates whether the database is connected or not i.e., whether this service is in contact with the database.		<p>This measure reports the value Yes if the database is connected and No if it is not. The numeric values that correspond to these measure values are as follows:</p> <table border="1"> <thead> <tr> <th>Measure Value</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Yes</td><td>1</td></tr> <tr> <td>No</td><td>0</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned Measure Values to indicate whether/not the Citrix Monitor service is connected to the database. However, in the graph of this measure, the same will be represented using the numeric equivalents – 1 and 0 only.</p> <p>If the database is unavailable, the service may not be able to perform critical database transactions; this may adversely impact the user experience with the service and with the broker as a whole.</p>	Measure Value	Numeric Value	Yes	1	No	0
Measure Value	Numeric Value								
Yes	1								
No	0								
Database transaction errors	Indicates the rate at which the database transactions are failing while the Citrix Monitor Service is executing the transactions.	Errors/Sec	A low value is desired for this measure.						
Database transactions	Indicates the rate at which the database transactions are executed by the Citrix Monitor Service.	Trans/Sec							

8.3.7 Citrix Storefront Service Test

This test periodically monitors the load on the Citrix Storefront Service, the connectivity between the service and the database, and the health of transactions performed by the service on the database, so that you can receive real-time updates on the following:

- The sudden unavailability of connection to the database;
- A service overload;
- Failure of transactions to the database;
- Delays in the execution of transactions on the database

Target of the test : A Citrix Delivery Controller 7.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for the Delivery Controller being monitored.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the host listens to. By default, this is 80.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Database average transaction time	Indicates the average time taken by the service to execute database transactions.	Secs	Ideally, the value of this measure should be low. A high value indicates that the service is taking too much time to execute transactions on the database; this can cause significant delays in connection brokering.
Is database connected?	Indicates whether the database is connected or not i.e., whether this service is in contact with the database.		This measure reports the value Yes if the database is connected and No if it is not. The numeric values that correspond to these measure values are as follows:

Measurement	Description	Measurement Unit	Interpretation						
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Measure Value	Numeric Value								
Yes	1								
No	0								
			<p>Note:</p> <p>By default, this measure reports the above-mentioned Measure Values to indicate whether/not the Citrix Storefront service is connected to the database. However, in the graph of this measure, the same will be represented using the numeric equivalents – 1 and 0 only.</p>						
Database transaction errors	Indicates the rate at which the database transactions are failing while the Citrix Storefront Service is executing the transactions.	Errors/Sec	A low value is desired for this measure.						
Database transactions	Indicates the rate at which the database transactions are executed by the Citrix Storefront Service.	Trans/Sec							

8.3.8 Citrix XML Access Test

This verifies the interactions between the web interface, the XML service, and the IMA service. A typical web interface interaction is composed of the following:

- Client device users utilize a Web browser to view the Log in page and enter their user credentials.
- The Web Interface reads users' information and uses the Web Interface's classes to forward the information to the Citrix XML Service; this service can execute on the Web Interface or on each of the Presentation servers in a server farm. If this service executes on a XenApp server, then the designated server acts as a broker between the web interface server and the Presentation servers in a farm.

- The Citrix XML Service then retrieves a list of applications from the servers that users can access. These applications comprise the user's application set. The Citrix XML Service retrieves the application set from the Independent Management Architecture (IMA) system and Program Neighborhood Service, respectively
- The Citrix XML Service then returns the user's application set information to the Web Interface's classes.
- The user then clicks on the application of interest to him/her to access it.

This test executes on a Citrix Web Interface, and can be optionally enabled to execute on a Citrix XenApp server. This test emulates a user accessing the XML service port and requesting for a list of applications available to him/her. By emulating a request, this test checks that the entire login and application enumeration process using the the XML service and IMA service of Citrix is functioning properly.

Target of the test : A Citrix Delivery Controller 7.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for the Delivery Controller that is being monitored.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the host listens to. By default, this is 80.
Username	In order to monitor the target Delivery Controller 7, eG requires a special user with the following privileges; <ul style="list-style-type: none"> • The <i>All</i> scope and <i>read-only</i> privileges • The <i>Allow log on locally</i> security privilege on the Delivery Controller host The steps for assigning such privileges to a user are discussed in the How to Monitor Citrix Delivery Controller 7 Using eG Enterprise? chapter. Specify the name of such a user, here.
Password	Specify the password for the user specified in the Username text box, here.
Confirm Password	Confirm the Password by retying it here.

Parameter	Description
SSL	The web interface through which these tests are executing may be configured for HTTP or HTTPS access. If HTTPS access is configured, then this parameter should be set to Yes .
No Of Tries and Sleep Time	In environments where network connections are normally fuzzy and latencies are to be expected, the availability and response time checks performed by this test, may not always report accurate results. False alarms may hence be generated. In such environments therefore, you may want the test to try connecting to the XML service a few more times before reporting the availability and responsiveness of the service. To instruct the test to do so, you can use the No Of Tries and Sleep Time parameters. In the No Of Tries text box, indicate the number of times the test should try reconnecting to the XML service, and in the Sleep Time text box, specify how long (in seconds) the test should wait for a response from the service before attempting to reconnect. Both these parameters are set to 1 by default.
Timeout	Specify the duration (in seconds) for which the test needs to wait for a response from the server. At the end of this duration, the test will timeout. The default is 30 seconds.
Encoding Format	By default, the Encoding Format is set to UTF-8, for providing code compatibility when the test is executed in different language platforms.
NFUSE Protocol Version	Specify the version of the NFUSE Protocol. By default the version is set to 5.1.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Connection availability	This metric tracks if the Citrix XML service is available to handle any requests.	Percent	If the TCP connection to the XML service port fails, this metric has a value of 0. Otherwise, it has a value of 100.
Authentication status	This metric indicates if the user authentication succeeded	Percent	It has a value of 100 if the user was authenticated, and a value of 0 if the authentication failed. If the user login is valid, yet authentication fails, the problem then lies with the Citrix IMA service's communication with the domain controller/active directory server.

Measurement	Description	Measurement Unit	Interpretation
Application enumeration status	This metric indicates if the Citrix web interface was able to enumerate the applications available for the user logging in.	Percent	A value of 0 indicates that application enumeration failed, while a value of 100 denotes that the application enumeration operation succeeded. If authentication succeeds but application enumeration fails, then the problem is most likely to be in the Citrix XML service, its interaction with the IMA service, or with the IMA service itself.
TCP connection time	The time taken to establish a TCP connection to the Citrix XML service port	Seconds	If this value is significantly high, it could probably be because the network latency is high or the Citrix web interface host is overloaded.
Total response time	This metric represents the total time taken for a user to login to the Citrix web interface and enumerate all the applications.	Seconds	The value of this metric indicates the responsiveness of the Citrix web interface and its connectivity to the XML service.

8.3.9 License Details Test

Licensing errors in a XenApp/XenDesktop environment can cause major outages or degraded service for customers. To avoid such adversities, administrators should be able to proactively identify when license problems affect your site or are about to impact user connections. This is where the **License Details** test helps. This test scans the application event log of the delivery controller for specific critical, error, warning, and information events pertaining to license usage, and reports the count of events captured recently. The detailed diagnosis of this test reveals the messages so captured, so as to aid troubleshooting.

Target of the test : A Citrix Delivery Controller 7.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for the Delivery Controller being monitored.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The host for which this test is to be configured.
Port	Refers to the port at which the specified DDC listens to.
Detailed Diagnosis	<p>To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Delivery controller license warning	Indicates the count of warning events with the event ID 1154 that were captured in the event log during the last measurement period.	Number	Events with the ID 1154 occur only when the controller enters the licensing grace period. Use the detailed diagnosis of this measure to know when the grace period will expire - i.e., to know how much time is left before the controller stops providing desktop sessions.
Broker service license critical events	Indicates the count of critical events with the event ID 1151, 1155, 1157, and 1159, which were captured in the event log during the last measurement period.	Number	<p>Typically, events with the ID 1151, 1155, 1157, and 1159 are triggered, if the following problems are noticed:</p> <ul style="list-style-type: none"> • The Citrix Broker Service is not able to contact the license server:

Measurement	Description	Measurement Unit	Interpretation
			<ul style="list-style-type: none"> • The Citrix Broker Service stops providing desktop sessions, because the controller is no longer in or could not enter a licensing grace period; • The version of the license server is older than the version of the Citrix Broker Service; • The Citrix Broker Service denies a desktop connection because the maximum number of licenses for the site has exceeded <p>Use the detailed diagnosis of this measure to know which events occurred recently and how to resolve them.</p>
Broker service license information events	Indicates the number of events with event ID 1150 and 1156, which were captured during the last measurement period.	Number	<p>Typically, events with the ID 1150 and 1156 are triggered, if the following are noticed:</p> <ul style="list-style-type: none"> • The Citrix Broker Service successfully contacted the license server; • The controller is no longer in the licensing grace period, as the license has been acquired. The Citrix Broker Service is successfully communicating with the license server after license acquisition. <p>Use the detailed diagnosis of this</p>

Measurement	Description	Measurement Unit	Interpretation
			measure for more details about these events.
Broker service license warning	Indicates the number of events with the event ID 1153, 1158, and 1160, which were captured in the last measurement period.	Number	<p>Typically, events with the ID 1153, 1158, and 1160 are triggered, if the following problems are noticed:</p> <ul style="list-style-type: none"> • The XenDesktop site's license expired: • The Citrix Broker Service detected that you have exceeded the number of licenses available for this site on the license server for this edition. The license server granted you an overdraft license; • The Citrix Broker service encountered an internal error while managing licenses. <p>Use the detailed diagnosis of this measure to know which events occurred recently and to troubleshoot them effectively.</p>
Site license error	Indicates the number of events with event ID 1152, that were captured during the last measurement period.	Number	<p>Events with ID 1152 occur if the XenDesktop site being monitored does not have the required licenses present on the license server.</p> <p>Use the detailed diagnosis of this measure to know more details about these events. Typically, when such events occur, you may want to use the License Administration Console to add the relevant licenses to the license server and proceed.</p>

8.3.10 Controller Database Connectivity Test

A site uses three SQL server databases:

- **Site** – (also known as Site Configuration) stores the running Site configuration, plus the current session state and connection information.
- **Configuration Logging** – (also known as Logging) stores information about Site configuration changes and administrative activities. This database is used when the Configuring Logging feature is enabled (default = enabled).
- **Monitoring** – stores data used by Director, such as session and connection information.

Each Delivery Controller communicates with the **Site** database; Windows authentication is required between the Controller and the databases. If your Site contains more than one zone, the **Site** database should always be in the primary zone. Controllers in every zone communicate with that database.

Since the Site database forms a single point of failure, if the database server fails, existing connections will continue to function until a user either logs off or disconnects. New connections cannot be established if the database server is unavailable (except in certain cases when connection leasing is configured). If a user to a XenApp / XenDesktop site complaints that he is unable to connect to it, you may want to check if the database server is available. The **Controller Database Connectivity** test reports this information at pre-configured intervals. In addition, the test reports how long the database server has remained unavailable, thus indicating to you whether the unavailability was sudden or prolonged. This greatly aids troubleshooting, as it points to the time window in which the break in connection might have occurred, so that you can effectively time-correlate the unavailability with problems that might have occurred around that time frame and determine the source of the issue.

Target of the test : A Citrix Delivery Controller 7.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for the Delivery Controller being monitored.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the DDC for which this test is to be configured.
Port	Refers to the port at which the specified DDC listens to.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Database availability	Indicates whether/not the Site database is available.	Percent	The value 100 indicates that the controller is able to connect to the database. The value 0 indicates that the database is inaccessible to the controller.
Database unavailability duration	Indicates how long the Site database was unavailable.	Mins	<p>This measure will be reported only if the 'Database availability' measure reports the value 0.</p> <p>A low value is desired for this measure. A consistent rise in this value indicates that the database has been unavailable to users for a long time. This could adversely impact user experience with XenApp/XenDesktop.</p>

8.3.11 Citrix High Availability Service Test

The Citrix Broker Service is responsible for negotiating session launch requests with ‘workers’. The Broker service communicates with the VDA over a protocol that Citrix refers to as CBP (connection brokering protocol) to validate a worker’s readiness to fulfill a session launch request, gather the necessary details (IP address or host name), and send the details back to the StoreFront site to be packaged and delivered as an .ICA launch file that’s consumed by the Receiver.

The high availability of this service relies on the availability of the Microsoft SQL server database that is used by the StoreFront site. If network issues or other interruptions prevent delivery Controllers from accessing the database, the broker service will fail - as a result, users may not be able to connect to their applications or desktop.

To avoid database failures, administrators often employ SQL server high availability best practices. Also, as a supplement to these best practices, administrators also enable connection leasing. The connection leasing feature enables users to connect and reconnect to their most recently used applications and desktops, even when the Site database is not available.

Although users may have a large number of published resources available, they often use only a few of them regularly. When you enable connection leasing, each Controller caches user connections to

those recently used applications and desktops during normal operations (when the database is available).

The leases generated on each Controller are uploaded to the Site database for periodic synchronization to other Controllers on the Site. In addition to leases, each Controller's cache holds application, desktop, icon, and worker information. The lease and related information is stored on each Controller's local disk. If the database becomes unavailable, the Controller enters leased connection mode and "replays" the cached operations when a user attempts to connect or reconnect to a recently used application or desktop from StoreFront.

For the Citrix broker service to be highly available therefore, administrators should:

- Periodically check the availability of the SQL database to determine whether/not any SQL server high availability best practices are in place and measure their effectiveness;
- Check the effectiveness of the Connection Leasing feature;

Using what is observed during such checks, administrators can then fine-tune the high availability settings of the SQL database.

This is exactly what the Citrix High Availability Service test helps administrators do! With the help of this test, administrators can run availability checks on the SQL database, and in the process, determine whether/not the SQL high availability best practices have succeeded in keeping the database alive and accessible. Using the test, administrators can also monitor the Connection leasing activity and measure its effectiveness. This way, the test provides useful pointers to administrators on how to make the SQL database and the broker service that depends on it, highly available.

This test is disabled by default. To enable the test, go to the **ENABLE / DISABLE TESTS** page using the menu sequence : Agents -> Tests -> Enable/Disable, pick *Citrix Cloud Connector* as the desired **Component type**, set *Performance* as the **Test type**, choose the test from the **DISABLED TESTS** list, and click on the < button to move the test to the **ENABLED TESTS** list. Finally, click the **Update** button.

Target of the test : A Citrix Delivery Controller 7.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for the Delivery Controller being monitored.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The host for which the test is to be configured.
Port	The port at which the connector listens. By default, this is 443.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation						
Is database connected?	Indicates whether/not the Citrix broker service is able to access its SQL database.		<p>This measure reports the value Yes if the database is connected and No if it is not. The numeric values that correspond to these measure values are as follows:</p> <table border="1"> <thead> <tr> <th>Measure Value</th> <th>Numeric Value</th> </tr> </thead> <tbody> <tr> <td>Yes</td> <td>1</td> </tr> <tr> <td>No</td> <td>0</td> </tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned Measure Values to indicate whether/not the Citrix Broker service is connected to the database. However, in the graph of this measure, the same will be represented using the numeric equivalents – 1 and 0 only.</p> <p>If the database is unavailable, the broker service may not be able to perform critical database transactions; this may adversely impact the user experience with the service and with the broker as a whole.</p>	Measure Value	Numeric Value	Yes	1	No	0
Measure Value	Numeric Value								
Yes	1								
No	0								

Measurement	Description	Measurement Unit	Interpretation
Database average transaction time	Indicates the average time taken by the broker to execute a database transaction from the Citrix Broker Service.	Secs	Ideally, the value of this measure should be low. A high value indicates that the broker service is taking too much time to execute transactions on the database; this can cause significant delays in connection brokering.
Database transactions	Indicates the rate at which the database transactions are executed by the Citrix Broker Service.	Transactions/Sec	
Database transaction errors	Indicates the rate at which the database transactions are failing while the Citrix Broker Service is executing the transactions.	Trans/Sec	A low value is typically desired for this measure. High values may indicate connectivity issues of the XenDesktop Broker service with the XenDesktop database. In case issues are reported, SQL server and network availability needs to be verified.
Registration average request time	Indicates the average time taken to process a virtual desktop registration request in Citrix Broker Service.	Secs	If the value of this measure increases consistently, it denotes that the registration process is bottlenecked. If the situation is allowed to persist, it can seriously hamper user experience with the cloud service.
Registration requests	Indicates the number of registration requests received by the Citrix Broker Service from the virtual desktops.	Number	
Soft registrations	Indicates the rate at which the virtual desktop agents are soft-registered.	Registrations/Sec	When the virtual desktop agents are soft registered with Citrix Broker Service, the virtual desktop agents can securely communicate with the Citrix Broker Service other, but cannot deliver sessions.
Hard registrations	Indicates the rate at which	Registrations/Sec	

Measurement	Description	Measurement Unit	Interpretation
	the virtual desktop agents are hard-registered i.e., forcefully registered with the Citrix Broker Service.		
Registration rejects	Indicates the rate at which the Citrix Broker Service rejects registration requests from virtual desktops.	Rejects/Sec	
Expired registrations	Rate at which virtual desktop registrations with Citrix Broker Service expire, through inactive communication.	Registrations/Sec	The value 0 is desired for this measure.
Deregistration requests	Indicates the number of de-registration requests received by the Citrix Broker Service from virtual desktops.	Number	
Application cache writes	Indicates the number of applications cached for connection leasing by the Citrix Broker Service.	Number	<p>For best performance, user connections to regularly used applications, desktops, icons, and machines should be in the cache. However, if the cache does not have adequate space, then very few user connections will be cached - sometimes, many of the regular connections themselves may not be in the cache. In such a situation, if the database becomes unavailable, many application/desktop launches will fail owing to the absence of cached connections.</p> <p>Therefore, to ensure that the values of these measures remain high - i.e., to ensure that sufficient user connections to applications,</p>

Measurement	Description	Measurement Unit	Interpretation
Shared desktop cache writes	Indicates the number of shared desktops cached for connection leasing by the Citrix Broker Service.	Number	desktops, icons, and machines are present in the cache - you need to make sure that the cache is adequately sized.
Private desktop cache writes	Indicates the number of private desktops cached for connection leasing by the Citrix Broker Service.	Number	
Icon cache writes	Indicates the number of icons cached for connection leasing by the Citrix Broker Service.	Number	
Machine cache writes	Indicates the number of machines cached for connection leasing by the Citrix Broker Service.	Number	
Successful leased enumerations	Indicates the number of resource enumerations that were successful when the Citrix Broker Service is in connection leasing mode.	Number	A high value is desired for this measure.
Successful leased launches	Indicates the resource launches that were successful when the Citrix Broker Service is in connection leasing mode.	Number	A high value is desired for this measure.
Failed leased enumerations	Indicates the number of resource enumerations that failed when the Citrix Broker Service is in connection leasing mode	Number	Ideally, the value of this measure should be 0.
Failed launches	Indicates the number of resource launches that failed when the Citrix Broker Service is in	Number	Ideally, the value of this measure should be 0.

Measurement	Description	Measurement Unit	Interpretation
	connection leasing mode.		
Expired launches	Indicates the rate at which virtual desktops time out waiting on clients to connect to them, as detected by Citrix Broker Service.	Launches/Sec	If the value of this measure is abnormally high, you may want to check the Timeout setting for virtual desktops and change it (if need be).
Lease sync skipped	Indicates the number of lease cache synchronization cycles that were skipped as a result of the previous cycle not completing on time.	Number	The leases generated on each Controller are uploaded to the Site database for periodic synchronization to other Controllers on the Site. If a non-zero value is reported by this measure, it means that one/more synchronizations have been missed. This in turn implies that outdated lease information is at the disposal of the other controllers on the site. This in turn can cause inconsistencies in connection leasing behavior across the site.
Lease uploads	Indicates the number of leases uploaded and synchronized across the site for connection leasing by the Citrix Broker Service.	Number	Ideally, the value of this measure should be high.
Lease writes	Indicates the number of leases cached for connection leasing by the Citrix Broker Service.	Number	
Brokered sessions	Indicates the number of virtual desktop sessions that are brokered by the Citrix Broker Service.	Number	This is a good indicator of the load handled by the service.
Ping requests	Indicates the number of ping requests received by the Citrix Broker Service from virtual desktops.	Number	

8.3.12 Citrix High Availability XML Service Test

The Citrix XML service is responsible for communications between the Web Interface component and the XenDesktop site. The XML Service authenticates users, provides a list of available virtual desktops, and generates the information to allow the end-point to make a connection to the virtual desktop. To understand the load handled by the XML service, proactively determine probable delays in the delivery of the XML service, and to isolate the exact XML transaction that is causing the slowdown, you can use this test.

This test is disabled by default. To enable the test, follow the Agents -> Tests -> Enable/Disable menu sequence, select Citrix Cloud Connector as the Component type, select this test from the Disabled Tests list, and click the < button to enable it.

Target of the test : A Citrix Cloud Connector

Agent deploying the test : An internal agent

Outputs of the test : One set of results for each XML transaction performed by the XML service.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the specified host listens to.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Average transaction time	Indicates the time taken by this XML transaction to complete.	Secs	Ideally, the value of this measure should be low. A high value indicates that a particular XML transaction is taking too much time for execution; this can adversely impact the user experience with the broker.
Concurrent transactions	Indicates the number of concurrent transactions being processed.	Number	These measures are good indicators of the processing ability of the XML service.

Measurement	Description	Measurement Unit	Interpretation
Transactions	Indicates the rate at which this transaction was processed by the XML service.	Trans/Sec	

8.4 The Delivery Groups Layer

Delivery groups consist of virtual desktops and applications that are pooled, pre-assigned, or assigned on first use. Each group can contain only one type of desktop or application. These virtual desktops and applications can run on PCs, blades, or virtual machines (VMs) provided through a virtualization infrastructure.

This layer focuses on the performance of the delivery groups managed by a Delivery Controller 7 site, and reports the availability, usage, and the hosting infrastructure of the desktops within each group.

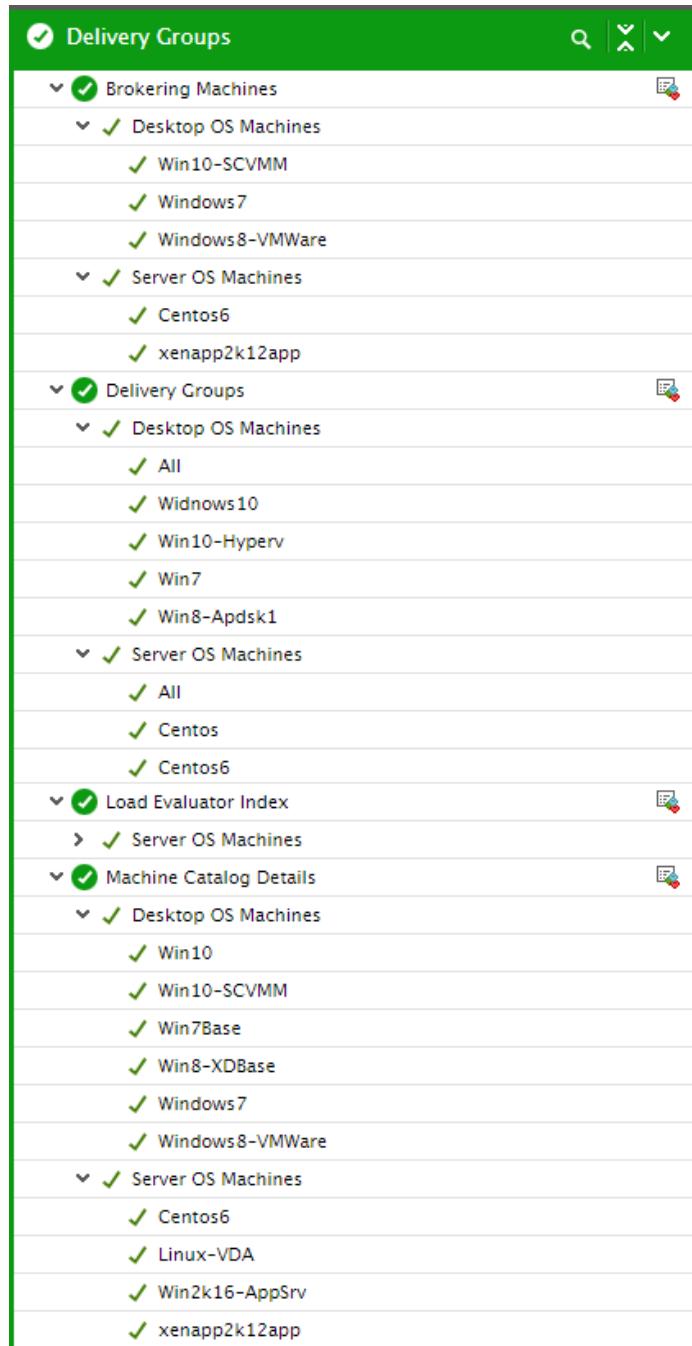


Figure 8.14: The Delivery Groups layer

8.4.1 Delivery Groups Test

With the help of this test, you can determine the maintenance mode of each delivery group managed by the monitored broker, and track the usage of desktops within each group. Unregistered desktops,

CPU-intensive desktops, disconnected desktops, and desktops available to users, which are managed by this broker, can thus be quickly and accurately isolated.

Target of the test : Citrix Delivery Controller 7.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for each delivery group that is configured with the Delivery Controller 7.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the specified host listens to. By default, this is 80.
Username	In order to monitor the target Delivery Controller 7, eG requires a special user with the following privileges; <ul style="list-style-type: none"> • The <i>All</i> scope and <i>read-only</i> privileges • The <i>Allow log on locally</i> security privilege on the Delivery Controller host The steps for assigning such privileges to a user are discussed in the How to Monitor Citrix Delivery Controller 7 Using eG Enterprise? chapter. Specify the name of such a user, here.
Password	Specify the password for the user specified in the Username text box, here.
Confirm Password	Confirm the Password by retyping it here.
Domain	Here, specify the domain to which the user specified in the Username text box belongs to.
Report by Machine Type	By default, this flag is set to Yes indicating that the individual descriptors of this test - i.e., the delivery groups- are classified based on their machine type; in other words, the delivery groups will be listed either under Server OS Machines or Desktop OS Machines based on their machine type. If you do not want to group the delivery groups based on their machine types, set this flag to No .
Show Available Machines DD	By default, this flag is set to No . This implies that by default, detailed metrics will not be available for the Available machines measure of this test. To enable detailed diagnosis for this measure, you can set this flag to Yes . In this case, you will be able to view the complete details of all machines that are currently available in each delivery

Parameter	Description
	group managed by the broker.
Show Registered Machines DD	By default, this flag is set to No . This implies that by default, detailed metrics will not be available for Registered machines measure of this test. To enable detailed diagnosis for this measure, you can set this flag to Yes . In this case, you will be able to view the complete details of the machines (in each delivery group) that are currently registered with the broker being monitored.
Show Powered On Machines DD	By default, this flag is set to No . This implies that by default, detailed metrics will not be available for Powered on machines measure of this test. To enable detailed diagnosis for this measure, you can set this flag to Yes . In this case, you will be able to view the complete details of the powered on machines in each delivery group that is managed by the broker.
Detailed Diagnosis	<p>To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Is delivery group available?	Indicates whether this delivery group is available or not.		<p>This measure reports the value Yes if a delivery group is available, and reports No if it is not available.</p> <p>The numeric values that correspond to the above-mentioned measure values are as follows:</p>

Measurement	Description	Measurement Unit	Interpretation						
			<table border="1"> <thead> <tr> <th>Measure Value</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Yes</td><td>1</td></tr> <tr> <td>No</td><td>0</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned Measure Values while indicating the availability of the delivery group. However, in the graph of this measure, the same will be represented using the numeric equivalents – 1 and 0 only.</p> <p>The detailed diagnosis of this measure if enabled, lists the name of the delivery group, the description, the zone to which the group belongs, the desktop kind, whether Secure ICA is required, the number of sessions supported, whether the machine needs to be shut down after use, <i>Powered on status</i> of the machine if user is assigned, Powered on status of the machine during peak period if user is assigned, the published name of the machine, the delivery type, and the AppDisk name.</p>	Measure Value	Numeric Value	Yes	1	No	0
Measure Value	Numeric Value								
Yes	1								
No	0								
Is delivery group in maintenance mode?	Indicates whether this delivery group is in a maintenance mode or not.		<p>Delivery groups are typically put on maintenance mode, if the connections to the machines within the group are to be temporarily stopped so that maintenance tasks are carried out.</p> <p>XenDesktop has no control over delivery groups that are in maintenance mode. No user can log on to a machine in this state.</p> <p>This measure reports the value Yes if a delivery group is in the maintenance</p>						

Measurement	Description	Measurement Unit	Interpretation						
			<p>mode, and reports <i>No</i> if it is not. The numeric values that correspond to the above-mentioned Measure Values are as follows:</p> <table border="1"> <thead> <tr> <th>Measure Value</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Yes</td><td>1</td></tr> <tr> <td>No</td><td>0</td></tr> </tbody> </table> <p>Note: By default, this measure reports the above-mentioned Measure Values while indicating the maintenance status of the desktop group. However, in the graph of this measure, the same will represent the maintenance modes using the numeric equivalents – 1 and 0 only.</p>	Measure Value	Numeric Value	Yes	1	No	0
Measure Value	Numeric Value								
Yes	1								
No	0								
Total machines	Indicates the total number of machines in this group.	Number							
Available machines	Indicates the number of machines in this delivery group that are available for a new user to connect to.	Number	Ideally, this value should be high. The detailed diagnosis of this measure if enabled, will reveal the complete details of the available desktops, such as, the desktop name, IP address, the desktop type, the catalog to which the desktop belongs, the hosting server on which the desktop operates, etc.						
Used machines	Indicates the number of machines in this group that are currently used by users.	Number	The detailed diagnosis of this measure provides complete details of the machines in use such as the machine name, the IP address, the delivery group and catalog to which it belongs, the operating system it runs on and the version of the OS, the hypervisor to which the machine is connected, the user accessing the session, the name of the DNS server with which it						

Measurement	Description	Measurement Unit	Interpretation
			communicates, and the machine type - whether Private or Shared, the name of the controller, the location of the changes made by the user, the provisioning type of the machine, the applications that are published on the machine etc.
Percentage of used machines	Indicates the percentage of machines in this group that are currently in use by users.	Percent	<p>Ideally, the value of this measure should be low. A value close to 100% indicates that the delivery group is about to run out of free machines. Owing to the absence of unused machines, other users who have been assigned to this delivery group will be denied access to the group upon login.</p> <p>Moreover, high usage of a delivery group may also drain the corresponding hosting infrastructure of its physical and virtual resources.</p>
Disconnected machines	Indicates the number of machines that are disconnected from this delivery group.	Number	The detailed diagnosis of this measure will reveal the complete details of the disconnected machines, such as, the machine name, IP address, OS type, OS version, the desktop type, the delivery group to which the machine belongs, the catalog to which the machine belongs, the hosting server on which the machine operates, the hypervisor connection, the name of the controller, location of the changes made by the user, provisioning type of this machine etc.
Preparing machines	Indicates the number of machines in this group that are currently preparing sessions for users.	Number	

Measurement	Description	Measurement Unit	Interpretation
Pending update machines	Indicates the number of machines managed by this delivery group to which updates are currently pending.	Number	Use the detailed diagnosis of this measure to know which machines are awaiting updates.
Machines in maintenance mode	Indicates the number of machines in this group that are currently under maintenance.	Number	
Registered machines	Indicates the number of machines that are currently registered with this delivery group.	Number	Use the detailed diagnosis of this measure to know which machines are currently registered with the broker.
Unregistered machines	Indicates the number of machines that are configured in this delivery group but are in an unregistered state with this broker.	Number	
Agent error machines	Indicates the number of machines that are in an AgentError state in this delivery group.	Number	
Never registered machines	Indicates the number of machines that are not registered properly with the broker although they are configured in this delivery group.	Number	
High CPU machines	Indicates the number of machines managed by this delivery group that are currently consuming CPU resources excessively.	Number	A low value is desired for this measure. Use the detailed diagnosis of this measure to know which machines are running CPU-intensive applications.
High latency machines	Indicates the number of machines managed by	Number	A low value is desired for this measure. Use the detailed diagnosis of this

Measurement	Description	Measurement Unit	Interpretation
	this delivery group that are currently experiencing high network latencies.		measure to know which machines are experiencing high latencies.
High profile load time machines	Indicates the number of machines managed by this delivery group that are currently taking too long a time to load profiles.	Number	A low value is desired for this measure. Use the detailed diagnosis of this measure to know which machines are facing issues when loading profiles.
Powered on machines	Indicates the number of machines in this desktop group that are currently powered on.	Number	Use the detailed diagnosis of this measure to know which machines are currently powered on.
Machines with suspended power state	Indicates the number of machines in this delivery group that are currently in the Suspended state.	Number	Use the detailed diagnosis of this measure to know which machines are currently in the Suspended state.
Powered off machines	Indicates the number of machines in this delivery group that are currently powered off.	Number	Use the detailed diagnosis of this measure to know which machines are currently in the powered off.
Machines with unknown power state	Indicates the number of machines in the following power states: <ul style="list-style-type: none"> Unavailable Unmanaged Unknown 	Number	A low value is desired for this measure. The detailed diagnosis of this measure will reveal the complete details of the unavailable machines, such as, the machine name, IP address, the machine type, the delivery group and catalog to which the machine belongs, the hosting server on which the machine operates, the name of the hypervisor and the controller on which the machine operates, the user who is active on the session, the location at which the changes made by the user is stored, the provision type of the machine, and the application published on the machine, if the machine is a XenAPP server.

Measurement	Description	Measurement Unit	Interpretation
Power action pending machines	Indicates the number of machines in this delivery group on which the power action is pending.		
Last connection failed machines	Indicates the number of machines in this group to which the last connection attempt failed.	Number	A low value is desired for this measure. Use the detailed diagnosis of this measure to know which machines could not be connected to recently.
Recent connection failed machines	Indicates the number of machines in this group to which the last connection attempt failed during the last measurement period.	Number	
Last deregistration machines	Indicates the number of machines in this group that were the last to be deregistered from this broker.	Number	The detailed diagnosis of this measure if enabled, lists the name of the machine, IP address, OS type and version, the delivery group and catalog to which the machine belongs, the desktop kind, the hosting server on which the machine operates, the hypervisor connection, the user who is currently accessing the session, name of the controller, the location of the changes made by the user, provisioning type, the applications published on the machine if the machine is a XenAPP, the reason for deregistration of the machine and the actual time of deregistration etc.
Recent deregistration machines	Indicates the number of machines in this group that deregistered from this broker during the last measurement period.	Number	The detailed diagnosis of this measure if enabled, lists the name of the machine, IP address, OS type and version, the delivery group and catalog to which the machine belongs, the desktop kind, the hosting server on which the machine operates, the hypervisor connection, the user who is currently accessing the

Measurement	Description	Measurement Unit	Interpretation
			session, name of the controller, the location of the changes made by the user, provisioning type, the applications published on the machine if the machine is a XenAPP, the reason for the machine to be deregistered from the broker, the time of deregistration etc.
Last error machines	Indicates the number of machines on which errors were detected last.	Number	
Recent error machines	Indicates the machines on which errors were detected during the last measurement period.	Number	
Machines available in idle state, outside peak hours	Indicates the number of machines in this group that should be available in idle state, outside peak hours.	Number	<p>The value of this measure is governed by the <i>OffPeakBufferSizePercent</i> and <i>PeakHours</i> variables. The <i>OffPeakBufferSizePercent</i> is set with the PowerShell cmdlet: <i>Set-BrokerDesktopGroup</i>. The <i>PeakHours</i> variable can be set using the Citrix Studio.</p> <p>Depending upon when the machines in the group are used the least and how many machines are used on an average during that period, you can tweak the above-mentioned variables.</p>
Machines available in idle state, in peak hours	Indicates the number of machines in this group that should be available in idle state, during peak hours.	Number	<p>The value of this measure is governed by the <i>PeakBufferSizePercent</i> and <i>PeakHours</i> variables. The <i>PeakBufferSizePercent</i> is set with the PowerShell cmdlet: <i>Set-BrokerDesktopGroup</i>. The <i>PeakHours</i> variable can be set using the Citrix Studio.</p> <p>Depending upon when the machines in the group are used the maximum and</p>

Measurement	Description	Measurement Unit	Interpretation						
			how many machines are used on an average during that period, you can tweak the above-mentioned variables. The goal is to make sure that there is no loss of productivity during peak hours due to the lack of sufficient idle machines.						
Total sessions	Indicates the total number of sessions currently active on this delivery group.	Number							
Total applications	Indicates the total number of applications deployed on machines in this delivery group.	Number							
Is added machine turned-on?	Indicates whether/not machines should be automatically powered-on when being added to this group.		<p>The values that this measure reports and the numeric values that correspond to them are as follows:</p> <table border="1"> <thead> <tr> <th>Measure Value</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Yes</td><td>1</td></tr> <tr> <td>No</td><td>0</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned Measure Values while indicating whether/not the machines are to be powered-on when being added to this group. However, in the graph of this measure, the same will be represented using the numeric equivalents only.</p>	Measure Value	Numeric Value	Yes	1	No	0
Measure Value	Numeric Value								
Yes	1								
No	0								

The detailed diagnosis of the *Is delivery group available?* measure lists the name of the delivery group, the description, the zone to which the group belongs, the desktop kind, whether Secure ICA is required, the number of sessions supported, whether the machine needs to be shut down after use, Powered on status of the machine if user is assigned, Powered on status of the machine during

peak period if user is assigned , the published name of the machine, the delivery type, and the AppDisk name.

Shows the details of delivery group settings							
DELIVERY GROUP	DESCRIPTION	DESKTOP KIND	SECURE ICA REQUIRED	SESSION SUPPORT	SHUTDOWN AFTER USE	POWER ON ASSIGNED	POWER ON ASSIGNED PEAK
Jan 03, 2017 11:57:15							
Widnows10	-	Private	False	Single Session	False	True	False

Figure 8.15: The detailed diagnosis of the Is delivery group available? measure

The detailed diagnosis of the *Used machines* measure provides complete details of the machines in use such as the machine name, the IP address, the delivery group and catalog to which it belongs, the operating system it runs on and the version of the OS, the hypervisor to which the machine is connected, the user accessing the session, the name of the DNS server with which it communicates, and the machine type - whether Private or Shared, the name of the controller, the location of the changes made by the user, the provisioning type of the machine, the applications that are published on the machine etc.

Shows the list of used machines																	
TIME	MACHINE NAME	MACHINE DNS NAME	IP ADDRESS	OS TYPE	OS VERSION	DELIVERY GROUP NAME	CATALOG NAME	DESKTOP KIND	HOSTED MACHINE NAME	HOSTING SERVER NAME	HYPervisor CONNECTION NAME	SESSION USERNAME	CONTROLLER NAME	PERSIST USER CHANGES	PROVISIONING TYPE	PUBLISHED APPLICATIONS	PUBLISHED NAME
2013-09-18 01:10:48	CTRIX(CTX-EXCL3	CTX-EXCL3.Citrix.eginnovations.com	192.168.8.126	Windows 2008 R2 Service Pack 1	6.1.7601 Service Pack 1	XenApp	XenApp	Shared	Win2K8R2-EXCL3 [8.126]	newxenserver61(10.165)	Xenserver	-	EXCL-1.Citrix.eginnovations.com	On local disk	Manual	Editplus,explorer,Notepad,VMware View Client	-
2013-09-18 01:05:47	CTRIX(CTX-EXCL3	CTX-EXCL3.Citrix.eginnovations.com	192.168.8.126	Windows 2008 R2 Service Pack 1	6.1.7601 Service Pack 1	XenApp	XenApp	Shared	Win2K8R2-EXCL3 [8.126]	newxenserver61(10.165)	Xenserver	-	EXCL-1.Citrix.eginnovations.com	On local disk	Manual	Editplus,explorer,Notepad,VMware View Client	-
2013-09-18 01:00:37	CTRIX(CTX-EXCL3	CTX-EXCL3.Citrix.eginnovations.com	192.168.8.126	Windows 2008 R2 Service Pack 1	6.1.7601 Service Pack 1	XenApp	XenApp	Shared	Win2K8R2-EXCL3 [8.126]	newxenserver61(10.165)	Xenserver	-	EXCL-1.Citrix.eginnovations.com	On local disk	Manual	Editplus,explorer,Notepad,VMware View Client	-

Figure 8.16: The detailed diagnosis of the Used machines measure

The detailed diagnosis of the *Unavailable machines* measure will reveal the complete details of the unavailable machines, such as, the machine name, IP address, the machine type, the delivery group and catalog to which the machine belongs, the hosting server on which the machine operates, the name of the hypervisor and the controller on which the machine operates, the user who is active on the session, the location at which the changes made by the user is stored, the provision type of the machine, the application published on the machine, if the machine is a XenAPP etc.

Shows the list of unavailable machines																	
TIME	MACHINE NAME	MACHINE DNS NAME	IP ADDRESS	OS TYPE	OS VERSION	DELIVERY GROUP NAME	CATALOG NAME	DESKTOP KIND	HOSTED MACHINE NAME	HOSTING SERVER NAME	HYPervisor CONNECTION NAME	SESSION USERNAME	CONTROLLER NAME	PERSIST USER CHANGES	PROVISIONING TYPE	PUBLISHED APPLICATIONS	PUBLISHED NAME
2013-09-17 13:32:52	CTRIX(CTX-EXCL3	CTX-EXCL3.Citrix.eginnovations.com	192.168.8.126	Windows 2008 R2 Service Pack 1	6.1.7601 Service Pack 1	XenApp	XenApp	Shared	Win2K8R2-EXCL3 [8.126]	newxenserver61(10.165)	Xenserver	-	EXCL-1.Citrix.eginnovations.com	On local disk	Manual	Editplus,explorer,Notepad,VMware View Client	-
2013-09-17 13:27:46	CTRIX(CTX-EXCL3	CTX-EXCL3.Citrix.eginnovations.com	192.168.8.126	Windows 2008 R2 Service Pack 1	6.1.7601 Service Pack 1	XenApp	XenApp	Shared	Win2K8R2-EXCL3 [8.126]	newxenserver61(10.165)	Xenserver	-	EXCL-1.Citrix.eginnovations.com	On local disk	Manual	Editplus,explorer,Notepad,VMware View Client	-
2013-09-17 13:22:45	CTRIX(CTX-EXCL3	CTX-EXCL3.Citrix.eginnovations.com	192.168.8.126	Windows 2008 R2 Service Pack 1	6.1.7601 Service Pack 1	XenApp	XenApp	Shared	Win2K8R2-EXCL3 [8.126]	newxenserver61(10.165)	Xenserver	-	EXCL-1.Citrix.eginnovations.com	On local disk	Manual	Editplus,explorer,Notepad,VMware View Client	-

Figure 8.17: The detailed diagnosis of the Unavailable machines measure

The detailed diagnosis of the *Disconnected machines* measure will reveal the complete details of the disconnected machines, such as, the machine name, IP address, OS type, OS version, the desktop type, the delivery group to which the machine belongs, the catalog to which the machine belongs, the hosting server on which the machine operates, the hypervisor connection, the name of the controller, location of the changes made by the user, provisioning type of this machine etc.

Figure 8.18: The detailed diagnosis of the Disconnected machines measure

The detailed diagnosis of the *Last deregistration machines* measure, lists the name of the machine, IP address, OS type and version, the delivery group and catalog to which the machine belongs, the desktop kind, the hosting server on which the machine operates, the hypervisor connection, the user who is currently accessing the session, name of the controller, the location of the changes made by the user, provisioning type, the applications published on the machine if the machine is a XenAPP, the reason for deregistration of the machine and the actual time of deregistration etc.

Shows the list of last deregistration machines																			
Time	Machine Name	Machine DNS Name	IP Address	OS Type	OS Version	Delivery Group Name	Catalog Name	Desktop Kind	Hosted Machine Name	Hosting Server Name	HyperVistor Connection Name	Session Username	Controller Name	Persist User Changes	Provisioning Type	Published Applications	Published Name	Reason	Time
2013-09-18 01:30:25	CITRIX\KenVD17box-001	KenVD17box-001.Citrix.egininnovations.com	192.168.8.127	Windows 7	Microsoft Windows 7 Pro 6.1.7600.0	Sales-Desktop	Sales-Desktop-Catalog	Private	XenVD17box-001	192.168.10.14	VMware-VC	CITRIX\Finance	EXCL-1.Citrix.egininnovations.com	Personal vDisk	Machine Creation Services	-	-	Agent Shutdown	8/21/2013 11:21:06 PM
2013-09-18 01:25:48	CITRIX\KenVD17box-001	KenVD17box-001.Citrix.egininnovations.com	192.168.8.127	Windows 7	Microsoft Windows 7 Pro 6.1.7600.0	Sales-Desktop	Sales-Desktop-Catalog	Private	XenVD17box-001	192.168.10.14	VMware-VC	CITRIX\Finance	EXCL-1.Citrix.egininnovations.com	Personal vDisk	Machine Creation Services	-	-	Agent Shutdown	8/21/2013 11:21:06 PM
2013-09-18 01:21:07	CITRIX\KenVD17box-001	KenVD17box-001.Citrix.egininnovations.com	192.168.8.127	Windows 7	Microsoft Windows 7 Pro 6.1.7600.0	Sales-Desktop	Sales-Desktop-Catalog	Private	XenVD17box-001	192.168.10.14	VMware-VC	CITRIX\Finance	EXCL-1.Citrix.egininnovations.com	Personal vDisk	Machine Creation Services	-	-	Agent Shutdown	8/21/2013 11:21:06 PM
2013-09-18 01:15:53	CITRIX\KenVD17box-001	KenVD17box-001.Citrix.egininnovations.com	192.168.8.127	Windows 7	Microsoft Windows 7 Pro 6.1.7600.0	Sales-Desktop	Sales-Desktop-Catalog	Private	XenVD17box-001	192.168.10.14	VMware-VC	CITRIX\Finance	EXCL-1.Citrix.egininnovations.com	Personal vDisk	Machine Creation Services	-	-	Agent Shutdown	8/21/2013 11:21:06 PM

Figure 8.19: The detailed diagnosis of the Last deregistration machines measure

The detailed diagnosis of the *Recent deregistration machines* measure if enabled, lists the name of the machine, IP address, OS type and version, the delivery group and catalog to which the machine belongs, the desktop kind, the hosting server on which the machine operates, the hypervisor

connection, the user who is currently accessing the session, name of the controller, the location of the changes made by the user, provisioning type, the name of the applications published on the machine if the machine is a XenAPP, the reason for the machine to be deregistered from the broker, the time of deregistration etc.

Shows the list of recently last deregistration machines																			
TIME	MACHINE NAME	MACHINE DNS NAME	IP ADDRESS	OS TYPE	OS VERSION	DELIVERY GROUP NAME	CATALOG NAME	DESKTOP KIND	HOSTED MACHINE NAME	HOSTING SERVER NAME	HYPERVERISOR CONNECTION NAME	SESSION USERNAME	CONTROLLER NAME	PERSIST ON CHANGES	PROVISIONING TYPE	PUBLISHED APPLICATIONS	PUBLISHED NAME	REASON	TIME
2013-09-16 19:26:58	CITRIX\CTX-EXCL3	CTX-EXCL3.Citrix.eGinnovations.com	192.168.8.126	Windows 2008 R2 Standard	6.1.7601 Service Pack 1	XenApp	XenApp	Shared	Win2K8R2\EXCL3 [8-128]	memoreserver61\10.165	Xenserver	-	EXCL-1.Citrix.eGinnovations.com	On local disk	Manual	Editplus,Explore,Notepad,VMware View Client	-	ContactLost 9/17/2013 7:47:05 AM	

Figure 8.20: The detailed diagnosis of the Recent deregistration machines measure

8.4.2 Delivery Groups - Site Test

To determine the maintenance mode of each delivery group managed by every controller in the monitored Delivery Controller site, and to understand the number, nature, and usage of machines within each group in a site, use the Delivery Groups - Site Test.

Target of the test : A Citrix Delivery Controller 7.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for each delivery group managed by every broker in the site being monitored.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the specified host listens to.
Username	In order to monitor the target Delivery Controller 7, eG requires a special user with the following privileges; <ul style="list-style-type: none"> The <i>All</i> scope and <i>read-only</i> privileges The <i>Allow log on locally</i> security privilege on the Delivery Controller host

The steps for assigning such privileges to a user are discussed in the [How to Monitor Citrix Delivery Controller 7 Using eG Enterprise?](#) chapter. Specify the name of such a user, here.

Parameter	Description
Password	Specify the password for the user specified in the Username text box, here.
Confirm Password	Confirm the Password by retying it here.
Domain	Here, specify the domain to which the user specified in the Username text box belongs to.
Report by machine Type	By default, this flag is set to Yes indicating that the individual descriptors of this test - i.e., the delivery groups- are classified based on their machine type; in other words, the delivery groups will be listed either under Server OS Machines or Desktop OS Machines based on their machine type. If you do not want to group the delivery groups based on their machine types, set this flag to No .
Show Available Machines DD	By default, this flag is set to No . This implies that by default, detailed metrics will not be available for the Available machines measure of this test. To enable detailed diagnosis for this measure, you can set this flag to Yes . In this case, you will be able to view the complete details of all machines that are currently available in each delivery group managed by every broker in the site.
Show Registered Machines DD	By default, this flag is set to No . This implies that by default, detailed metrics will not be available for Registered machines measure of this test. To enable detailed diagnosis for this measure, you can set this flag to Yes . In this case, you will be able to view the complete details of the machines (in each delivery group) that are currently registered with every broker in the site.
Show Powered Machines DD	By default, this flag is set to No . This implies that by default, detailed metrics will not be available for Powered on machines measure of this test. To enable detailed diagnosis for this measure, you can set this flag to Yes . In this case, you will be able to view the complete details of the powered on machines in each delivery group that is managed by every broker in the site.
Show Site Wide Information	By default, this flag is set to Yes , indicating that the monitored server is the <i>site</i> server of a broker site. For a site server, this test will report metrics at the site-level - accordingly, a set of metrics will be reported for each delivery group managed by every broker in the site. On the other hand, if the monitored broker is only a <i>member</i> of a site and not the <i>site</i> server, then set this flag to No . In this case, the test will not report any metrics.
Detailed Diagnosis	To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.

Parameter	Description
	<p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation						
Is delivery group available?	Indicates whether this delivery group is available or not.		<p>This measure reports the value Yes if a delivery group is available, and reports No if it is not available.</p> <p>The numeric values that correspond to the above-mentioned Measure Values are as follows:</p> <table border="1"> <thead> <tr> <th>Measure Value</th> <th>Numeric Value</th> </tr> </thead> <tbody> <tr> <td>Yes</td> <td>1</td> </tr> <tr> <td>No</td> <td>0</td> </tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned Measure Values while indicating the availability of the delivery group. However, the graph of this measure will represent the same using the numeric equivalents – 1 and 0 only.</p> <p>The detailed diagnosis of this measure if enabled, lists the name of the delivery group, the description, the desktop kind, whether Secure ICA is required, the number of sessions</p>	Measure Value	Numeric Value	Yes	1	No	0
Measure Value	Numeric Value								
Yes	1								
No	0								

Measurement	Description	Measurement Unit	Interpretation						
			<p>supported, whether the machine needs to be shut down after use, Powered on status of the machine if user is assigned, Powered on status of the machine during peak period if user is assigned and the published name of the machine.</p>						
Is delivery group in maintenance mode?	Indicates whether this delivery group is in a maintenance mode or not.		<p>Delivery groups are typically put on maintenance mode, if the connections to the machines within the group are to be temporarily stopped so that maintenance tasks are carried out.</p> <p>XenDesktop has no control over delivery groups that are in maintenance mode. No user can log on to a machine in this state.</p> <p>This measure reports the value <i>Yes</i> if a delivery group is in the maintenance mode, and reports <i>No</i> if it is not. The numeric values that correspond to the above-mentioned Measure Values are as follows:</p> <table border="1"> <thead> <tr> <th>Measure Value</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Yes</td><td>1</td></tr> <tr> <td>No</td><td>0</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above-mentioned Measure Values while indicating the maintenance status of the desktop group. However, the graph of this measure will represent the maintenance modes using the numeric equivalents – 1 and 0 only.</p>	Measure Value	Numeric Value	Yes	1	No	0
Measure Value	Numeric Value								
Yes	1								
No	0								
Total machines	Indicates the total number	Number							

Measurement	Description	Measurement Unit	Interpretation
	of machines in this group.		
Available machines	Indicates the number of machines in this delivery group that are available for a new user to connect to.	Number	Ideally, this value should be high. The detailed diagnosis of this measure will reveal the complete details of the available desktops, such as, the desktop name, IP address, the desktop type, the catalog to which the desktop belongs, the hosting server on which the desktop operates, etc.
Used machines	Indicates the number of machines in this group that are currently used by users.	Number	The detailed diagnosis of this measure provides complete details of the machines in use such as the machine name, the delivery group and catalog to which it belongs, the operating system it runs on, the DNS server with which it communicates, and the machine type - whether Private or Shared.
Percentage of used machines	Indicates the percentage of machines in this group that are currently in use by users.	Percent	Ideally, the value of this measure should be low. A value close to 100% indicates that the delivery group is about to run out of free machines. Owing to the absence of unused machines, other users who have been assigned to this delivery group will be denied access to the group upon login. Moreover, high usage of a delivery group may also drain the corresponding hosting infrastructure of its physical and virtual resources.
Disconnected machines	Indicates the number of machines that are disconnected from this delivery group.	Number	The detailed diagnosis of this measure will reveal the complete details of the disconnected machines, such as, the machine name, IP address, OS type, OS version, the desktop type, the delivery group to which the machine belongs, the catalog to which the machine belongs, the hosting server on

Measurement	Description	Measurement Unit	Interpretation
			which the machine operates, the hypervisor connection, the name of the controller, location of the changes made by the user, provisioning type of this machine etc.
Preparing machines	Indicates the number of machines in this group that are currently preparing sessions for users.	Number	
Pending update machines	Indicates the number of machines managed by this delivery group to which updates are currently pending.	Number	Use the detailed diagnosis of this measure to know which machines are awaiting updates.
Machines in maintenance mode	Indicates the number of machines in this group that are currently under maintenance.	Number	
Registered machines	Indicates the number of machines that are currently registered with this delivery group.	Number	
Unregistered machines	Indicates the number of machines that are configured in this delivery group but are in an unregistered state with this broker.	Number	Use the detailed diagnosis of this measure to figure out the machines that were unregistered with the broker, the name of the delivery group and catalog to which the machine belongs to etc.
Agent error machines	Indicates the number of machines that are in an AgentError state in this delivery group.	Number	
Never registered machines	Indicates the number of machines that are not registered properly with the broker although they are configured in this delivery	Number	

Measurement	Description	Measurement Unit	Interpretation
	group.		
High CPU machines	Indicates the number of machines managed by this delivery group that are currently consuming CPU resources excessively.	Number	A low value is desired for this measure. Use the detailed diagnosis of this measure to know which machines are running CPU-intensive applications.
High latency machines	Indicates the number of machines managed by this delivery group that are currently experiencing high network latencies.	Number	A low value is desired for this measure. Use the detailed diagnosis of this measure to know which machines are experiencing high latencies.
High profile load time machines	Indicates the number of machines managed by this delivery group that are currently taking too long a time to load profiles.	Number	A low value is desired for this measure. Use the detailed diagnosis of this measure to know which machines are facing issues when loading profiles.
Powered on machines	Indicates the number of machines in this desktop group that are currently powered on.	Number	Use the detailed diagnosis of this measure to know which machines are currently powered on.
Suspended machines	Indicates the number of machines in this delivery group that are currently in the Suspended state.	Number	Use the detailed diagnosis of this measure to know which machines are currently in the Suspended state.
Powered off machines	Indicates the number of machines in this delivery group that are currently powered off.	Number	Use the detailed diagnosis of this measure to know which machines are currently powered off.
Unavailable machines	Indicates the number of machines in the following power states: <ul style="list-style-type: none"> • Unavailable • Unmanaged • Unknown 	Number	A low value is desired for this measure. The detailed diagnosis of this measure will reveal the complete details of the unavailable desktops, such as, the desktop name, IP address, the desktop type, the catalog to which the desktop belongs, the hosting server on which the desktop operates, etc.

Measurement	Description	Measurement Unit	Interpretation
Power action pending machines	Indicates the number of machines in this delivery group on which the power actions are pending.		
Last connection failed machines	Indicates the number of machines to which the last connection attempt failed.	Number	A low value is desired for this measure. Use the detailed diagnosis of this measure to know which machines could not be connected to recently.
Recent connection failed machines	Indicates the number of machines to which connection attempts failed during the last measurement period.	Number	
Last deregistration machines	Indicates the number of machines that were the last to be deregistered from this broker.	Number	The detailed diagnosis of this measure, if enabled, lists the name of the machine, IP address, OS type and version, the delivery group and catalog to which the machine belongs, the desktop kind, the hosting server on which the machine operates, the hypervisor connection, the user who is currently accessing the session, name of the controller, the location of the changes made by the user, provisioning type, the applications published on the machine if the machine is a XenAPP, the reason for deregistration of the machine and the actual time of deregistration etc.
Recent deregistration machines	Indicates the number of machines that were the deregistered from this broker during the last measurement period.	Number	
Last error machines	Indicates the number of machines on which errors were detected last.	Number	

Measurement	Description	Measurement Unit	Interpretation
Recent error machines	Indicates the machines on which errors were detected during the last measurement period.	Number	

The detailed diagnosis of the *Is delivery group available?* measure lists the name of the delivery group, the description, the desktop kind, whether Secure ICA is required, the number of sessions supported, whether the machine needs to be shut down after use, Powered on status of the machine if user is assigned, Powered on status of the machine during peak period if user is assigned and the published name of the machine.

TIME	DELIVERY GROUP NAME	DESCRIPTION	DESKTOP KIND	SECURE ICA REQUIRED	SESSION SUPPORT	SHUTDOWN AFTER USE	POWER ON ASSIGNED	POWER ON ASSIGNED DURING PEAK	PUBLISHED NAME
2013-09-18 01:38:20	Sales-Desktop	XenDesktop	Private	False	Single Session	False	True	False	-
2013-09-18 01:33:20	Sales-Desktop	XenDesktop	Private	False	Single Session	False	True	False	-
2013-09-18 01:28:14	Sales-Desktop	XenDesktop	Private	False	Single Session	False	True	False	-
2013-09-18 01:23:05	Sales-Desktop	XenDesktop	Private	False	Single Session	False	True	False	-
2013-09-18 01:18:03	Sales-Desktop	XenDesktop	Private	False	Single Session	False	True	False	-
2013-09-18 01:13:27	Sales-Desktop	XenDesktop	Private	False	Single Session	False	True	False	-
2013-09-18 01:08:27	Sales-Desktop	XenDesktop	Private	False	Single Session	False	True	False	-
2013-09-18 01:03:27	Sales-Desktop	XenDesktop	Private	False	Single Session	False	True	False	-
2013-09-18 00:58:45	Sales-Desktop	XenDesktop	Private	False	Single Session	False	True	False	-
2013-09-18 00:53:50	Sales-Desktop	XenDesktop	Private	False	Single Session	False	True	False	-
2013-09-18 00:48:29	Sales-Desktop	XenDesktop	Private	False	Single Session	False	True	False	-
2013-09-18 00:43:21	Sales-Desktop	XenDesktop	Private	False	Single Session	False	True	False	-

Figure 8.21: The detailed diagnosis of the *Is delivery group available?* measure

The detailed diagnosis of the *Disconnected machines* measure will reveal the complete details of the disconnected machines, such as, the machine name, IP address, OS type, OS version, the desktop type, the delivery group to which the machine belongs, the catalog to which the machine belongs, the hosting server on which the machine operates, the hypervisor connection, the name of the controller, location of the changes made by the user, provisioning type of this machine etc.

Shows the list of disconnected machines																		
TIME	MACHINE NAME	MACHINE DNS NAME	IP ADDRESS	OS TYPE	OS VERSION	DELIVERY GROUP NAME	CATALOG NAME	DESKTOP KIND	HOSTED MACHINE NAME	HOSTING SERVER NAME	HYPERVERISOR CONNECTION NAME	SESSION USERNAME	CONTROLLER NAME	PERSIST USER CHANGES	PROVISIONING TYPE	PUBLISHED APPLICATIONS	PUBLISHED NAME	
2013-09-18 01:38:20	CITRIX\XenVDI7box-001	XenVDI7box-001.Citrix.eginnovations.com	192.168.8.127	Windows 7	Microsoft Windows NT 6.1.7600.0	Sales-Desktop	Sales-Desktop-Catalog	Private	XenVDI7box-001	192.168.10.14	VMware-VC	CITRIX\finance	EXCL-1.Citrix.eginnovations.com	Personal vDisk	Machine Creation Services	-	-	
2013-09-18 01:33:20	CITRIX\XenVDI7box-001	XenVDI7box-001.Citrix.eginnovations.com	192.168.8.127	Windows 7	Microsoft Windows NT 6.1.7600.0	Sales-Desktop	Sales-Desktop-Catalog	Private	XenVDI7box-001	192.168.10.14	VMware-VC	CITRIX\finance	EXCL-1.Citrix.eginnovations.com	Personal vDisk	Machine Creation Services	-	-	
2013-09-18 01:28:14	CITRIX\XenVDI7box-001	XenVDI7box-001.Citrix.eginnovations.com	192.168.8.127	Windows 7	Microsoft Windows NT 6.1.7600.0	Sales-Desktop	Sales-Desktop-Catalog	Private	XenVDI7box-001	192.168.10.14	VMware-VC	CITRIX\finance	EXCL-1.Citrix.eginnovations.com	Personal vDisk	Machine Creation Services	-	-	
2013-09-18 01:23:05	CITRIX\XenVDI7box-001	XenVDI7box-001.Citrix.eginnovations.com	192.168.8.127	Windows 7	Microsoft Windows NT 6.1.7600.0	Sales-Desktop	Sales-Desktop-Catalog	Private	XenVDI7box-001	192.168.10.14	VMware-VC	CITRIX\finance	EXCL-1.Citrix.eginnovations.com	Personal vDisk	Machine Creation Services	-	-	

Figure 8.22: The detailed diagnosis of the Disconnected machines measure

The detailed diagnosis of the *Last deregistration machines* measure, if enabled, lists the name of the machine, IP address, OS type and version, the delivery group and catalog to which the machine belongs, the desktop kind, the hosting server on which the machine operates, the hypervisor connection, the user who is currently accessing the session, name of the controller, the location of the changes made by the user, provisioning type, the applications published on the machine if the machine is a XenAPP, the reason for deregistration of the machine and the actual time of deregistration etc.

Shows the list of last deregistration machines																			
TIME	MACHINE NAME	MACHINE DNS NAME	IP ADDRESS	OS TYPE	OS VERSION	DELIVERY GROUP NAME	CATALOG NAME	DESKTOP KIND	HOSTED MACHINE NAME	HOSTING SERVER NAME	HYPERVERISOR CONNECTION NAME	SESSION USERNAME	CONTROLLER NAME	PERSIST USER CHANGES	PROVISIONING TYPE	PUBLISHED APPLICATIONS	PUBLISHED NAME	REASON	TIME
2013-09-18 01:42:59	CITRIX\XenVDI7box-001	XenVDI7box-001.Citrix.eginnovations.com	192.168.8.127	Windows 7	Microsoft Windows NT 6.1.7600.0	Sales-Desktop	Sales-Desktop-Catalog	Private	XenVDI7box-001	192.168.10.14	VMware-VC	CITRIX\finance	EXCL-1.Citrix.eginnovations.com	Personal vDisk	Machine Creation Services	-	-	AgentShutdown 8/21/2013 11:21:06 PM	
2013-09-18 01:38:20	CITRIX\XenVDI7box-001	XenVDI7box-001.Citrix.eginnovations.com	192.168.8.127	Windows 7	Microsoft Windows NT 6.1.7600.0	Sales-Desktop	Sales-Desktop-Catalog	Private	XenVDI7box-001	192.168.10.14	VMware-VC	CITRIX\finance	EXCL-1.Citrix.eginnovations.com	Personal vDisk	Machine Creation Services	-	-	AgentShutdown 8/21/2013 11:21:06 PM	
2013-09-18 01:33:20	CITRIX\XenVDI7box-001	XenVDI7box-001.Citrix.eginnovations.com	192.168.8.127	Windows 7	Microsoft Windows NT 6.1.7600.0	Sales-Desktop	Sales-Desktop-Catalog	Private	XenVDI7box-001	192.168.10.14	VMware-VC	CITRIX\finance	EXCL-1.Citrix.eginnovations.com	Personal vDisk	Machine Creation Services	-	-	AgentShutdown 8/21/2013 11:21:06 PM	
2013-09-18 01:28:14	CITRIX\XenVDI7box-001	XenVDI7box-001.Citrix.eginnovations.com	192.168.8.127	Windows 7	Microsoft Windows NT 6.1.7600.0	Sales-Desktop	Sales-Desktop-Catalog	Private	XenVDI7box-001	192.168.10.14	VMware-VC	CITRIX\finance	EXCL-1.Citrix.eginnovations.com	Personal vDisk	Machine Creation Services	-	-	AgentShutdown 8/21/2013 11:21:06 PM	
2013-09-18 01:23:05	CITRIX\XenVDI7box-001	XenVDI7box-001.Citrix.eginnovations.com	192.168.8.127	Windows 7	Microsoft Windows NT 6.1.7600.0	Sales-Desktop	Sales-Desktop-Catalog	Private	XenVDI7box-001	192.168.10.14	VMware-VC	CITRIX\finance	EXCL-1.Citrix.eginnovations.com	Personal vDisk	Machine Creation Services	-	-	AgentShutdown 8/21/2013 11:21:06 PM	
2013-09-18 01:18:03	CITRIX\XenVDI7box-001	XenVDI7box-001.Citrix.eginnovations.com	192.168.8.127	Windows 7	Microsoft Windows NT 6.1.7600.0	Sales-Desktop	Sales-Desktop-Catalog	Private	XenVDI7box-001	192.168.10.14	VMware-VC	CITRIX\finance	EXCL-1.Citrix.eginnovations.com	Personal vDisk	Machine Creation Services	-	-	AgentShutdown 8/21/2013 11:21:06 PM	
2013-09-18 01:13:27	CITRIX\XenVDI7box-001	XenVDI7box-001.Citrix.eginnovations.com	192.168.8.127	Windows	Microsoft	Sales-Desktop	Sales-Desktop-Catalog	Private	XenVDI7box-001	192.168.10.14	VMware-VC	CITRIX\finance	EXCL-1.Citrix.eginnovations.com	Personal vDisk	Machine Creation Services	-	-	AgentShutdown 8/21/2013 11:21:06 PM	

Figure 8.23: The detailed diagnosis of the Last deregistration machines measure

8.4.3 Brokering Machines Test

Collections of desktops or physical computers are managed as a single entity called a machine catalog. To deliver desktops and applications to users, the machine administrator creates a catalog of machines and the assignment administrator allocates machines from the machine catalog to users by creating delivery groups.

For each catalog managed by a broker, this test reports the number of machines available, the number of registered machines, those machines that are not registered, the machines that are currently powered on, powered off, those in Agent error state etc. In addition, using this test, you can

figure out the number of sessions on each catalog, the sessions that are established and the sessions that are currently pending. The load on each catalog can thus be ascertained.

Target of the test : A Citrix Delivery Controller 7.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for each catalog that is to be monitored.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the specified host listens to. By default, this is 80.
Username	In order to monitor the target Delivery Controller 7, eG requires a special user with the following privileges: <ul style="list-style-type: none"> • The <i>All</i> scope and <i>read-only</i> privileges • The <i>Allow log on locally</i> security privilege on the Delivery Controller host The steps for assigning such privileges to a user are discussed in the How to Monitor Citrix Delivery Controller 7 Using eG Enterprise? chapter. Specify the name of such a user, here.
Password	Specify the password for the user specified in the Username text box, here.
Confirm Password	Confirm the Password by retyping it here.
Domain	Here, specify the domain to which the user specified in the Username text box belongs to.
Show Total Machines DD	By default, this flag is set to No . This implies that by default, detailed metrics will not be available for the Total sessions measure of this test. To enable detailed diagnosis for this measure, you can set this flag to Yes . In this case, you will be able to view the complete details of all the sessions related to each catalog of the monitored broker.
Show Total Sessions DD	By default, this flag is set to No . This implies that by default, detailed metrics will not be available for the Total sessions measure of this test. To enable detailed diagnosis for this measure, you can set this flag to Yes . In this case, you will be able to view the complete details of all the sessions related to each catalog of the monitored broker.
Report by machine	By default, this flag is set to Yes indicating that the individual descriptors of this test -

Parameter	Description
Type	i.e., the delivery groups- are classified based on their machine type; in other words, the delivery groups will be listed either under Server OS Machines or Desktop OS Machines based on their machine type. If you do not want to group the delivery groups based on their machine types, set this flag to No .
Show Registered Machines DD	By default, this flag is set to No . This implies that by default, detailed metrics will not be available for Registered machines measure of this test. To enable detailed diagnosis for this measure, you can set this flag to Yes . In this case, you will be able to view the complete details of the machines (in each catalog) that are currently registered with the broker being monitored.
Show Powered On Machines DD	By default, this flag is set to No . This implies that by default, detailed metrics will not be available for Powered on machines measure of this test. To enable detailed diagnosis for this measure, you can set this flag to Yes . In this case, you will be able to view the complete details of the powered on machines in each catalog configured on the monitored broker.
Detailed Diagnosis	<p>To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Total machines	Indicates the total number of machines in this catalog.	Number	The detailed diagnosis of this measure, if enabled, reveals the details of each of the machines in a catalog.
Entitled machines	Indicates the total number of machines that are currently assigned to users in	Number	Users can be explicitly assigned to the machines or

Measurement	Description	Measurement Unit	Interpretation
	this catalog.		<p>can be assigned based on the first use of the machine.</p> <p>The detailed diagnosis of this measure if enabled, lists the name of the machine, the delivery group and catalog to which the machine belongs, the power state of the machine, the IP address, the OS on which the machine operates and the version, the location where the changes made by the user is stored, the user active on the session, the version of the agent, the applications published on the machine etc.</p>
Not entitled machines	Indicates the number of machines in this catalog that are not assigned to any users.	Number	
Registered machines	Indicates the number of machines in this catalog that are currently registered with the broker.	Number	
Unregistered machines	Indicates the number of machines in this catalog that are currently not registered with the broker.	Number	A high value for this measure indicates that the machines are not provisioned to the users and the applications are not published which eventually results in a poor end user experience.
Agent error machines	Indicates the number of machines in this catalog that are currently in the <i>AgentError</i> state.	Number	An <i>AgentError</i> is reported if the Virtual Desktop Agent itself is experiencing issues in its operations.
Powered on machines	Indicates the number of machines that are currently powered on in this	Number	

Measurement	Description	Measurement Unit	Interpretation
	catalog.		
Powered off machines	Indicates the number of machines that are currently powered off in this catalog.	Number	
Machines with suspended power state	Indicates the number of machines in this catalog that are currently in the Suspended state.	Number	
Machines with unknown power state:	Indicates the number of machines in this catalog that are currently in <i>Unknown/Unmanaged/Unavailable</i> states.	Number	
Maintenance mode machines	Indicates the total number of machines in this catalog that are currently under maintenance - i.e., the maintenance mode of the virtual desktop is enabled.	Number	
Total sessions	Indicates the total number of user sessions across all the machines available in this catalog.	Number	This measure is a sum of the <i>Established sessions</i> and the <i>Pending sessions</i> measures.
Established sessions	Indicates the number of user sessions that are currently established on the machines of this catalog.	Number	The detailed diagnosis of this measure if enabled, lists the name of the machine, the delivery group and catalog to which the machine belongs, the number of sessions established through each machine, the IP address, the OS on which the machine operates and the version, the location where the changes made by the user is stored, the user active on the session, the version of the agent, the applications published on the machine etc.
Pending sessions	Indicates the number of user sessions	Number	

Measurement	Description	Measurement Unit	Interpretation
	that are pending or waiting to be established on the machines of this catalog.		

The detailed diagnosis of the *Entitled machines* measure if enabled, lists the name of the machine, the delivery group and catalog to which the machine belongs, the power state of the machine, the IP address, the OS on which the machine operates and the version, the location where the changes made by the user is stored, the user active on the session, the version of the agent, the applications published on the machine etc.

Shows the assigned machine details																
TIME	CATALOG NAME	DELIVERY GROUP NAME	DESKTOP KIND	MACHINE DNS NAME	POWER STATE	IP ADDRESS	HOSTED MACHINE NAME	HYPERVERSION CONNECTION NAME	HOSTING SERVER NAME	OS TYPE	OS VERSION	PERSIST USER CHANGES	SESSION USERNAME	AGENT VERSION	PUBLISHED APPLICATIONS	
2013-09-18 02:11:31	Sales-Desktop-Catalog	Sales	Private	excalib7001.Citrix.eginnovations.com	On	192.168.8.248	excalib7001	VMware-VC	192.168.10.14	Windows 7	Microsoft Windows NT 6.1.7600.0	Personal vDisk	-	7.0.0.3018	-	
	Sales-Desktop-Catalog	Sales-Desktop	Private	XenVDI7box-001.Citrix.eginnovations.com	On	192.168.8.127	XenVDI7box-001	VMware-VC	192.168.10.14	Windows 7	Microsoft Windows NT 6.1.7600.0	Personal vDisk	CITRIX\finance	7.0.0.3018		

Figure 8.24: The detailed diagnosis of the Entitled machines measure

The detailed diagnosis of the *Established sessions* measure if enabled, lists the name of the machine, the delivery group and catalog to which the machine belongs, the number of sessions established through each machine, the IP address, the OS on which the machine operates and the version, the location where the changes made by the user is stored, the user active on the session, the version of the agent, the applications published on the machine etc.

Shows the established session details																
TIME	CATALOG NAME	DELIVERY GROUP NAME	DESKTOP KIND	MACHINE DNS NAME	ESTABLISHED SESSIONS	IP ADDRESS	HOSTED MACHINE NAME	HYPERVERSION CONNECTION NAME	HOSTING SERVER NAME	OS TYPE	OS VERSION	PERSIST USER CHANGES	SESSION USERNAME	AGENT VERSION	PUBLISHED APPLICATIONS	
2013-09-18 02:11:31	Sales-Desktop-Catalog	Sales-Desktop	Private	XenVDI7box-001.Citrix.eginnovations.com	1	192.168.8.127	XenVDI7box-001	VMware-VC	192.168.10.14	Windows 7	Microsoft Windows NT 6.1.7600.0	Personal vDisk	CITRIX\finance	7.0.0.3018	-	
2013-09-18 02:01:26	Sales-Desktop-Catalog	Sales-Desktop	Private	XenVDI7box-001.Citrix.eginnovations.com	1	192.168.8.127	XenVDI7box-001	VMware-VC	192.168.10.14	Windows 7	Microsoft Windows NT 6.1.7600.0	Personal vDisk	CITRIX\finance	7.0.0.3018	-	
2013-09-18 01:51:17	Sales-Desktop-Catalog	Sales-Desktop	Private	XenVDI7box-001.Citrix.eginnovations.com	1	192.168.8.127	XenVDI7box-001	VMware-VC	192.168.10.14	Windows 7	Microsoft Windows NT 6.1.7600.0	Personal vDisk	CITRIX\finance	7.0.0.3018	-	

Figure 8.25: The detailed diagnosis of the Established sessions measure

8.4.4 Brokering Machines Test

Collections of desktops or physical computers are managed as a single entity called a machine catalog. To deliver desktops and applications to users, the machine administrator creates a catalog

of machines and the assignment administrator allocates machines from the machine catalog to users by creating delivery groups.

For each catalog managed by the brokers of this site, this test reports the number of machines available, the number of registered machines, those machines that are not registered, the machines that are currently powered on, powered off, those in Agent error state etc. In addition, using this test, you can figure out the number of sessions on each catalog, the sessions that are established and the sessions that are currently pending. The load on each catalog can thus be ascertained.

Target of the test : A Citrix Delivery Controller 7.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for each catalog that is to be monitored.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the specified host listens to. By default, this is 80.
Username	In order to monitor the target Delivery Controller 7, eG requires a special user with the following privileges; <ul style="list-style-type: none"> • The <i>All</i> scope and <i>read-only</i> privileges • The <i>Allow log on locally</i> security privilege on the Delivery Controller host The steps for assigning such privileges to a user are discussed in the How to Monitor Citrix Delivery Controller 7 Using eG Enterprise? chapter. Specify the name of such a user, here.
Password	Specify the password for the user specified in the Username text box, here.
Confirm Password	Confirm the Password by retyping it here.
Domain	Here, specify the domain to which the user specified in the Username text box belongs to.
Report By Machine Type	By default, this flag is set to Yes indicating that the individual descriptors of this test - i.e., the delivery groups - are classified based on their machine type; in other words, the delivery groups will be listed either under Server OS Machines or Desktop OS Machines based on their machine type. If you do not want to group the delivery groups

Parameter	Description
	based on their machine types, set this flag to No .
Show Site Wide Information	By default, this flag is set to Yes , indicating that the monitored server is the <i>site</i> server of a broker site. For a site server, this test will report metrics at the site-level - accordingly, a set of metrics will be reported for each delivery group managed by every broker in the site. On the other hand, if the monitored broker is only a <i>member</i> of a site and not the <i>site</i> server, then set this flag to No . In this case, the test will not report any metrics.
Show Total Machines DD	By default, this flag is set to No . This implies that by default, detailed metrics will not be available for the Total machines measure of this test. To enable detailed diagnosis for this measure, you can set this flag to Yes . In this case, you will be able to view the complete details of all the machines in each catalog of every broker in the target site.
Show Total Sessions DD	By default, this flag is set to No . This implies that by default, detailed metrics will not be available for the Total sessions measure of this test. To enable detailed diagnosis for this measure, you can set this flag to Yes . In this case, you will be able to view the complete details of all the sessions related to each catalog of every broker in the target site.
Show Registered Machines DD	By default, this flag is set to No . This implies that by default, detailed metrics will not be available for Registered machines measure of this test. To enable detailed diagnosis for this measure, you can set this flag to Yes . In this case, you will be able to view the complete details of the machines (in each catalog) that are currently registered with a broker in this site.
Show Powered On Machines DD	By default, this flag is set to No . This implies that by default, detailed metrics will not be available for Powered on machines measure of this test. To enable detailed diagnosis for this measure, you can set this flag to Yes . In this case, you will be able to view the complete details of the powered on machines in each catalog configured on a broker in this site.
Detailed Diagnosis	<p>To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability

Parameter	Description
	<ul style="list-style-type: none"> Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Meas-urement	Description	Meas-urement Unit	Interpretation
Total machines	Indicates the total number of machines that are currently available in this catalog.	Number	The detailed diagnosis of this measure, if enabled, reveals the details of each of the machines in a catalog.
Entitled machines	Indicates the total number of machines that are currently assigned to users in this catalog.	Number	<p>Users can be explicitly assigned to the machines or can be assigned based on the first use of the machine.</p> <p>The detailed diagnosis of this measure if enabled, lists the name of the machine, the delivery group and catalog to which the machine belongs, the zone to which the catalog belongs, the power state of the machine., the IP address, the OS on which the machine operates and the version, the location where the changes made by the user is stored, the user active on the session, the version of the agent, the applications published on the machine etc.</p>
Machines not entitled	Indicates the number of machines in this catalog that are not assigned to any users.	Number	Use the detailed diagnosis of this measure to know which machines in this catalog are not assigned to any user.
Registered	Indicates the number of machines	Number	If the detailed diagnosis of this

Meas-urement	Description	Meas-urement Unit	Interpretation
machines	that are currently registered with the broker of this catalog.		measure is enabled, then you can use it to quickly identify the machines in this catalog that are currently registered with the broker.
Unregistered machines	Indicates the number of machines that are currently not registered with the broker of this catalog.	Number	<p>A high value for this measure indicates that the virtual desktops are not provisioned to the users and the applications are not published which eventually results in a poor end user experience.</p> <p>Use the detailed diagnosis of this measure to know which machines in this catalog are not registered with the broker.</p>
Machines with agent errors:	Indicates the number of machines that are currently in the AgentError state during the registration process with the broker.	Number	<p>An AgentError is reported if the Virtual Desktop Agent itself is experiencing issues in its operations.</p> <p>Use the detailed diagnosis of this measure to know which machines in this catalog are currently in the AgentError state.</p>
Powered on machines	Indicates the number of machines that are currently powered on in this catalog.	Number	If the detailed diagnosis of this measure is enabled, then you can use it to quickly identify the machines in this catalog that are currently in the powered on state.
Powered off machines	Indicates the number of machines that are currently powered off in this catalog.	Number	The detailed diagnosis of this measure if enabled, lists the name

Meas-urement	Description	Meas-urement Unit	Interpretation
			of the machine, the delivery group and catalog to which the machine belongs, the zone to which the catalog belongs, the desktop kind, the hypervisor on which the machine is hosted, the location used for storing the changes made by the user, the user who is currently active on the session, the agent version, the applications published on the machine etc.
Machines with suspended power state	Indicates the number of machines in this catalog that are currently in the Suspended state.	Number	Use the detailed diagnosis of this measure to know which machines in this catalog are currently in the Suspended state.
Machines with unknown power state	Indicates the number of machines in this catalog that are currently in <i>Unknown/Unmanaged/Unavailable</i> states.	Number	Use the detailed diagnosis of this measure to know which machines in this catalog are currently in the <i>Unknown/Unmanaged/Unavailable</i> states.
Machines in maintenance mode	Indicates the total number of machines that are currently under maintenance i.e, the maintenance mode of the virtual desktop is enabled.	Number	Use the detailed diagnosis of this measure to know which machines in this catalog are currently under maintenance.
Total sessions	Indicates the total number of user sessions across all the machines available in this catalog.	Number	<p>This measure is a sum of the <i>Established sessions</i> and the <i>Pending sessions</i> measures.</p> <p>If the detailed diagnosis of this measure is enabled, then you can use it to quickly view the complete details of the sessions on all machines in this catalog.</p>

Meas-urement	Description	Meas-urement Unit	Interpretation
Established sessions	Indicates the number of user sessions that are currently established on the machines of this catalog.	Number	The detailed diagnosis of this measure if enabled, lists the name of the machine, the delivery group and catalog to which the machine belongs, the zone to which the catalog belongs, the number of sessions established through each machine, the IP address, the OS on which the machine operates and the version, the location where the changes made by the user is stored, the user active on the session, the version of the agent, the applications published on the machine etc.
Pending sessions	Indicates the number of user sessions that are pending or waiting to be established on the machines of this catalog.	Number	Use the detailed diagnosis of this measure for the complete details of the pending sessions.

The detailed diagnosis of the *Entitled machines* measure if enabled, lists the name of the machine, the delivery group and catalog to which the machine belongs, the zone to which the catalog belongs, the power state of the machine., the IP address, the OS on which the machine operates and the version, the location where the changes made by the user is stored, the user active on the session, the version of the agent, the applications published on the machine etc.

Shows the list of entitled machines							
CATALOG	DELIVERY GROUP	DESKTOP KIND	DNS NAME	POWER STATE	IP ADDRESS	HOSTED MACHINE NAME	HYPERVERISOR CONNECTION NAME
Jan 02, 2017 18:52:35							
Windows7	Win7	Static	Windows7xd111.egin.local	Unmanaged	192.168.9.85	-	-

Figure 8.26: The detailed diagnosis of the Entitled machines measure for the site

The detailed diagnosis of the *Established sessions* measure if enabled, lists the name of the machine, the delivery group and catalog to which the machine belongs, the zone to which the catalog belongs, the number of sessions established through each machine, the IP address, the OS

on which the machine operates and the version, the location where the changes made by the user is stored, the user active on the session, the version of the agent, the applications published on the machine etc.

Shows the list of established sessions							
CATALOG	DELIVERY GROUP	DESKTOP KIND	DNS NAME	ESTABLISHED SESSIONS	IP ADDRESS	HOSTED MACHINE NAME	HYPERSVOR CONNEC NAME
Jan 02, 2017 18:52:35							
Windows7	Win7	Static	Windows7xd111.egin.local	1	192.168.9.85	-	-

Figure 8.27: The detailed diagnosis of the Established sessions measure of the site

The detailed diagnosis of the *Machines with unknown power state* measure if enabled, lists the name of the machine, the delivery group and catalog to which the machine belongs, the zone to which the catalog belongs, the desktop kind, the hypervisor on which the machine is hosted, the location used for storing the changes made by the user, the user who is currently active on the session, the agent version, the applications published on the machine etc.

Shows the list of machines with unknown power state							
CATALOG	DELIVERY GROUP	DESKTOP KIND	DNS NAME	POWER STATE	IP ADDRESS	HOSTED MACHINE NAME	HYPERSVOR CONNECTION NAME
Jan 02, 2017 18:52:35							
Windows7	Win7	Static	Windows7xd111.egin.local	Unmanaged	192.168.9.85	-	-

Figure 8.28: The detailed diagnosis of the Machines with unknown power state measure

8.4.5 Machine Catalog Details Test

In XenDesktop, collections of virtual machines (VMs) or physical computers of the same type are managed as a single entity called a catalog. To deliver desktops to users, the machine administrator creates a catalog of machines and the assignment administrator allocates machines from the catalog to users by creating delivery groups.

This test auto-discovers the catalogs managed by the XenDesktop site being monitored, and reports useful statistics related to each catalog, which reveal:

- The catalog type;
- The type of desktops allocated to each catalog;
- The availability, usage, and assignment of desktops in each catalog

Target of the test : A Citrix Delivery Controller 7.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for every catalog on each broker configured within a site.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the specified host listens to.
Username	In order to monitor the target Delivery Controller 7, eG requires a special user with the following privileges; <ul style="list-style-type: none"> • The <i>All</i> scope and <i>read-only</i> privileges • The <i>Allow log on locally</i> security privilege on the Delivery Controller host The steps for assigning such privileges to a user are discussed in the How to Monitor Citrix Delivery Controller 7 Using eG Enterprise? chapter. Specify the name of such a user, here.
Password	Specify the password for the user specified in the Username text box, here.
Confirm Password	Confirm the Password by retyping it here.
Domain	Here, specify the domain to which the user specified in the Username text box belongs to.
Report by Machine Type	By default, this flag is set to Yes indicating that the individual descriptors of this test - i.e., the catalogs - are classified based on their machine type; in other words, the catalogs will be listed either under Server OS Machines or Desktop OS Machines based on their machine type. If you do not want to group the catalogs based on their machine types, set this flag to No .
Detailed Diagnosis	To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option. The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled: <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation						
Allocation type	Indicates the allocation type of the machines available in this catalog.	Number	<p>This measure can report any one of the following values:</p> <ul style="list-style-type: none"> • Static • Permanent • Random • Unknown <p>The table below provides the numeric values that correspond to the allocation types listed above, and a brief description of each type:</p> <div style="border: 1px solid black; padding: 10px; margin-top: 10px;"> <table border="1"> <thead> <tr> <th>Allocation Type</th> <th>Numeric Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Static</td> <td>1</td> <td>Indicates that the machines in this catalog are either assigned by the administrator or assigned on first use to users. This assignment will change only when the administrator explicitly</td> </tr> </tbody> </table> </div>	Allocation Type	Numeric Value	Description	Static	1	Indicates that the machines in this catalog are either assigned by the administrator or assigned on first use to users. This assignment will change only when the administrator explicitly
Allocation Type	Numeric Value	Description							
Static	1	Indicates that the machines in this catalog are either assigned by the administrator or assigned on first use to users. This assignment will change only when the administrator explicitly							

Measurement	Description	Measurement Unit	Interpretation		
			Allocation Type	Numeric Value	Description
					changes the assignments.
			Permanent	2	Indicates that the machines in this catalog are permanently assigned to the user.
			Random	3	Indicates that the machines in this catalog are picked in random and are temporarily assigned to the user.

Note:

By default, this measure reports the **Allocation Types** listed in the table above. However, the graph of this measure will represent the allocation types using their corresponding numeric equivalents – i.e., 1 to 3.

The detailed diagnosis of this measure if enabled, lists the catalog to which the machine belongs, the zone to which the machine catalog belongs, the machine type, the number of sessions supported by the machine i.e, either Single session or

Measurement	Description	Measurement Unit	Interpretation						
			Multi session, the location used for storing user data, the provisioning type and the scopes associated with the chosen catalog.						
Are physical machines?	Indicates whether/not the machines in this catalog are power managed by the broker.		<p>This measure reports a value Yes if the machines are power managed by the broker and No, if otherwise.</p> <p>The table below provides the numeric values that correspond to the above mentioned values:</p> <table border="1"> <thead> <tr> <th>Measure Value</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Yes</td><td>1</td></tr> <tr> <td>No</td><td>0</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports whether the machines are power managed by the broker or not. However, the graph of this measure will be represented using their corresponding numeric equivalents – i.e., 0 or 1.</p>	Measure Value	Numeric Value	Yes	1	No	0
Measure Value	Numeric Value								
Yes	1								
No	0								
Entitled machines used in delivery groups	Indicates the number of assigned machines (to users) in this catalog that are within delivery groups.	Number							
Entitled machines available for delivery groups	Indicates the number of machines in this catalog that are available to users within delivery groups.	Number							
Machines not entitled available for delivery groups	Indicates the number of machines within the delivery groups that are not yet assigned to	Number							

Measurement	Description	Measurement Unit	Interpretation
	users.		
Machines not entitled used in delivery groups	Indicates the number of unassigned machines in this catalog within the delivery groups but are still used in the pool.	Number	
Machines used in delivery groups	Indicates the number of machines in this catalog that are within delivery groups.	Number	
Total machines in catalog	Indicates the total number of machines in this catalog.	Number	

The detailed diagnosis of the *Allocation type* measure if enabled, lists the catalog to which the machine belongs, the zone to which the catalog belongs, the machine type, the number of sessions supported by the machine i.e, either Single session or Multi session, the location used for storing user data, the provisioning type and the scopes associated with the chosen catalog.

Shows the Machine Catalog details									
CATALOG	DESCRIPTION	MACHINE TYPE	SESSION SUPPORT	USER DATA	PROVISIONING TYPE	PVS ADDRESS	PVS DOMAIN	SCOPES	ZONE NAME
Jan 02, 2017 18:04:23									
Win10	-	Desktop OS Machines	Single Session	On local disk	Manual	-	-	-	Primary

Figure 8.29: The detailed diagnosis of the Allocation type measure

8.4.6 Load Evaluator Index Test

A server's load index may be the aggregate of:

- Various computer performance counter based metrics, namely CPU, Memory and Disk Usage
- Session Count

It is designed to indicate how suitable a XenApp Worker is to receive a new user session. It is the Delivery Controller's responsibility to calculate the load index based on the aggregate of the normalized load rule indexes generated by the various load rules. As only the Delivery Controller can

determine the session load, a server's overall load index is calculated on the Delivery Controller and not the Virtual Delivery Agent.

Administrators can use the **Load Evaluator Index** test to periodically evaluate the load on the servers managed by a delivery group. This is imperative to ensure that load is uniformly balanced across the servers. In addition, in times of an overload, this test can help administrators accurately identify which server is overloaded and which resource is the constraint.

Target of the test : A Citrix Delivery Controller 7.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for server OS machine managed by the broker.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the specified host listens to.
Username	In order to monitor the target Delivery Controller 7, eG requires a special user with the following privileges; <ul style="list-style-type: none"> • The <i>All</i> scope and <i>read-only</i> privileges • The <i>Allow log on locally</i> security privilege on the Delivery Controller host The steps for assigning such privileges to a user are discussed in the How to Monitor Citrix Delivery Controller 7 Using eG Enterprise? chapter. Specify the name of such a user, here.
Password	Specify the password for the user specified in the Username text box, here.
Confirm Password	Confirm the Password by retyping it here.
Domain	Here, specify the domain to which the user specified in the Username text box belongs to.
Report by Delivery Group	By default, this flag is set to No indicating that this test reports metrics for every server OS machine in each delivery group configured on the broker. You can set this flag to Yes if you want this test to group the machines by delivery group and display the delivery groups as the primary descriptors. In this case, expanding a delivery group will reveal the secondary descriptors, which are the server OS machines.

Parameter	Description
Detailed Diagnosis	<p>To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Effective load evaluator index	Indicates the load evaluator index of this machine.	Percent	<p>By comparing the value of this measure across server OS machines, you can figure out whether or not load is uniformly balanced across all servers.</p> <p>Use the detailed diagnosis of this measure to view the complete details of this machine and to view the CPU, disk, memory, and session load evaluator index of the machine.</p>
CPU load evaluator index	Indicates the CPU load evaluator index of this server OS machine.	Percent	A high value is indicative of excessive CPU usage by the machine over time.
Memory load evaluator index	Indicates the memory load evaluator index of this server OS machine.	Percent	A high value is indicative of excessive memory usage by the machine over time.
Disk load evaluator index	Indicates the disk load evaluator index of this server OS machine.	Percent	A high value is indicative of excessive disk usage by the machine over time.
Session load evaluator index	Indicates the session count load evaluator index of this server OS machine.	Percent	A high value indicates that the machine has been consistently handling many user sessions.

Use the detailed diagnosis of the *Effective load evaluator index* measure to view the complete details of this machine and to view the CPU, disk, memory, and session load evaluator index of the machine.

Shows the list of machines with load evaluator index details					
MACHINE NAME	DNS NAME	DELIVERY GROUP	OS	OS VERSION	SE
Jan 03, 2017 15:48:12					
CITRIX\2K8R2-XA76	2K8R2-XA76.Citrix.eginnovations.com	eGdev-2k8r2-xa76	Windows 2008 R2 Service Pack 1	Microsoft Windows NT 6.1.7601 Service Pack 1	1

Figure 8.30: The detailed diagnosis of the Effective load evaluator index measure

8.4.7 The Applications Layer

This layer tracks the applications that are published on the site and helps you in identifying the applications that are enabled, the applications that are visible to users, the number of instances of each application that is currently running etc.

Applications	
▼	✓ Applications
✓	Calc-A
✓	Calculator
✓	Command Prompt
✓	gedit
✓	Notepad
✓	Notepad-A
✓	Notepad_Test
✓	Paint
✓	Wordpad
✓	Write_babu

Figure 8.31: The Applications layer

8.4.8 Applications Test

With XenDesktop 7, you provide users with access to information by publishing the following types of resources that can be virtualized on servers or desktops:

- Applications installed on servers running Delivery Controller - 5. When users access them, the published applications appear to be running locally on client devices.
- Streamed applications installed in application profiles and stored on a file server in your App Hub. Users access the profile and virtualize the applications on their client desktops.

- Data files such as Web pages, documents, media files, spreadsheets, and URLs. In XenApp, the combined total of data types you publish is referred to as content.
- The server desktops, so users can access all of the resources available on the server.

All these types of resources are called Published applications.

Whenever users to a virtual desktop complain that they are unable to access one/more published applications, administrators should be able to quickly troubleshoot and figure out the reason for this – is it because the application is disabled on the site? Or is it because the application is not even visible to users?

In addition, administrators should also be able to periodically check how popular an application is (in terms of usage) and accordingly reset its CPU priority level, so that such applications always command more CPU resources and users have no problems accessing or continuously using such applications.

The **Applications** test enables users to perform these checks. This test points administrators to applications that are currently enabled on the site and those applications that are not visible to the users. In addition, this test reports the number of instances of an application that is currently running and the CPU priority level of each application, so that administrators can accurately isolate popular applications and their CPU priority level.

Target of the test : A Citrix Delivery Controller 7.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for each application that is to be monitored.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the specified host listens to. By default, this is 80.
Username	In order to monitor the target Delivery Controller 7, eG requires a special user with the following privileges; <ul style="list-style-type: none"> • The <i>All</i> scope and <i>read-only</i> privileges • The <i>Allow log on locally</i> security privilege on the Delivery Controller host

Parameter	Description
	The steps for assigning such privileges to a user are discussed in the How to Monitor Citrix Delivery Controller 7 Using eG Enterprise? chapter. Specify the name of such a user, here.
Password	Specify the password for the user specified in the Username text box, here.
Confirm Password	Confirm the Password by retyping it here.
Domain	Here, specify the domain to which the user specified in the Username text box belongs to.
Show Site Wise Information	By default, this flag is set to Yes , indicating that the monitored server is the <i>site</i> server of a broker site. For a server which is a site , this test will report metrics at the site-level - accordingly, a set of metrics will be reported for each delivery group managed by every broker in the site. On the other hand, if the monitored broker is only a <i>member</i> of a site and not the <i>site</i> server, then set this flag to No . In this case, the test will not report any metrics.
DD Frequency	Refers to the frequency with which detailed diagnosis measures are to be generated for this test. The default is 1:1 . This indicates that, by default, detailed measures will be generated every time this test runs, and also every time the test detects a problem. You can modify this frequency, if you so desire. Also, if you intend to disable the detailed diagnosis capability for this test, you can do so by specifying none against DD Frequency.
Detailed Diagnosis	To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option. The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled: <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation						
Is application enabled?	Indicates whether/not this application is enabled on this site.		<p>The values that this measure reports and their corresponding numeric values are:</p> <table border="1"> <thead> <tr> <th>Measure Value</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>No</td><td>0</td></tr> <tr> <td>Yes</td><td>1</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the values Yes or No while indicating whether the application is enabled or not in this site. However, the graph of this measure will represent the same using the corresponding numeric equivalents of 0 and 1 only.</p> <p>The detailed diagnosis of this measure if enabled, lists the name and type of the application, the location of the program file and the working directory.</p>	Measure Value	Numeric Value	No	0	Yes	1
Measure Value	Numeric Value								
No	0								
Yes	1								
Is application visible to users?	Indicates whether/not this application is visible to the users of this site.		<p>The values that this measure reports and their corresponding numeric values are:</p> <table border="1"> <thead> <tr> <th>Measure Value</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>No</td><td>0</td></tr> <tr> <td>Yes</td><td>1</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the values Yes or No while indicating whether the application is visible or not in this site. However, the graph of this</p>	Measure Value	Numeric Value	No	0	Yes	1
Measure Value	Numeric Value								
No	0								
Yes	1								

Measurement	Description	Measurement Unit	Interpretation												
			measure will represent the same using the corresponding numeric equivalents of 0 and 1 only.												
Instances currently running	Indicates the number of instances of this application that are currently running in this site.	Number	<p>Comparing the value of this measure across all the applications will help you to identify the application that is most often used by the users.</p> <p>The detailed diagnosis of this measure if enabled, lists the name of the application, the application type, the name of the catalog and delivery group to which the machine belongs, the zone to which the delivery group belongs, the machine ID, the user accessing the application, the client name and IP address, the protocol used for establishing the session, the start time of the session, the number of sessions – if the session is a Single session or a Multiple session etc.</p>												
CPU priority level	Indicates the priority level that is set for the resource usage of this application.		<p>The values that this measure can report and their corresponding numeric values are:</p> <table border="1"> <thead> <tr> <th>Measure Value</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Low</td><td>0</td></tr> <tr> <td>Below Normal</td><td>1</td></tr> <tr> <td>Normal</td><td>2</td></tr> <tr> <td>Above Normal</td><td>3</td></tr> <tr> <td>High</td><td>4</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the above mentioned values while indicating the priority level with which the application has to be processed.</p>	Measure Value	Numeric Value	Low	0	Below Normal	1	Normal	2	Above Normal	3	High	4
Measure Value	Numeric Value														
Low	0														
Below Normal	1														
Normal	2														
Above Normal	3														
High	4														

Measurement	Description	Measurement Unit	Interpretation
			However, the graph of this measure will represent the same using the corresponding numeric equivalents only.

The detailed diagnosis of the *Is application enabled?* measure lists the name and type of the application, the location of the program file and the working directory.

TIME	APPLICATION NAME	DESCRIPTION	APPLICATION TYPE	PROGRAM	WORKING DIRECTORY
2013-09-18 01:21:07	Editplus	-	HostedOnDesktop	%ProgramFiles(x86)%\EditPlus 3\editplus.exe	%ProgramFiles(x86)%\EditPlus 3
2013-09-18 01:15:39	Editplus	-	HostedOnDesktop	%ProgramFiles(x86)%\EditPlus 3\editplus.exe	%ProgramFiles(x86)%\EditPlus 3
2013-09-18 01:10:33	Editplus	-	HostedOnDesktop	%ProgramFiles(x86)%\EditPlus 3\editplus.exe	%ProgramFiles(x86)%\EditPlus 3
2013-09-18 01:05:45	Editplus	-	HostedOnDesktop	%ProgramFiles(x86)%\EditPlus 3\editplus.exe	%ProgramFiles(x86)%\EditPlus 3
2013-09-18 01:00:55	Editplus	-	HostedOnDesktop	%ProgramFiles(x86)%\EditPlus 3\editplus.exe	%ProgramFiles(x86)%\EditPlus 3
2013-09-18 00:56:19	Editplus	-	HostedOnDesktop	%ProgramFiles(x86)%\EditPlus 3\editplus.exe	%ProgramFiles(x86)%\EditPlus 3
2013-09-18 00:51:08	Editplus	-	HostedOnDesktop	%ProgramFiles(x86)%\EditPlus 3\editplus.exe	%ProgramFiles(x86)%\EditPlus 3
2013-09-18 00:46:18	Editplus	-	HostedOnDesktop	%ProgramFiles(x86)%\EditPlus 3\editplus.exe	%ProgramFiles(x86)%\EditPlus 3

Figure 8.32: The detailed diagnosis of the *Is application enabled?* measure

The detailed diagnosis of the *Instances currently running* measure lists the name of the application, the name of the application, the application type, the name of the catalog and delivery group to which the machine belongs to, the machine ID, the user accessing the application, the client name and IP address, the protocol used for establishing the session, the start time of the session, the number of sessions – if the session is a Single session or a Multiple session etc.

Shows the running application details																		
TIME	APPLICATION NAME	DESCRIPTION	APPLICATION TYPE	PROGRAM	WORKING DIRECTORY	MACHINE NAME	HOSTED MACHINE NAME	DELIVERY GROUP NAME	CATALOG NAME	ID	USERNAME	CLIENT NAME	CLIENT IP ADDRESS	PROTOCOL	SESSION STATE	SESSION START TIME	BROKERING TIME	SESSION SUPPORT
2013-09-18 01:21:07	Editplus	-	HostedOnDesktop	%ProgramFiles(x86)%\EditPlus 3\editplus.exe	%ProgramFiles(x86)%\EditPlus 3	CITRIX\CTX-EXCL3	Win2K8R2-ENCL3 [8.126]	XenApp	XenApp	143	CITRIX\cbxuser	EGLAP0024-PC	192.168.9.44	HDX	Disconnected	9/17/2013 7:39:09 AM	-	Multiple Sessions
2013-09-18 01:15:39	Editplus	-	HostedOnDesktop	%ProgramFiles(x86)%\EditPlus 3\editplus.exe	%ProgramFiles(x86)%\EditPlus 3	CITRIX\CTX-EXCL3	Win2K8R2-ENCL3 [8.126]	XenApp	XenApp	143	CITRIX\cbxuser	EGLAP0024-PC	192.168.9.44	HDX	Disconnected	9/17/2013 7:39:09 AM	-	Multiple Sessions
2013-09-18 01:10:33	Editplus	-	HostedOnDesktop	%ProgramFiles(x86)%\EditPlus 3\editplus.exe	%ProgramFiles(x86)%\EditPlus 3	CITRIX\CTX-EXCL3	Win2K8R2-ENCL3 [8.126]	XenApp	XenApp	143	CITRIX\cbxuser	EGLAP0024-PC	192.168.9.44	HDX	Disconnected	9/17/2013 7:39:09 AM	-	Multiple Sessions
2013-09-18 01:05:45	Editplus	-	HostedOnDesktop	%ProgramFiles(x86)%\EditPlus 3\editplus.exe	%ProgramFiles(x86)%\EditPlus 3	CITRIX\CTX-EXCL3	Win2K8R2-ENCL3 [8.126]	XenApp	XenApp	143	CITRIX\cbxuser	EGLAP0024-PC	192.168.9.44	HDX	Disconnected	9/17/2013 7:39:09 AM	-	Multiple Sessions

Figure 8.33: The detailed diagnosis of the Instances currently running measure

8.5 The Users Layer

Using the tests mapped to this layer, you can easily understand the following:

- session wise information for each protocol type of each broker;
- the logins and logouts of each protocol type on the broker;
- site wide information on the sessions of each protocol type;
- the overall logins and logouts of each protocol type on the site; and
- the statistical information on the broker events generated by the target system.

Figure 8.34: The Users layer

8.5.1 Session and Application States Test

In the event of a session overload on XenDesktop, administrators may want to know the type of sessions that may have contributed to the overload – HDX sessions? or RDP sessions? This can be determined using the **Session and Application States** test. For every type of session (HDX and RDP) on the broker, this test reports the total session count and the status of the sessions.

Target of the test : A Citrix Delivery Controller 7.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for each session type; an *All* descriptor also appears, which reports aggregated metrics across all session types.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the specified host listens to.
Username	In order to monitor the target Delivery Controller 7, eG requires a special user with the following privileges; <ul style="list-style-type: none"> • The <i>All</i> scope and <i>read-only</i> privileges • The <i>Allow log on locally</i> security privilege on the Delivery Controller host The steps for assigning such privileges to a user are discussed in the How to Monitor Citrix Delivery Controller 7 Using eG Enterprise? chapter. Specify the name of such a user, here.
Password	Specify the password for the user specified in the Username text box, here.
Confirm Password	Confirm the Password by retyping it here.
Domain	Here, specify the domain to which the user specified in the Username text box belongs to.
Report by Machine Type	By default, this flag is set to Yes indicating that the individual descriptors of this test - i.e., the delivery groups- are classified based on their machine type; in other words, the delivery groups will be listed either under Server OS Machines or Desktop OS Machines based on their machine type. If you do not want to group the delivery groups

Parameter	Description
DD Frequency	<p>based on their machine types, set this flag to No.</p> <p>Refers to the frequency with which detailed diagnosis measures are to be generated for this test. The default is 1:1. This indicates that, by default, detailed measures will be generated every time this test runs, and also every time the test detects a problem. You can modify this frequency, if you so desire. Also, if you intend to disable the detailed diagnosis capability for this test, you can do so by specifying none against DD frequency.</p>
Detailed Diagnosis	<p>To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Total sessions	Indicates the total number of user sessions.	Number	<p>This is a good indicator of the session load on the broker. If a consistent increase is observed in the value of this measure for the All descriptor, it could hint at a potential overload condition. In such situations, you can compare the value of this measure across session types to figure out which type of session is high on the broker – HDX or RDP?</p>
Active sessions	Indicates the number of user sessions of this type that are currently active on the broker.	Number	<p>A consistent zero value could indicate a connection issue.</p> <p>To determine the details of the currently active sessions, use the</p>

Measurement	Description	Measurement Unit	Interpretation
			detailed diagnosis of this measure.
Connected sessions:	Indicates the number of sessions of this type that are currently connected.	Number	The detailed diagnosis of this measure if enabled, lists the Session ID, the name of the machine, the name of the catalog and delivery group to which the machine belongs, the zone to which the catalog belongs, the server on which the machine is hosted, the hypervisor name, the user who is active on the session, the protocol used for connecting to the session, the Client IP and version, the state of the session, the time for which the session is connected, the time at which the state of the session changed, the start time of the session, the brokering time, the number of session supported – whether single session or multiple session, the applications that are currently in use if the machine in operation is a XenApp etc.
Disconnected sessions	Indicates the number of sessions of this type that are currently disconnected.	Number	If all the current sessions suddenly log out, it indicates a problem condition that requires investigation. The detailed diagnosis of this measure lists the sessions that were logged out.
Reconnecting sessions	Indicates the number of sessions of this type that are reconnecting soon after a disconnect.	Number	The detailed diagnosis of this measure lists the sessions that reconnected soon after a disconnect.
Preparing sessions	Indicates the number of sessions of this type that are currently in the Preparing state.	Number	The detailed diagnosis of this measure lists the sessions that are currently in the Preparing state.
Non-brokered	Indicates the number of	Number	The detailed diagnosis of this measure

Measurement	Description	Measurement Unit	Interpretation
sessions	user sessions of this type that were not brokered by the machines managed by this broker.		lists the sessions that were not brokered by the machines managed by this broker.
Unknown sessions	Indicates the number of sessions of this type that are currently in Unknown state.	Number	The detailed diagnosis of this measure lists the sessions that are currently in Unknown state.
Other sessions	Indicates the number of sessions of this type that are currently in Other state.	Number	The detailed diagnosis of this measure lists the sessions that reconnected soon after a disconnect.
Hidden sessions	Indicates the number of sessions of this type that are currently hidden.	Number	The detailed diagnosis of this measure lists the sessions that are currently hidden.
Autonomously brokered sessions	Indicates the number of sessions of this type that are brokered without the use of this broker.	Number	The detailed diagnosis of this measure lists the sessions that are autonomously brokered.
Pre-logon	Indicates the number of applications that are in pre-logon state for the sessions of this type.	Number	<p>This measure is only applicable for Server OS Machines descriptor.</p> <p>Use the detailed diagnosis of this measure to know which applications are in the pre-logon state.</p>
Pre-launched	Indicates the number of applications for which sessions of this type are prelaunched.	Number	<p>This measure is only applicable for Server OS Machines descriptor.</p> <p>The session prelaunch enables all or specified users access applications quickly, by starting sessions before they are requested. The session will wait for a user, and when the user starts an application prelaunched session is replaced with a regular session.</p> <p>Use the detailed diagnosis of this</p>

Measurement	Description	Measurement Unit	Interpretation
			measure to know which applications are in the pre-launched state.
Active applications	Indicates the number of applications that are currently running in the sessions of this type.	Number	<p>This measure is only applicable for Server OS Machines descriptor.</p> <p>Use the detailed diagnosis of this measure to know which are the active applications.</p>
Lingering	Indicates the number of sessions of this type that are in active state even after the applications are closed.	Number	<p>This measure is only applicable for Server OS Machines descriptor.</p> <p>Use the detailed diagnosis of this measure to know which sessions are active even after the applications are closed.</p>
No applications	Indicates the number of sessions of this type that are active without any application launch.	Number	<p>This measure is only applicable for Server OS Machines descriptor.</p> <p>Use the detailed diagnosis of this measure to know which sessions are active without any application launch.</p>

Use the detailed diagnosis of the *Active sessions* measure to know which sessions are presently active.

Shows the list of active sessions							
SESSION ID	MACHINE NAME	DNS NAME	IP ADDRESS	OS	CATALOG	DELIVERY GROUP	Actions
Jan 02, 2017 20:43:40							
71189	CITRIX\2K8R2-XA76	2K8R2-XA76.Citrix.eginnovations.com	192.168.9.94	Windows 2008 R2 Service Pack 1	eG-2k8r2-xa76	eCdev-2k8r2-xa76	-

Figure 8.35: The detailed diagnosis of the Active sessions measure

To know which sessions are currently disconnected, use the detailed diagnosis of the *Disconnected sessions* measure.

Shows the list of disconnected sessions							
SESSION ID	MACHINE NAME	DNS NAME	IP ADDRESS	OS	CATALOG	DELIVERY GROUP	Actions
Jan 03, 2017 10:43:57							
70921	CITRIX\rhel6desktop	rhel6desktop.citrix.eginnovations.com	192.168.8.179	Red Hat Enterprise Linux Workstation release 6.6 (Santiago)	Linux-VM	Rhel6	-

Figure 8.36: The detailed diagnosis of the Disconnected sessions measure

The detailed diagnosis of the *Active applications* measure reveals the complete details of applications that are currently running.

Shows the list of active applications						
SESSION ID	MACHINE NAME	DNS NAME	IP ADDRESS	OS	CATALOG	Def Gf
Jan 03, 2017 10:43:57						
70921	CITRIX\rhel6desktop	rhel6desktop.citrix.eginnovations.com	192.168.8.179	Red Hat Enterprise Linux Workstation release 6.6 (Santiago)	Linux-VM	R

Figure 8.37: The detailed diagnosis of the Active applications measure

8.5.2 Session States - Site Test

For every type of session (HDX and RDP) on each broker in a site, this test reports the total session count and the status of the sessions.

Target of the test : A Citrix Delivery Controller 7.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for each OS *machine type:protocol* that is to be monitored.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the specified host listens to.
Username	In order to monitor the target Delivery Controller 7, eG requires a special user with the following privileges; <ul style="list-style-type: none"> • The <i>All</i> scope and <i>read-only</i> privileges • The <i>Allow log on locally</i> security privilege on the Delivery Controller host The steps for assigning such privileges to a user are discussed in the How to Monitor Citrix Delivery Controller 7 Using eG Enterprise? chapter. Specify the name of such a user, here.
Password	Specify the password for the user specified in the Username text box, here.
Confirm Password	Confirm the Password by retyping it here.
Domain	Here, specify the domain to which the user specified in the Username text box belongs

Parameter	Description
	to.
Report by Machine Type	By default, this flag is set to Yes indicating that the individual descriptors of this test - i.e., the delivery groups- are classified based on their machine type; in other words, the delivery groups will be listed either under Server OS Machines or Desktop OS Machines based on their machine type. If you do not want to group the delivery groups based on their machine types, set this flag to No .
Show Site Wide Information	By default, this flag is set to Yes , indicating that the monitored server is the site server of a broker site. For a server which is a <i>site</i> , this test will report metrics at the site-level - accordingly, a set of metrics will be reported for each delivery group managed by every broker in the site. On the other hand, if the monitored broker is only a <i>member</i> of a <i>site</i> and not the site server, then set this flag to No . In this case, the test will not report any metrics.
DD Frequency	Refers to the frequency with which detailed diagnosis measures are to be generated for this test. The default is <i>1:1</i> . This indicates that, by default, detailed measures will be generated every time this test runs, and also every time the test detects a problem. You can modify this frequency, if you so desire. Also, if you intend to disable the detailed diagnosis capability for this test, you can do so by specifying <i>none</i> against DD Frequency.
Detailed Diagnosis	<p>To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Total sessions	Indicates the total number of user sessions of this	Number	This is a good indicator of the session load on the brokers. If a consistent

Measurement	Description	Measurement Unit	Interpretation
	type across all brokers in this site.		increase is observed in the value of this measure for the All descriptor, it could hint at a potential overload condition. In such situations, you can compare the value of this measure across session types to figure out which type of session is high on the brokers in this site – HDX or RDP?
Active sessions	Indicates the number of user sessions of this type that are currently active.	Number	A consistent zero value could indicate a connection issue. To determine the details of the currently active sessions, use the detailed diagnosis of this measure.
Connected sessions	Indicates the number of sessions of this type that are currently connected.	Number	
Disconnected sessions	Indicates the number of sessions of this type that are currently disconnected.	Number	If all the current sessions suddenly log out, it indicates a problem condition that requires investigation. The detailed diagnosis of this measure lists the sessions that were logged out.
Reconnecting sessions	Indicates the number of sessions of this type that are reconnecting soon after a disconnect.	Number	
Preparing sessions	Indicates the number of sessions of this type that are currently in the Preparing state.	Number	
Non-brokered sessions	Indicates the number of user sessions of this type that were not brokered by the machines across this site.	Number	
Unknown sessions	Indicates the number of sessions of this type that	Number	

Measurement	Description	Measurement Unit	Interpretation
	are currently in Unknown state.		
Other sessions	Indicates the number of sessions of this type that are currently in Other state.	Number	
Hidden sessions	Indicates the number of sessions of this type that are currently hidden.	Number	
Autonomously brokered sessions	Indicates the number of sessions of this type that are brokered without the use of any broker in this site.	Number	

8.5.3 Login Details Test

For every type of session (HDX and RDP) that is established on the broker, this test reports the total number of new sessions and the count of sessions that are logging out.

Target of the test : A Citrix Delivery Controller 7.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for each type of session on the broker.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the specified host listens to.
Username	In order to monitor the target Delivery Controller 7, eG requires a special user with the following privileges: <ul style="list-style-type: none"> • The <i>All</i> scope and <i>read-only</i> privileges • The <i>Allow log on locally</i> security privilege on the Delivery Controller host

Parameter	Description
	The steps for assigning such privileges to a user are discussed in the How to Monitor Citrix Delivery Controller 7 Using eG Enterprise? chapter. Specify the name of such a user, here.
Password	Specify the password for the user specified in the Username text box, here.
Confirm Password	Confirm the Password by retyping it here.
Domain	Here, specify the domain to which the user specified in the Username text box belongs to.
Report by Machine Type	By default, this flag is set to Yes indicating that the individual descriptors of this test - i.e., the delivery groups- are classified based on their machine type; in other words, the delivery groups will be listed either under Server OS Machines or Desktop OS Machines based on their machine type. If you do not want to group the delivery groups based on their machine types, set this flag to No .
DD Frequency	Refers to the frequency with which detailed diagnosis measures are to be generated for this test. The default is 1:1 . This indicates that, by default, detailed measures will be generated every time this test runs, and also every time the test detects a problem. You can modify this frequency, if you so desire. Also, if you intend to disable the detailed diagnosis capability for this test, you can do so by specifying none against DD frequency.
Detailed Diagnosis	<p>To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Current sessions	Indicates the current	Number	This count includes both the currently

Measurement	Description	Measurement Unit	Interpretation
	number of user sessions of this type on the controller.		active sessions and inactive sessions. To know which sessions are active and which are inactive, use the detailed diagnosis of this measure.
New sessions	Indicates the number of sessions of this type that have been established newly on the broker.	Number	A consistent zero value could indicate a connection issue.
Percent new sessions	Indicates the percentage of current sessions of this type that were established on the broker during the last measurement period.	Percent	
Sessions logging out	Indicates the number of sessions of this type that logged out of the broker.	Number	If all the current sessions suddenly log out, it indicates a problem condition that requires investigation. The detailed diagnosis of this measure lists the sessions that were logged out.

To determine the details of the currently active sessions, use the detailed diagnosis of the *Current sessions* measure.

Shows the list of current sessions						
SESSION ID	MACHINE NAME	DNS NAME	IP ADDRESS	OS	CATALOG	Di Gi
Jan 03, 2017 10:41:18						
70921	CITRIX\rhel6desktop	rhel6desktop.citrix.eginnovations.com	192.168.8.179	Red Hat Enterprise Linux Workstation release 6.6 (Santiago)	Linux-VM	R

Figure 8.38: The detailed diagnosis of the Current sessions measure

The detailed diagnosis of the *Sessions logging out* measure lists the sessions that were logged out.

Shows the list of logout sessions						
SESSION ID	MACHINE NAME	DNS NAME	IP ADDRESS	OS	CATALOG	Di Gi
Jan 03, 2017 10:45:55						
70921	CITRIX\rhel6desktop	rhel6desktop.citrix.eginnovations.com	192.168.8.179	Red Hat Enterprise Linux Workstation release 6.6 (Santiago)	Linux-VM	R

Figure 8.39: The detailed diagnosis of the Sessions logging out measure

8.5.4 Login Details - Site Test

For every type of session (HDX and RDP) that is established on each broker in a site, this test reports the total number of new sessions and the count of sessions that are logging out.

Target of the test : A Citrix Delivery Controller 7.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for each type of session on all the brokers in a site.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port at which the specified host listens to.
Username	In order to monitor the target Delivery Controller 7, eG requires a special user with the following privileges; <ul style="list-style-type: none"> • The <i>All</i> scope and <i>read-only</i> privileges • The <i>Allow log on locally</i> security privilege on the Delivery Controller host The steps for assigning such privileges to a user are discussed in the How to Monitor Citrix Delivery Controller 7 Using eG Enterprise? chapter. Specify the name of such a user, here.
Password	Specify the password for the user specified in the Username text box, here.
Confirm Password	Confirm the Password by retyping it here.
Domain	Here, specify the domain to which the user specified in the Username text box belongs to.
Report by Machine Type	By default, this flag is set to Yes indicating that the individual descriptors of this test - i.e., the delivery groups- are classified based on their machine type; in other words, the delivery groups will be listed either under Server OS Machines or Desktop OS Machines based on their machine type. If you do not want to group the delivery groups based on their machine types, set this flag to No .
Show Site Wide Information	By default, this flag is set to Yes , indicating that the monitored server is the site server of a broker site. For a server which is a site , this test will report metrics at the site-level

Parameter	Description
	<p>- accordingly, a set of metrics will be reported for each delivery group managed by every broker in the site. On the other hand, if the monitored broker is only a <i>member</i> of a site and not the site server, then set this flag to No. In this case, the test will not report any metrics.</p>
DD Frequency	<p>Refers to the frequency with which detailed diagnosis measures are to be generated for this test. The default is 1:1. This indicates that, by default, detailed measures will be generated every time this test runs, and also every time the test detects a problem. You can modify this frequency, if you so desire. Also, if you intend to disable the detailed diagnosis capability for this test, you can do so by specifying none against DD frequency.</p>
Detailed Diagnosis	<p>To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Current sessions	Indicates the number of user sessions of this type that are currently active on the brokers in this site.	Number	<p>This is a good indicator of the current session load on the machines.</p> <p>To determine the details of the currently active sessions, use the detailed diagnosis of this measure.</p>
New sessions	Indicates the number of sessions of this type that have been established newly on the brokers in this site.	Number	A consistent zero value could indicate a connection issue.

Measurement	Description	Measurement Unit	Interpretation
Percent new sessions	Indicates the percentage of current sessions of this type that were established on the brokers in this site during the last measurement period.	Percent	
Sessions logging out	Indicates the number of sessions of this type that logged out of the brokers in this site.	Number	If all the current sessions suddenly log out, it indicates a problem condition that requires investigation. The detailed diagnosis of this measure lists the sessions that were logged out.

8.5.5 Broker Log Test

This test periodically scans the broker event logs for configured patterns of errors/warnings and promptly captures and reports error/warning messages that match the specified patterns.

Target of the test : A Citrix Delivery Controller 7.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for the XenDesktop 7 server that is to be monitored.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host for which this test is to be configured.
Port	Refers to the port used by the EventLog Service. Here it is null.
LogType	Refers to the type of event logs to be monitored. The default value is <i>application</i> .
PolicyFilter	Using this page, administrators can configure the event sources, event IDs, and event descriptions to be monitored by this test. In order to enable administrators to easily and accurately provide this specification, this page provides the following options: <ul style="list-style-type: none"> Manually specify the event sources, IDs, and descriptions in the FILTER text area,

Parameter	Description
	<p>or,</p> <ul style="list-style-type: none"> • Select a specification from the predefined filter policies listed in the FILTER box
	<p>For explicit, manual specification of the filter conditions, select the No option against the PolicyFilter field. This is the default selection. To choose from the list of pre-configured filter policies, or to create a new filter policy and then associate the same with the test, select the Yes option against the PolicyFilter field.</p>
Filter	<p>If the PolicyFilter flag is set to No, then a Filter text area will appear, wherein you will have to specify the event sources, event IDs, and event descriptions to be monitored. This specification should be of the following format: <i>{Displayname}:{event_sources_to_be_included}:{event_sources_to_be_excluded}:{event_ids_to_be_included}:{event_ids_to_be_excluded}:{event_descriptions_to_be_included}:{event_descriptions_to_be_excluded}</i>. For example, assume that the Filter text area takes the value, OS_events:all:Browse,Print:all:none:all:none. Here:</p> <ul style="list-style-type: none"> • <i>OS_events</i> is the display name that will appear as a descriptor of the test in the monitor UI; • <i>All</i> indicates that all the event sources need to be considered while monitoring. To monitor specific event sources, provide the source names as a comma-separated list. To ensure that none of the event sources are monitored, specify <i>none</i>. • Next, to ensure that specific event sources are excluded from monitoring, provide a comma-separated list of source names. Accordingly, in our example, <i>Browse</i> and <i>Print</i> have been excluded from monitoring. Alternatively, you can use <i>all</i> to indicate that all the event sources have to be excluded from monitoring, or <i>none</i> to denote that none of the event sources need be excluded. • In the same manner, you can provide a comma-separated list of event IDs that require monitoring. The <i>All</i> in our example represents that all the event IDs need to be considered while monitoring. • Similarly, the <i>none</i> (following <i>all</i> in our example) is indicative of the fact that none of the event IDs need to be excluded from monitoring. On the other hand, if you want to instruct the eG Enterprise system to ignore a few event IDs during

Parameter	Description
	<p>monitoring, then provide the IDs as a comma-separated list. Likewise, specifying <i>all</i> makes sure that all the event IDs are excluded from monitoring.</p> <ul style="list-style-type: none"> The <i>all</i> which follows implies that all events, regardless of description, need to be included for monitoring. To exclude all events, use <i>none</i>. On the other hand, if you provide a comma-separated list of event descriptions, then the events with the specified descriptions will alone be monitored. Event descriptions can be of any of the following forms - <i>desc*</i>, or <i>desc</i>, or <i>desc,or desc*</i>, or <i>desc1*desc2</i>, etc. <i>desc</i> here refers to any string that forms part of the description. A leading '*' signifies any number of leading characters, while a trailing '*' signifies any number of trailing characters. In the same way, you can also provide a comma-separated list of event descriptions to be excluded from monitoring. Here again, the specification can be of any of the following forms: <i>desc*</i>, or <i>desc</i>, or <i>desc,or desc*</i>, or <i>desc1*desc2</i>, etc. <i>desc</i> here refers to any string that forms part of the description. A leading '*' signifies any number of leading characters, while a trailing '*' signifies any number of trailing characters. In our example however, <i>none</i> is specified, indicating that no event descriptions are to be excluded from monitoring. If you use <i>all</i> instead, it would mean that all event descriptions are to be excluded from monitoring. <p>By default, the Filter parameter contains the value: <i>all:all:none:all:none:all:none</i>. Multiple filters are to be separated by semi-colons (;).</p> <p>Note:</p> <p>The event sources and event IDs specified here should be exactly the same as that which appears in the Event Viewer window.</p> <p>On the other hand, if the PolicyFilter flag is set to Yes, then a Filter list box will appear, displaying the filter policies that pre-exist in the eG Enterprise system. A filter policy typically comprises of a specific set of event sources, event IDs, and event descriptions to be monitored. This specification is built into the policy in the following format:</p> <p><i>{Policyname}:{event_sources_to_be_included}:{event_sources_to_be_excluded}:{event_IDs_to_be_included}:{event_IDs_to_be_excluded}:{event_descriptions_to_be_included}:{event_descriptions_to_be_excluded}</i></p>

Parameter	Description
	To monitor a specific combination of event sources, event IDs, and event descriptions, you can choose the corresponding filter policy from the Filter list box. Multiple filter policies can be so selected. Alternatively, you can modify any of the existing policies to suit your needs, or create a new filter policy. To facilitate this, a Click here link appears just above the test configuration section, once the Yes option is chosen against PolicyFilter. Clicking on the Click here link leads you to a page where you can modify the existing policies or create a new one. The changed policy or the new policy can then be associated with the test by selecting the policy name from the Filter list box in this page.
UseWMI	The eG agent can either use WMI to extract event log statistics or directly parse the event logs using event log APIs. If the UseWMI flag is Yes , then WMI is used. If not, the event log APIs are used. This option is provided because on some Windows 2000 systems (especially ones with service pack 3 or lower), the use of WMI access to event logs can cause the CPU usage of the WinMgmt process to shoot up. On such systems, set the UseWMI parameter value to No .
Stateless Alerts	Typically, the eG manager generates email alerts only when the state of a specific measurement changes. A state change typically occurs only when the threshold of a measure is violated a configured number of times within a specified time window. While this ensured that the eG manager raised alarms only when the problem was severe enough, in some cases, it may cause one/more problems to go unnoticed, just because they did not result in a state change. For example, take the case of the EventLog test. When this test captures an error event for the very first time, the eG manager will send out a CRITICAL email alert with the details of the error event to configured recipients. Now, the next time the test runs, if a different error event is captured, the eG manager will keep the state of the measure as CRITICAL , but will not send out the details of this error event to the user; thus, the second issue will remain hidden from the user. To make sure that administrators do not miss/overlook critical issues, the eG Enterprise monitoring solution provides the stateless alerting capability. To enable this capability for this test, set the stateless alerts flag to Yes . This will ensure that email alerts are generated for this test, regardless of whether or not the state of the measures reported by this test changes.
Events During Restart	By default, the Events During Restart flag is set to Yes . This ensures that whenever the agent is stopped and later started, the events that might have occurred during the period of non-availability of the agent are included in the number of events reported by the agent. Setting the flag to No ensures that the agent, when restarted, ignores the events that occurred during the time it was not available.
DDforInformation	eG Enterprise also provides you with options to restrict the amount of storage required for event log tests. Towards this end, the DDforInformation and DDforWarning flags

Parameter	Description
	have been made available in this page. By default, both these flags are set to Yes , indicating that by default, the test generates detailed diagnostic measures for information events and warning events. If you do not want the test to generate and store detailed measures for information events, set the DDforInformation flag to No .
DDforWarning	To ensure that the test does not generate and store detailed measures for warning events, set the DDforWarning flag to No .
DD Frequency	Refers to the frequency with which detailed diagnosis measures are to be generated for this test. The default is <i>1:1</i> . This indicates that, by default, detailed measures will be generated every time this test runs, and also every time the test detects a problem. You can modify this frequency, if you so desire. Also, if you intend to disable the detailed diagnosis capability for this test, you can do so by specifying <i>none</i> against DD Frequency.
Detailed Diagnosis	<p>To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the On option. To disable the capability, click on the Off option.</p> <p>The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Information messages	This refers to the number of application information events generated when the test was last executed.	Number	<p>A change in the value of this measure may indicate infrequent but successful operations performed by one or more applications.</p> <p>Please check the Citrix-XenDesktop-BrokerMonitor/Operational Logs in the Event Log Viewer for more details.</p>
Warnings	This refers to the number	Number	A high value of this measure indicates

Measurement	Description	Measurement Unit	Interpretation
	of warnings that were generated when the test was last executed.		<p>problems with the broker that may not have an immediate impact, but may cause future problems in one or more machines of this broker.</p> <p>Please check the Citrix-XenDesktop-BrokerMonitor/Operational Logs in the Event Log Viewer for more details.</p>
Error messages	This refers to the number of application error events that were generated.	Number	<p>A very low value (zero) indicates that the system is in a healthy state and all applications are running smoothly without any potential problems.</p> <p>An increasing trend or high value indicates the existence of problems like loss of functionality or data in one or more applications.</p> <p>Please check the Citrix-XenDesktop-BrokerMonitor/Operational Logs in the Event Log Viewer for more details.</p>
Critical messages	Indicates the number of critical events that were generated when the test was last executed.	Number	<p>A critical event is one that an application or a component cannot automatically recover from.</p> <p>This measure is applicable only for Windows 2008/Windows Vista/Windows 7 systems.</p> <p>A very low value (zero) indicates that the system is in a healthy state and all applications are running smoothly without any potential problems.</p> <p>An increasing trend or high value indicates the existence of fatal/irrepairable problems in one or more applications.</p> <p>The detailed diagnosis of this measure describes all the critical application events that were generated during the</p>

Measurement	Description	Measurement Unit	Interpretation
			<p>last measurement period.</p> <p>Please check the Citrix-XenDesktop-BrokerMonitor/Operational Logs in the Event Log Viewer for more details.</p>
Verbose messages	Indicates the number of verbose events that were generated when the test was last executed.	Number	<p>Verbose logging provides more details in the log entry, which will enable you to troubleshoot issues better.</p> <p>This measure is applicable only for Windows 2008/Windows Vista/Windows 7 systems.</p> <p>The detailed diagnosis of this measure describes all the verbose events that were generated during the last measurement period.</p> <p>Please check the Citrix-XenDesktop-BrokerMonitor/Operational Logs in the Event Log Viewer for more details.</p>

About eG Innovations

eG Innovations provides intelligent performance management solutions that automate and dramatically accelerate the discovery, diagnosis, and resolution of IT performance issues in on-premises, cloud and hybrid environments. Where traditional monitoring tools often fail to provide insight into the performance drivers of business services and user experience, eG Innovations provides total performance visibility across every layer and every tier of the IT infrastructure that supports the business service chain. From desktops to applications, from servers to network and storage, from virtualization to cloud, eG Innovations helps companies proactively discover, instantly diagnose, and rapidly resolve even the most challenging performance and user experience issues.

eG Innovations is dedicated to helping businesses across the globe transform IT service delivery into a competitive advantage and a center for productivity, growth and profit. Many of the world's largest businesses use eG Enterprise to enhance IT service performance, increase operational efficiency, ensure IT effectiveness and deliver on the ROI promise of transformational IT investments across physical, virtual and cloud environments.

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