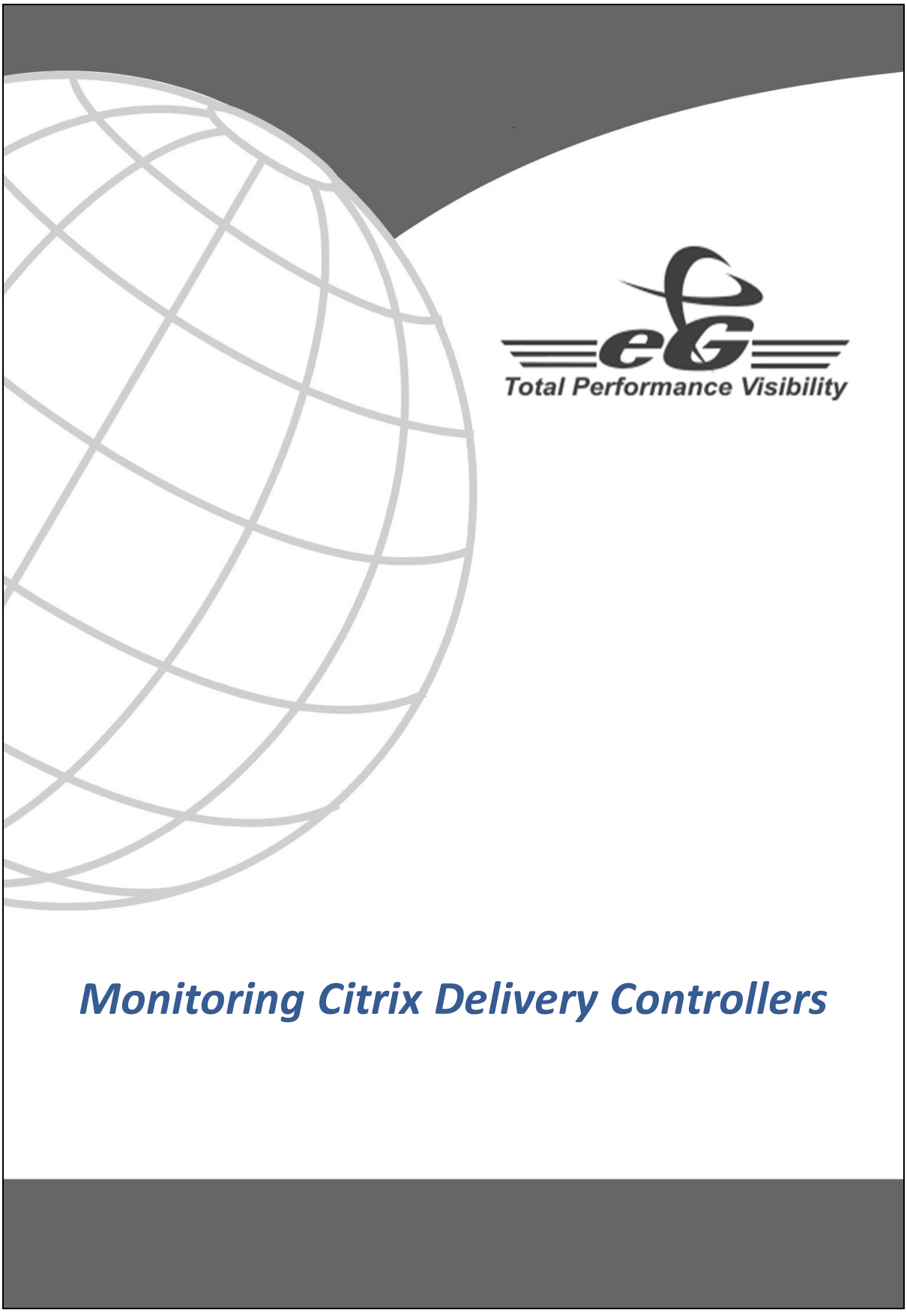


Monitoring Citrix Delivery Controllers

Table of contents

Table of Figures

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.

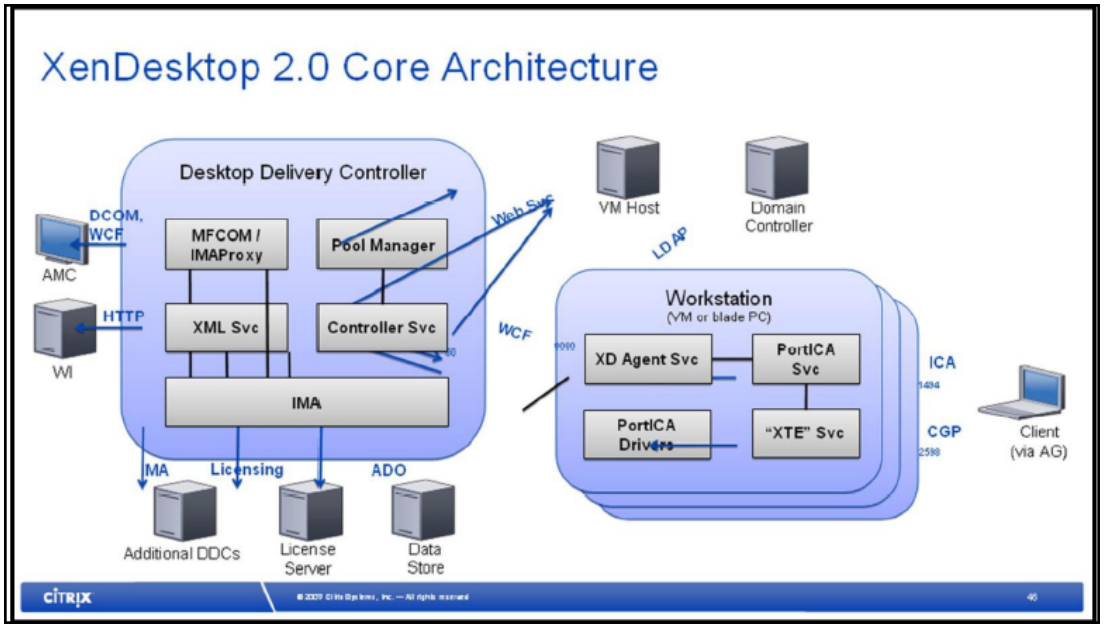


Figure 1.1: How the Citrix XenDesktop works?

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 miniscule – 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 – ¾*, 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.

This document discusses each model at length.

2

How does eG Enterprise Monitor the Delivery Controller 3/4?

eG Enterprise adopts an agent-based approach to monitoring the DDC. 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:\egurkha\lib\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 4.2 above.

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 4.2.

3

Administering eG Manager to Monitor 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 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.

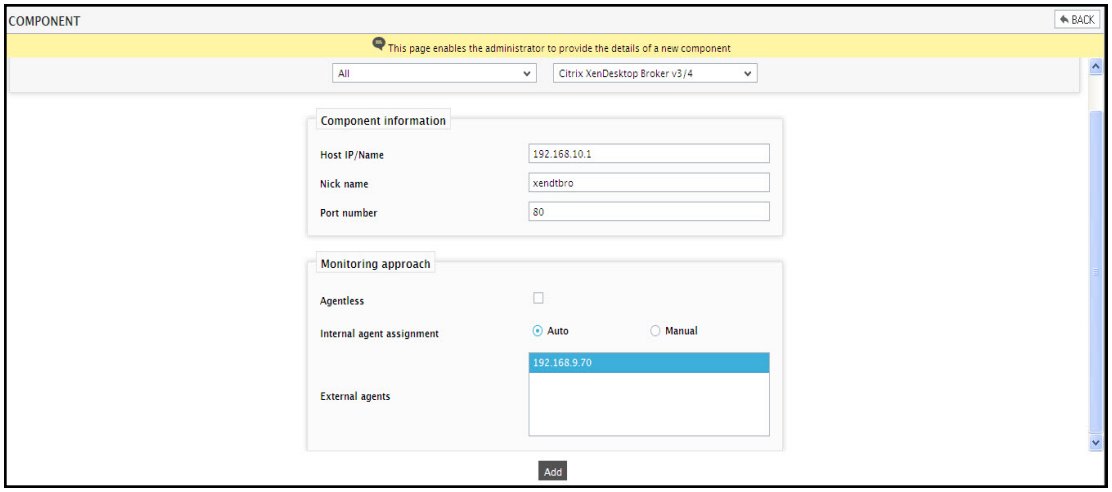


Figure 3.1: Adding a Delivery Controller – v3/4

3. The tests for this component will be configured automatically. Once you add the component, sign out of the eG administrative interface.

4

Monitoring the Delivery Controller 3/4

Figure 4.1 is a high level view of the architecture of XenDesktop 3.

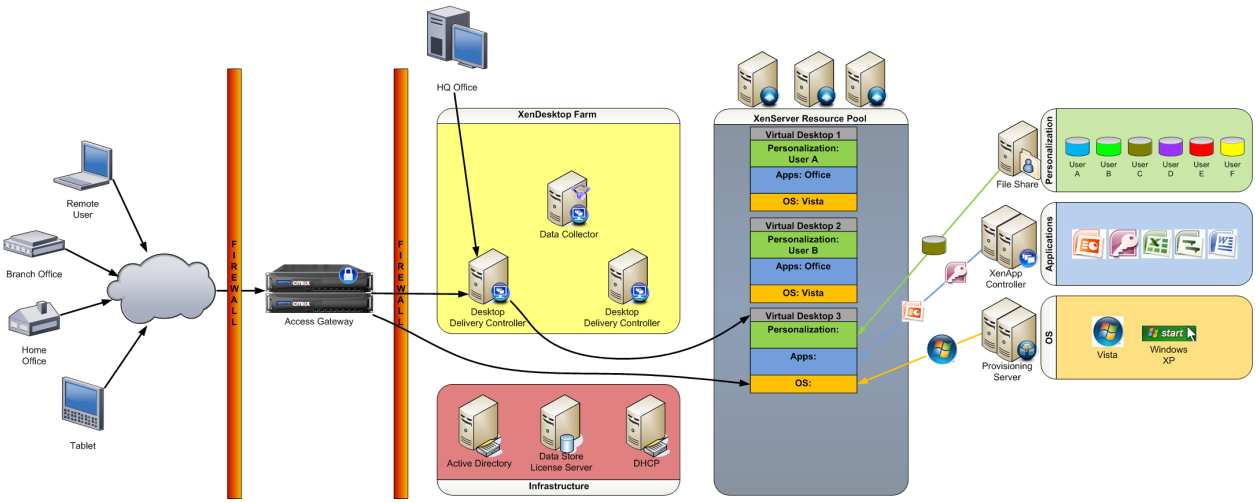


Figure 4.1: A high level view of the XenDesktop 3 architecture

As can be inferred from Figure 4.1, 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/permanently suspend the XenDesktop service as a whole. If such adversities are to be averted, the Delivery Controller has to be monitored 24x7.

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

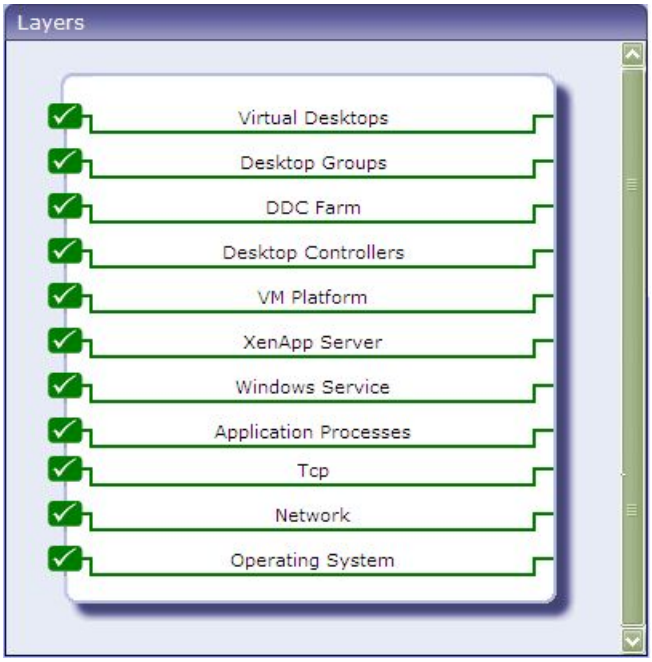


Figure 4.2: Layer model of the DDC

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 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 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 group are currently in use?
- Are there idle desktops within a group?
- Does any 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?

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 4.3: 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 Delivery Controller

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

1. **TEST PERIOD** – How often should the test be executed
2. **HOST** – The host for which the test is to be configured
3. **PORT** – Refers to the port used by the Citrix server

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 DDC

Agent deploying the test : An internal agent

Outputs of the test : One set of results for every IMA communication initiated by the DDC being monitored

Configurable parameters for the test

1. **TEST PERIOD** – How often should the test be executed
2. **HOST** – The host for which the test is to be configured
3. **PORT** – Refers to the port used by the DDC.

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 DDC/License server/datastore) in the farm.	KBytes/sec	
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 Delivery Controller

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

1. **TEST PERIOD** – How often should the test be executed
2. **HOST**– The host for which the test is to be configured
3. **PORT** – Refers to the port used by the Citrix server

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 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	Indicates how long the	Mins	The data store of the DDC hosts

Measurement	Description	Measurement Unit	Interpretation
connection failure:	DDC was disconnected from the datastore.		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 into 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.
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	KBytes/Sec	Each server has a subset of the data

Measurement	Description	Measurement Unit	Interpretation
	the IMA Local Host Cache		store called the local host cache. The local host cache performs two functions: • 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. 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.
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 DDC

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

1. **TEST PERIOD** – How often should the test be executed
2. **HOST** – The host for which the test is to be configured
3. **PORT** – Refers to the port used by the Citrix server

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 Delivery Controller

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

1. **TEST PERIOD** – How often should the test be executed
2. **HOST** – The host for which the test is to be configured
3. **PORT** – Refers to the port used by the Citrix server

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 *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 Delivery Controller

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

1. **TEST PERIOD** – How often should the test be executed
2. **HOST** – The host for which the test is to be configured
3. **PORT** – Refers to the port used by the Citrix server

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.

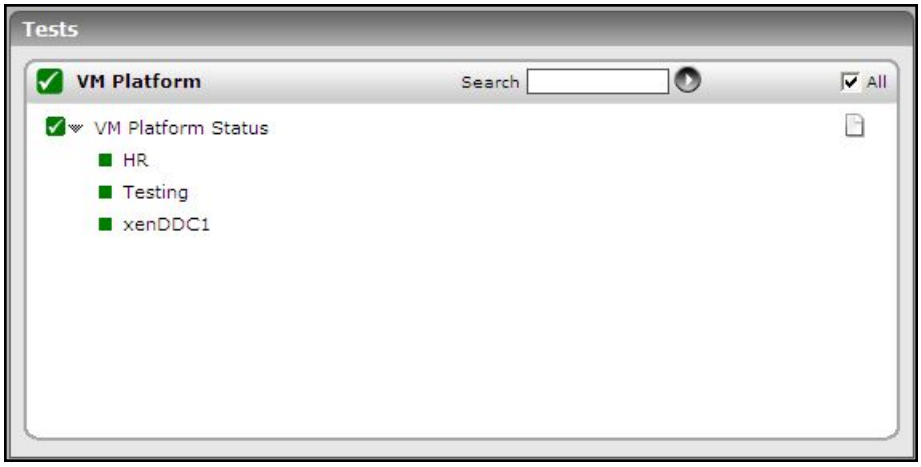


Figure 4.4: The tests mapped to the VM Platform layer

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 Xen DDC

Agent deploying the test : An internal agent

Outputs of the test : One set of results for every desktop group configured on the DDC being monitored

Configurable parameters for the test

1. **TEST PERIOD** – How often should the test be executed
2. **HOST** – The host for which the test is to be configured
3. **PORT** – Refers to the port used by the DDC. The default port number is 80.
4. **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**.

5. **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:

   - 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.

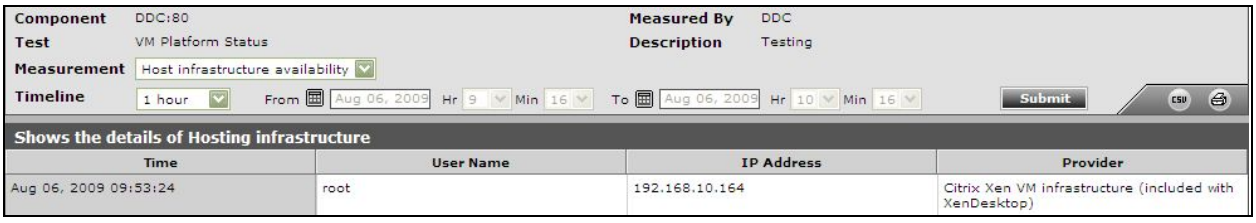


Figure 4.5: The detailed diagnosis of the Host infrastructure availability measure

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;

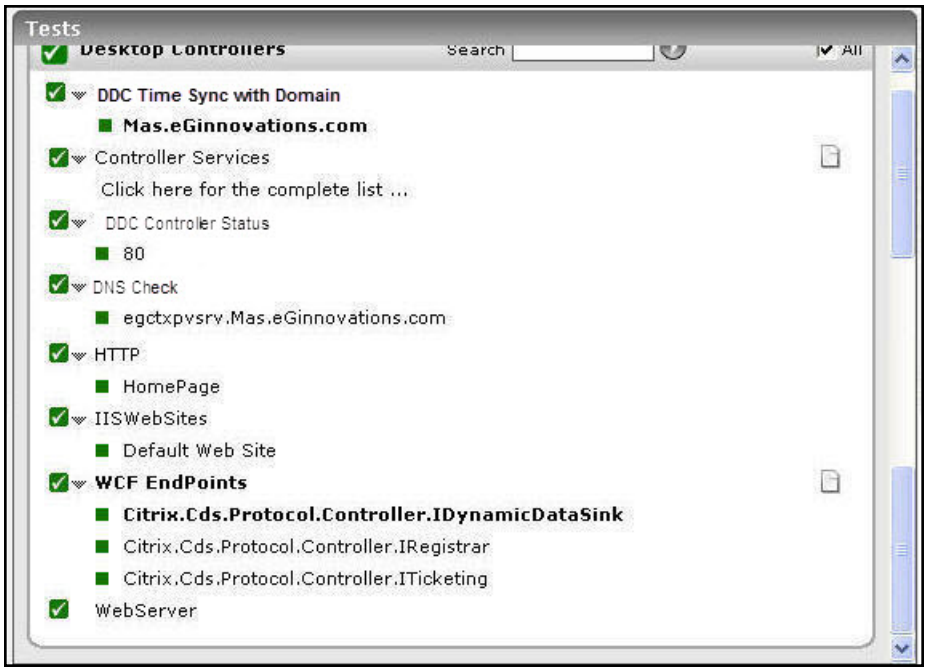


Figure 4.6: The tests mapped to the Desktop Controllers layer

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 Xen DDC

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

1. **TEST PERIOD** - How often should the test be executed
2. **HOST** - The host for which the test is to be configured.
3. **PORT** – The port at which the server listens
4. **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:

- The eG manager license should allow the detailed diagnosis capability
- Both the normal and abnormalfrequencies 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.		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: **State** / **Numeric Value** Ok / 1 Error / 0 **Note:** 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., 0and 1. 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.

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.

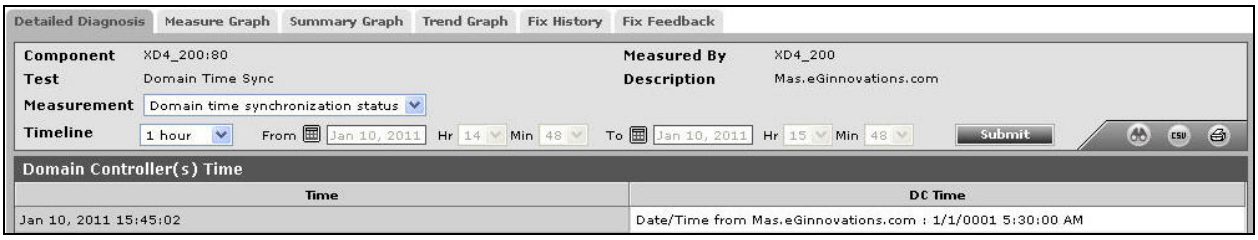


Figure 4.7: The detailed diagnosis of the Domain time synchronization status measure

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 Xen DDC

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

1. **TEST PERIOD** - How often should the test be executed
2. **HOST** - The host for which the test is to be configured.
3. **PORT** – The port at which the server listens
4. **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:

- The eG manager license should allow the detailed diagnosis capability
- Both the normal and abnormalfrequencies 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.		This measure reports the value *Ok* if the DNS server is able to resolve the IP address of the DDC to its domain name. The value *Error*, 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: **State** / **Numeric Value** Ok / 1 Error / 0 **Note:** 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.

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 Delivery Controller

Agent deploying the test : An internal/remote agent

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

Configurable parameters for the test

1. **TEST PERIOD** – How often should the test be executed
2. **HOST** – The host for which the test is to be configured
3. **PORT** – Refers to the port used by the DDC
4. **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: *C:\Program Files (x86)\Citrix\system32*.
5. **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:

   - 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 connection with the data store.		The values that this measure can take and their corresponding numeric values are as follows:

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>
<table>
<tr><th>Measure Value</th><th>Numeric Value</th></tr>
<tr><td>Failure</td><td>0</td></tr>
<tr><td>Success</td><td>1</td></tr>
</table>
If the value reported is Failure, you can use the detailed diagnosis of this test to determine the reason for the connection failure.
Note:
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.
</td></tr>
</table>

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 Xen DDC

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

1. **TEST PERIOD** - How often should the test be executed
2. **HOST** - The host for which the test is to be configured.
3. **PORT** – The port at which the server listens

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Connection status:	Indicates whether connection to this endpoint is available or not.		This measure reports the value *Ok* if the connection to the endpoint is available. The value *Error*, 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: State / Numeric Value Ok / 1 Error / 0 **Note:** 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.
Service status:	Indicates whether virtual desktops are able to consume services provided by this endpoint.		This measure reports the value *Ok* if the endpoint services are available for consumption. The value *Error*, on the other hand, is reported if the endpoint services cannot be consumed. The numeric values that correspond to the

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>above-mentioned states are as follows:
<table><tr><th>State</th><th>Numeric Value</th></tr><tr><td>Ok</td><td>1</td></tr><tr><td>Error</td><td>0</td></tr></table>
Note:
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.</td></tr>
</table>

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.

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 Delivery Controller

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

1. **TEST PERIOD** - How often should the test be executed
2. **HOST** - The host for which the test is to be configured.
3. **PORT** – The port at which the server listens
4. **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:

   - 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.		This measure reports the value *Ok* if the service is running. The value *Error*, 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: **Measure Value** / **Numeric Value** Ok – 1 Error – 0 **Note:** 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

Measurement	Description	Measurement Unit	Interpretation
			equivalents only – i.e., 0 and 1. If this measure reports the value *Error*, then, you can use the detailed diagnosis of this test to figure out what is causing the error.

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 Xen DDC

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

1. **TEST PERIOD** - How often should the test be executed
2. **HOST** - The host for which the test is to be configured.
3. **PORT** – The port at which the server listens
4. **ALERTFILE** - Specify the path to the alert log file to be monitored. For eg., C:/cds/controller.log. Multiple log file paths can be provided as a comma- separated list - eg., c:/cds/pool.log,C:/cds/controller.log.

   Also, instead of a specific log file path, the path to the directory containing log files can be provided - eg., c:/cds. 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, c:/cds/*pool*. 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.

   You can also configure the path in the following format:Name@logfilepath. Here, Name represents the display name of the path being configured. Accordingly, the parameter specification for the 'pool' example discussed above can be: pool@/tmp/db/*pool*. In this case, the display name *pool* will alone be displayed as the descriptor of this test.

   Every time this test is executed, the eG agent verifies the following:

   - 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;

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).

5. **SEARCHPATTERN** - 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.
   For example, say you specify *XenFactory:*XenFactory**, in the **SEARCHPATTERN** text box. This indicates that "XenFactory" is the pattern name to be displayed in the monitor interface. "*XenFactory**" indicates that the test will monitor only those lines in the log which contain the term "*XenFactory*".

   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.

   Multiple search patterns can be specified as a comma- separated list. For example: *XenFactory:*XenFactory*,LicenseRetry:*LicenseRetryThreadBody**

   If the **ALERTFILE** specification is of the format *Name@logfilepath*, then the descriptor for this test in the eG monitor interface will be of the format: *Name:PatternName*. 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: *LogFilePath:PatternName*.

   If you want all the messages in a log file to be monitored, then your specification would be: **<PatternName>:***.

6. **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 *XenFactory:*XenFactory*,LicenseRetry:*LicenseRetryThreadBody**:

   0:0 will be applied to *XenFactory:*XenFactory** pattern

   1:1 will be applied to *LicenseRetry:*LicenseRetryThreadBody** pattern

7. **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*'.

8. **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 *Pattern1:*fatal*,Pattern2:*error** 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.

9. **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: *Directory_containing_monitored_ file:<SearchPattern>* . For instance, if the **ALERTFILE** parameter is set to *c:\eGurkha\logs\syslog.txt*, and **ROTATINGFILE** is set to **true**, then, your descriptor will be of the following format: *c:\eGurkha\logs:<SearchPattern>*. On the other hand, if the **ROTATINGFILE** flag had been set to **false**, then the descriptors will be of the following format: *<FileName>:<SearchPattern>* - i.e., *syslog.txt:<SearchPattern>* in the case of the example above.

   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: *Configured_directory_path:<SearchPattern>.* For instance, if the **ALERTFILE** parameter is set to *c:\eGurkha\logs*, and **ROTATINGFILE** is set to **true**, then, your descriptor will be: *c:\eGurkha\logs:<SearchPattern>* . On the other hand, if the **ROTATINGFILE** parameter had been set to **false**, then the descriptors will be of the following format: *Configured_directory:<SearchPattern>* - i.e., *logs:<SearchPattern>* in the case of the example above.

   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: *<FilePattern>:<SearchPattern>*. For instance, if the **ALERTFILE** parameter is set to *c:\eGurkha\logs*sys**, and **ROTATINGFILE** is set to **true**, then, your descriptor will be: **sys*:<SearchPattern>*. In this case, the descriptor format will not change even if the **ROTATINGFILE** flag status is changed.

10. **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**.

11. **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:

- 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.

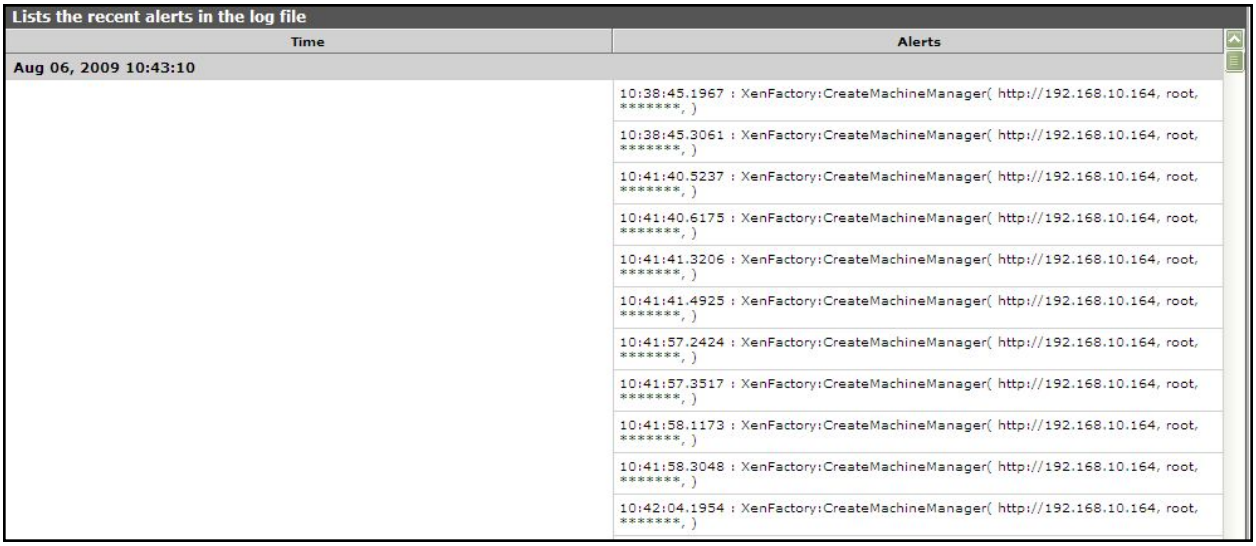


Figure 4.8: The detailed diagnosis of the Recent errors measure

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 Xen DDC

Agent deploying the test : An internal agent

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

Configurable parameters for the test

1. **TEST PERIOD** - How often should the test be executed
2. **HOST** - The host for which the test is to be configured.
3. **PORT** – The port at which the specified **HOST** listens. By default, this is 80.
4. **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 *port name:port number* 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 *port name:IP address:port number* pairs that are to be tested, so as to enable the test to try and connect to Tcp ports on multiple IP addresses.
5. **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.
6. **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	Secs	An increase in response time can be caused by several factors such as a

Measurement	Description	Measurement Unit	Interpretation
	request.		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 4.9: 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 Xen DDC

Agent deploying the test : An internal agent

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

Configurable parameters for the test

1. **TEST PERIOD** – How often should the test be executed
2. **HOST** – The host for which the test is to be configured
3. **PORT** – Refers to the port used by the DDC. The default port number is 80.
4. **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:

   - 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.

Measurement	Description	Measurement Unit	Interpretation
Powered Off virtual desktops:	Indicates the number of virtual desktops of this type 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 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 4.10: 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 4.11: 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 4.12: 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\DDSKXP1	NET	MAS\user1
	MAS\EGHH101-PC	DDC3\NAT	MAS\eguser

Figure 4.13: The detailed diagnosis of the Unknows 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 Delivery Controller 3/4

Agent deploying the test : An internal agent

Outputs of the test : One set of results for every user configured on DDC

Configurable parameters for the test

1. **TEST PERIOD** - How often should the test be executed
2. **HOST** - The host for which the test is to be configured.
3. **PORT** – The port at which the server 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 *administrator*. The value 0 indicates that the user is not an *administrator*.

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 Delivery Controller 3/4

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

1. **TEST PERIOD** – How often should the test be executed
2. **HOST** – The host for which the test is to be configured
3. **PORT** – Refers to the port used by the DDC. The default port number is 80.
4. **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.

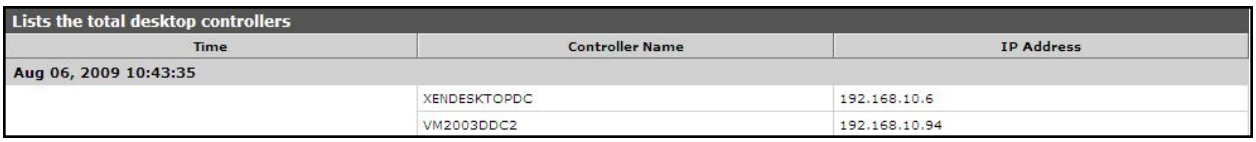
   The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:

- 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.
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.

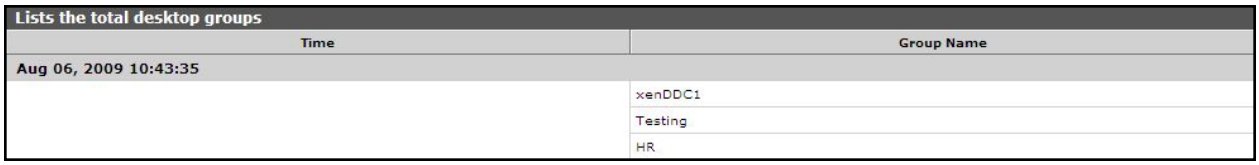


Lists the total desktop controllers

Time	Controller Name	IP Address
Aug 06, 2009 10:43:35		
	XENDESKTOPDC	192.168.10.6
	VM2003DDC2	192.168.10.94

Figure 4.14: 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.

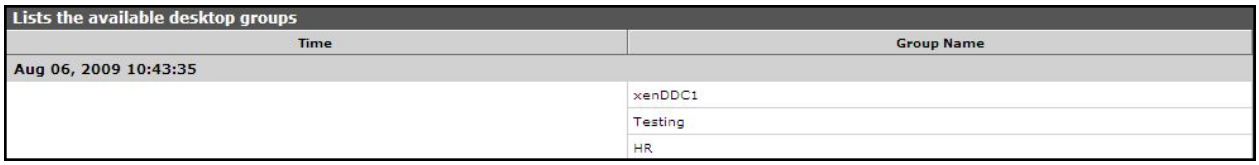


Lists the total desktop groups

Time	Group Name
Aug 06, 2009 10:43:35	
	xenDDC1
	Testing
	HR

Figure 4.15: 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 4.16: 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 Delivery Controller 3/4

Agent deploying the test : An internal agent

Outputs of the test : One set of results for the desktop delivery controller

Configurable parameters for the test

1. **TEST PERIOD** – How often should the test be executed
2. **HOST** – The host for which the test is to be configured
3. **PORT** – Refers to the port used by the DDC
4. **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..
5. **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:

- 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.

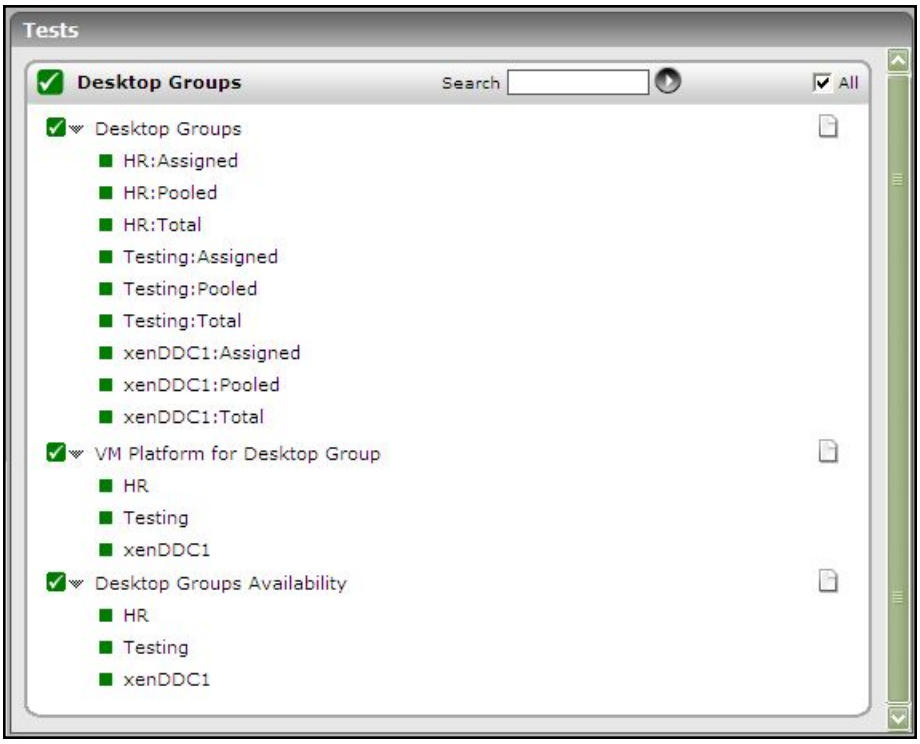


Figure 4.17: The tests mapped to the Desktop Groups layer

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 Delivery Controller 3/4

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

1. **TEST PERIOD** – How often should the test be executed
2. **HOST** – The host for which the test is to be configured
3. **PORT** – Refers to the port used by the DDC. The default port number is 80.
4. **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:

- 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.

Measurement	Description	Measurement Unit	Interpretation
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 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 4.18: he 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 4.19: 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 4.20: 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 Delivery Controller 3/4

Agent deploying the test : An internal agent

Outputs of the test : One set of results for every desktopgroup:desktoptype combination managed by the monitored DDC

Configurable parameters for the test

1. **TEST PERIOD** – How often should the test be executed
2. **HOST** – The host for which the test is to be configured
3. **PORT** – Refers to the port used by the DDC. The default port number is 80.
4. **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:

   - 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.

Measurement	Description	Measurement Unit	Interpretation
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 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 Delivery Controller 3/4

Agent deploying the test : An internal agent

Outputs of the test : One set of results for every desktopgroup on Delivery Controller 3/4

Configurable parameters for the test

1. **TEST PERIOD** – How often should the test be executed
2. **HOST** – The host for which the test is to be configured
3. **PORT** – Refers to the port used by the DDC.
4. **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**.
5. **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:

   - 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.

Measurement	Description	Measurement Unit	Interpretation
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.

Figure 4.21: 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.

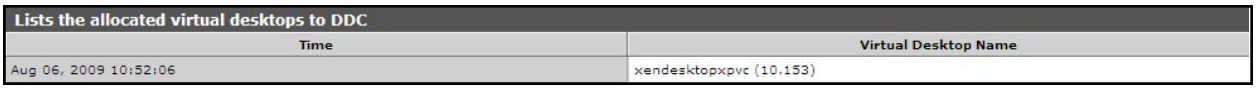


Figure 4.22: The detailed diagnosis of the Allocated virtual desktops to DDC

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

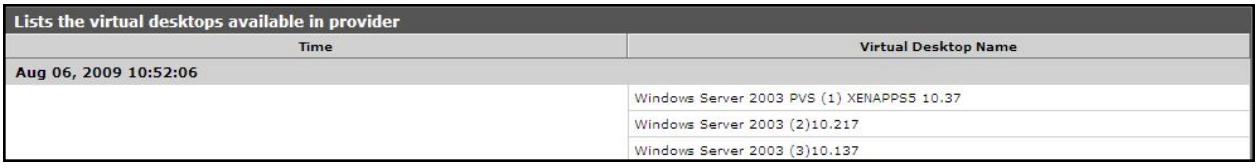


Figure 4.23: The detailed diagnosis of the Available virtual desktops in provider measure

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 Delivery Controller 3/4

Agent deploying the test : An internal agent

Outputs of the test : One set of results for every *desktopgroup* on Delivery Controller 3/4

Configurable parameters for the test

1. **TEST PERIOD** – How often should the test be executed
2. **HOST** – The host for which the test is to be configured
3. **PORT** – Refers to the port used by the DDC. 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.

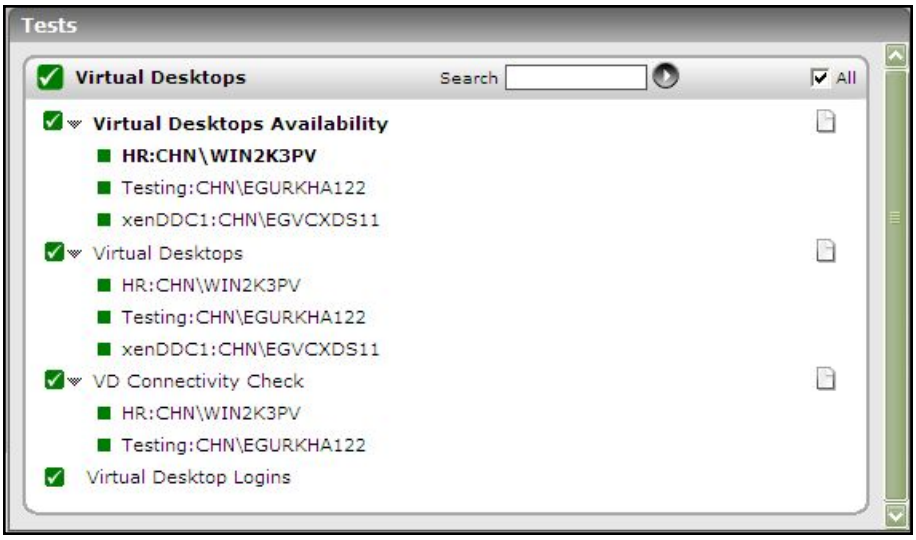


Figure 4.24: The tests mapped to the Virtual Desktops layer

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 Delivery Controller 3/4

Agent deploying the test : An internal agent

Outputs of the test : One set of results for every virtual desktop managed by DDC

Configurable parameters for the test

1. **TEST PERIOD** – How often should the test be executed
2. **HOST** – The host for which the test is to be configured
3. **PORT** – Refers to the port used by the DDC. The default port number is 80.
4. **VIRTUAL DESKTOP AGENT PORT** – Specify the port using which the DDC connects to the virtual desktops. By default, 8080 is displayed here.
5. **REPORT BY GROUPNAME** – By default, this flag is set to **Yes**, indicating that this test reports a set of measures for every *desktopgroup:virtualdesktop* combination, by default. To ensure that this test reports a set of measures for every *virtualdesktop* alone, set this flag to **No**.
6. **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**.

7. **REPORT BY CONTROLLERNAME** - By default, this flag is set to **Yes**. This implies that every *desktopgroup:virtualdesktop* 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: *Controllername->desktopgroup:virtualdesktop*. If you want to remove the *controllername* 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 virtual desktop is in the maintenance mode, then this measure will report *Not available*.

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 Delivery Controller 3/4

Agent deploying the test : An internal agent

Outputs of the test : One set of results for every virtual desktop managed by the Delivery Controller 3/4 farm

Configurable parameters for the test

1. **TEST PERIOD** – How often should the test be executed
2. **HOST** – The host for which the test is to be configured

3. **PORT** – Refers to the port used by the DDC. The default port number is 80.
4. **REPORT BY GROUPNAME** – By default, this flag is set to **Yes**, indicating that this test reports a set of measures for every *desktopgroup:virtualdesktop* combination, by default. To ensure that this test reports a set of measures for every *virtualdesktop* alone, set this flag to **No**.
5. **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**.
6. **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:

   - 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.		While the value *Yes* indicates that the virtual desktop is enabled, the value *No* indicates that it is currently disabled. The numeric values that correspond to the Yes/No states above are as follows: **State** / **Numeric Value** Yes / 1 No / 0 **Note:** Bydefault, this measure reports the above- mentioned **State** s while indicating whether a virtual desktop is enabled/disabled. However, the graph of this measure will represent states

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>using the corresponding numeric equivalents – 1 and 0 – only.</td></tr>
<tr><td>Is user connected to desktop?</td><td>Indicates whether any user is currently connected to this desktop or not.</td><td></td><td>While the value Yes indicates that a user is connected to the virtual desktop, the value No indicates that no user is currently connected to the desktop.

The numeric values that correspond to the Yes/No states above are as follows:
<table><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>
Note:

By default, this measure reports the above- mentioned State s 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.

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.</td></tr>
<tr><td>Is the virtual desktop available?</td><td>Indicates whether this virtual desktop is currently available or not.</td><td></td><td>While the value Yes indicates that the virtual desktop is available, the value No indicates that the virtual desktop is not available.

The numeric values that correspond to the Yes/No states above are as</td></tr>
</table>

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>follows:<table><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>Note:
By default, this measure reports the above- mentioned State s 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.</td></tr>
<tr><td>Is desktop powered on?:</td><td>Indicates whether this virtual desktop is currently powered on or not.</td><td></td><td>While the value Yes indicates that the desktop is powered on, the value No indicates that the desktop is currently powered off.
The numeric values that correspond to the Yes/No states above are as follows:<table><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>Note:
By default, this measure reports the above- mentioned State s 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.</td></tr>
<tr><td>Is desktop under maintenance?:</td><td>Indicates whether this virtual desktop is currently under</td><td></td><td>If you want to temporarily stop connections to a desktop so that</td></tr>
</table>

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td>maintenance.</td><td></td><td>maintenance tasks can be carried out, you can put the desktop into maintenance mode.

While the value Yes indicates that the desktop is in maintenance mode, the value No indicates that the desktop is not in maintenance mode.

The numeric values that correspond to the Yes/No states above are as follows:
<table><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>
Note:

By default, this measure reports the above- mentioned State s 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.</td></tr>
<tr><td>Is desktop powerstate unknown?</td><td>Indicates whether this virtual desktop is currently in the ‘Unknown’ powerstate.</td><td></td><td>Note that this measure will appear only if the ONLY POWERED ON VMS flag is set to ‘No’.

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.

The numeric values that correspond to the Yes/No states above are as follows:</td></tr>
</table>

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>
<table>
<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>
Note:
By default, this measure reports the above- mentioned State s 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.
</td></tr>
</table>

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 Delivery Controller 3/4

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 3/4

Configurable parameters for the test

1. **TEST PERIOD** – How often should the test be executed
2. **HOST** – The host for which the test is to be configured
3. **PORT** – Refers to the port used by the DDC. The default port number is 80.
4. **REPORT BY GROUPNAME** – By default, this flag is set to **Yes**, indicating that this test reports a set of measures for every *desktopgroup:virtualdesktop* combination, by default. To ensure that this test reports a set of measures for every *virtualdesktop* alone, set this flag to **No**.
5. **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**.
6. **REPORT BY CONTROLLERNAME** - By default, this flag is set to **Yes**. This implies that every *desktopgroup:virtualdesktop* 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:

Controllername->desktopgroup:virtualdesktop. If you want to remove the *controllername* prefix from the descriptors, then, set this flag to **No**.

7. **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:

   - 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.		While the value *Yes* indicates that the virtual desktop is enabled, the value *No* indicates that it is currently disabled. The numeric values that correspond to the Yes/No states above are as follows: **State** / **Numeric Value**: Yes – 1; No – 0 **Note:** By default, this measure reports the above- mentioned **State** s 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.
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 no

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>user is currently connected to the desktop.

The numeric values that correspond to the Yes/No states above are as follows:

<table><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>
Note:

By default, this measure reports the above- mentioned State s 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.

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.</td></tr>
<tr><td>Is the virtual desktop available?</td><td>Indicates whether this virtual desktop is currently available or not.</td><td></td><td>While the value Yes indicates that the virtual desktop is available, the value No indicates that the virtual desktop is not available.

The numeric values that correspond to the Yes/No states above are as follows:

<table><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></td></tr>
</table>

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>Note:
By default, this measure reports the above- mentioned State s 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.</td></tr>
<tr><td>Is desktop powered on?:</td><td>Indicates whether this virtual desktop is currently powered on or not.</td><td></td><td>While the value Yes indicates that the desktop is powered on, the value No indicates that the desktop is currently powered off.
The numeric values that correspond to the Yes/No states above are as follows:<table><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>Note:
By default, this measure reports the above- mentioned State s 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.</td></tr>
<tr><td>Is desktop under maintenance?:</td><td>Indicates whether this virtual desktop is currently under maintenance.</td><td></td><td>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.
While the value Yes indicates that the desktop is in maintenance mode, the value No indicates that the desktop is</td></tr>
</table>

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>not in maintenance mode.

The numeric values that correspond to the Yes/No states above are as follows:

<table><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>
Note:

By default, this measure reports the above- mentioned State s 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.</td></tr>
<tr><td>Is desktop powerstate unknown?</td><td>Indicates whether this virtual desktop is currently in the ‘Unknown’ powerstate.</td><td></td><td>Note that this measure will appear only if the ONLY POWERED ON VMS FLAG is set to ‘No’.

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.

The numeric values that correspond to the Yes/No states above are as follows:

<table><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>
Note:</td></tr>
</table>

Measurement	Description	Measurement Unit	Interpretation
			By default, this measure reports the above- mentioned **State** s 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.

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 Delivery Controller 3/4

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

1. **TEST PERIOD** – How often should the test be executed
2. **HOST** – The host for which the test is to be configured
3. **PORT** – Refers to the port used by the DDC. The default port number is 80.
4. **REPORT BY GROUPNAME** – By default, this flag is set to **Yes**, indicating that this test reports a set of measures for every *desktopgroup:virtualdesktop* combination, by default. To ensure that this test reports a set of measures for every *virtualdesktop* alone, set this flag to **No**.
5. **REPORT BY CONTROLLERNAME** - By default, this flag is set to **Yes**. This implies that every *desktopgroup:virtualdesktop* 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: *Controllername->desktopgroup:virtualdesktop*. If you want to remove the *controllername* prefix from the descriptors, then, set this flag to **No**.
6. **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 *Network availability* 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.

7. **PACKETSIZE** - The size of packets used for the test (in bytes)
8. **PACKETCOUNT** – The number of packets to be transmitted during the test
9. **TIMEOUT** - How long after transmission should a packet be deemed lost (in seconds)
10. **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:	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 Delivery Controller 3/4

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

1. **TEST PERIOD** – How often should the test be executed
2. **HOST** – The host for which the test is to be configured
3. **PORT** – Refers to the port used by the DDC.
4. **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**.
5. **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:

   - 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	Percent	

Measurement	Description	Measurement Unit	Interpretation
	in during the last measurement period.		
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 4.25: 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 Delivery Controller 3/4

Agent deploying the test : An internal agent

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

Configurable parameters for the test

1. **TEST PERIOD** – How often should the test be executed
2. **HOST** – The host for which the test is to be configured
3. **PORT** – Refers to the port used by the DDC.
4. **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**.
5. **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:

- 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 Delivery Controller 3/4

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

1. **TEST PERIOD** – How often should the test be executed
2. **HOST** – The host for which the test is to be configured
3. **PORT** – Refers to the port used by the DDC.
4. **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 *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 USER**s and **ADMIN PASSWORD**s 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 *none*; this indicates that the test is not authorized to reboot/shut down desktops by default.
5. **VD ACTION DURATION** - The test will automatically reboot/shut down virtual desktops, if the disconnected session duration (in minutes) specified here is violated.
6. **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**.
7. **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:

   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 SERVER** and **ADMIN PASSWORD** text boxes are configured with *none*, then again the test will neither reboot nor shut down any virtual desktops.
8. **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**.
9. **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**.

10. **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:

    - 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.
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: • If the **ADMIN USER** and **ADMIN PASSWORD** are not set to '*none*'. • 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	Number	

Measurement	Description	Measurement Unit	Interpretation
	not be restarted/ shut down by this test.		

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 **DOMAIN**s, **ADMIN USER**s, and **ADMIN PASSWORD**s – 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.

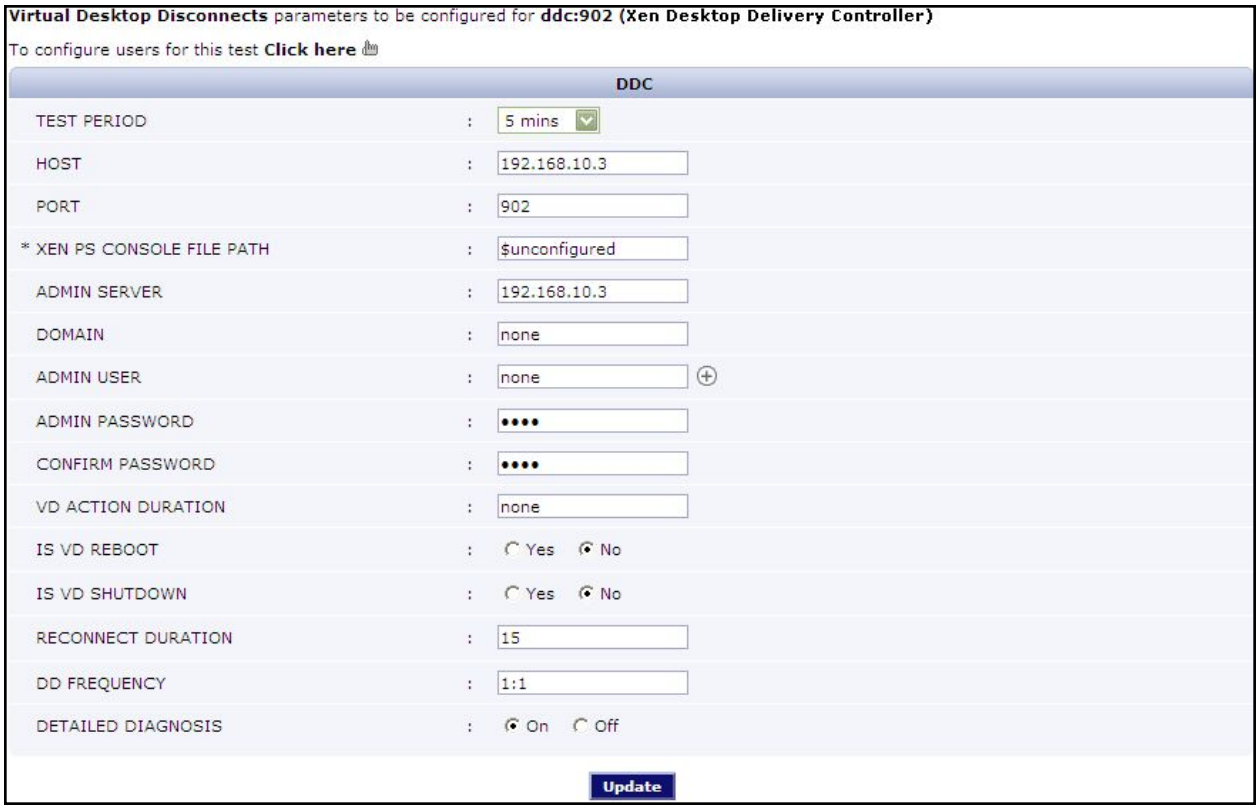


Figure 4.26: Configuring the Virtual Desktop Disconnects test

Upon clicking, Figure 4.27 will appear, using which the VM user details can be configured.

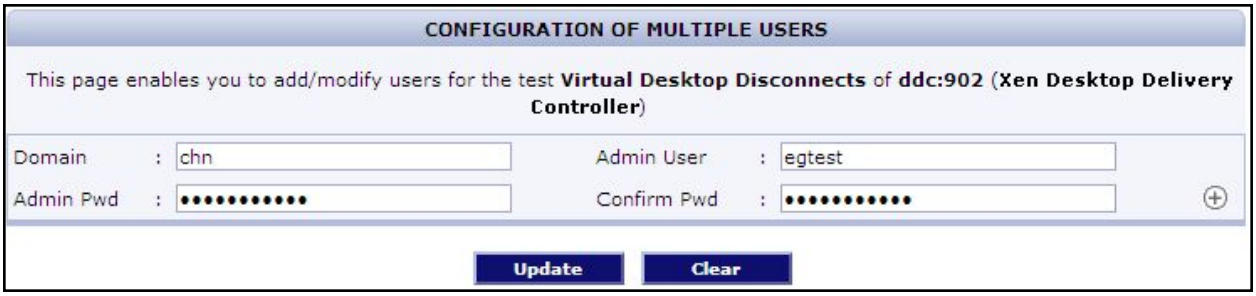


Figure 4.27: The VM user configuration page

To add a user specification, do the following:

1. First, provide the name of the **Domain** to which the VMs belong (see Figure 4.27).
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 4.27. 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 4.28.

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

Figure 4.28: 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 4.28, 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 4.28). 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 4.28.
8. To remove the details of a particular user alone, just click the ⊖ button in Figure 4.28.
9. To save the specification, just click on the **Update** button in Figure 4.28. 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 4.28).

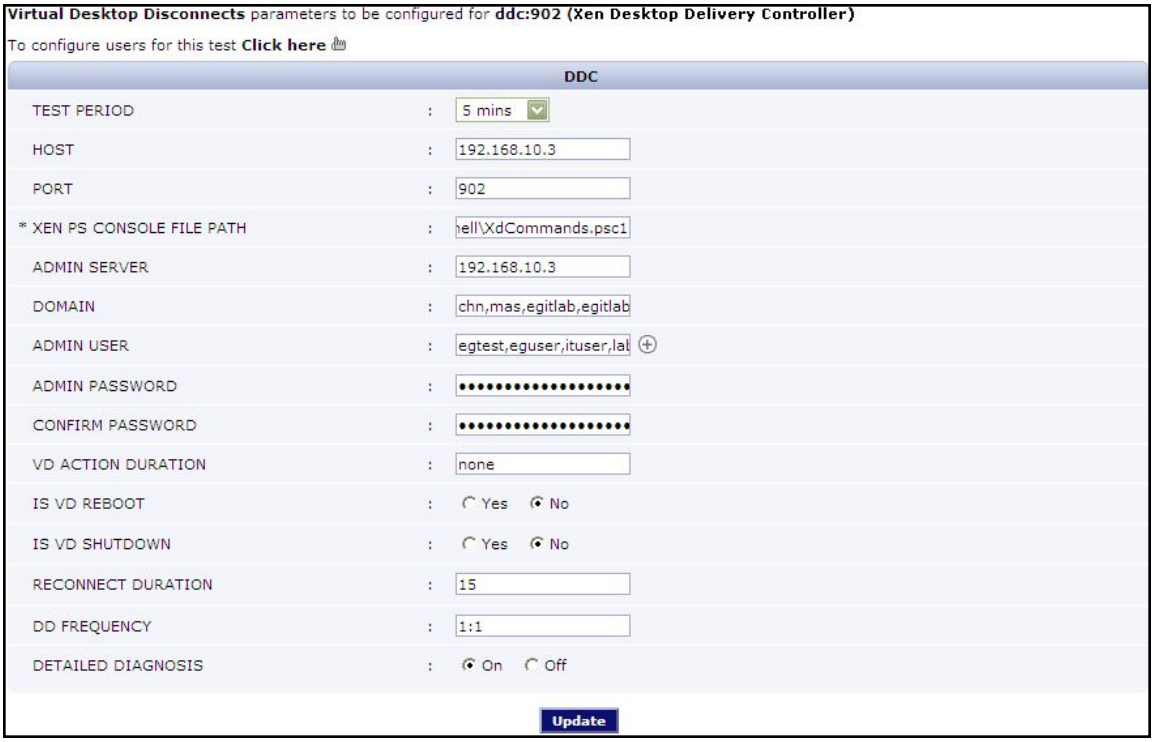


Figure 4.29: The test configuration page displaying multiple domain names, user names, and passwords

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 Delivery Controller 3/4

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

1. **TEST PERIOD** – How often should the test be executed
2. **HOST** – The host for which the test is to be configured
3. **PORT** – Refers to the port used by the DDC.
4. **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 *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 USER**s and **ADMIN PASSWORD**s 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 *none*; this indicates that the test is not authorized to reboot/shut down desktops by default.
5. **VD ACTION DURATION** - The test will automatically reboot/shut down virtual desktops, if the disconnected session duration (in minutes) specified here is violated.
6. **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**.
7. **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:

   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 SERVER** and **ADMIN PASSWORD** text boxes are configured with *none*, then again the test will neither reboot nor shut down any virtual desktops.
8. **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**.
9. **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**.
10. **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:

- 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 /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: • If the **ADMIN USER** and **ADMIN PASSWORD** are not set to '*none*'. • 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	

4.7 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 "<consloefile_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 4.30 below.

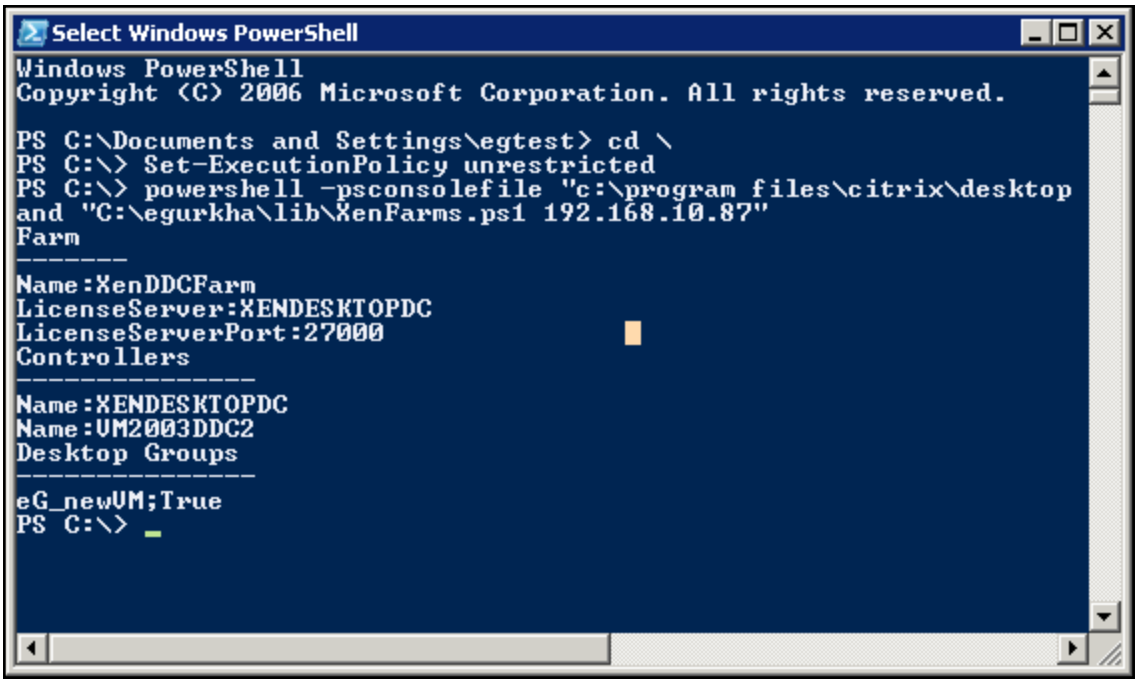


Figure 4.30: Output of the powershell script

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
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

5

How does eG Enterprise Monitor the Delivery Controller 5?

eG Enterprise adopts an agent-based approach to 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 then agent begins collecting the required metrics from the broker, and presents them to users with the help of the monitoring model of Figure 7.2 above.

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 7.2.

6

Administering eG Manager to Monitor Delivery Controller 5

To achieve this, follow the steps given below:

1. Log into the eG administrative interface.
2. The 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 6.1 and Figure 6.2 below.

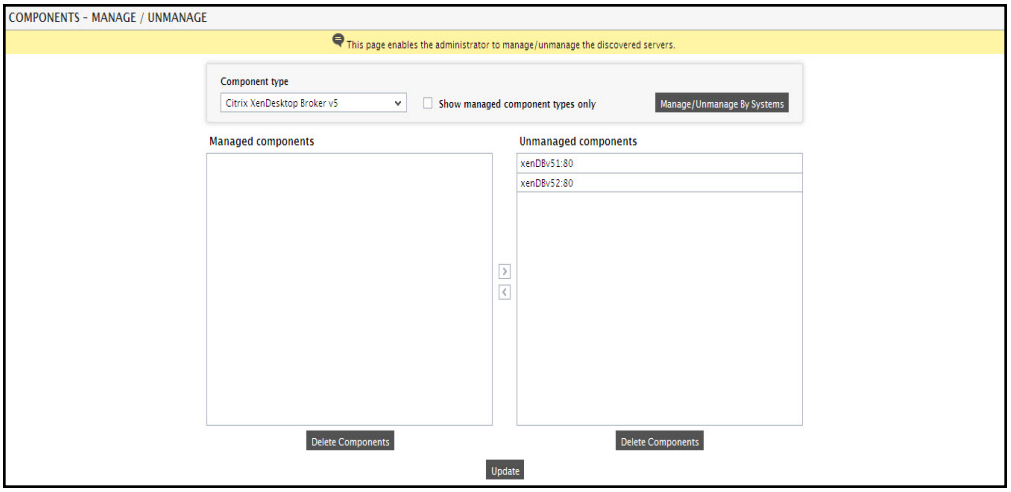


Figure 6.1: Viewing the list of unmanaged Delivery Controller 5 servers

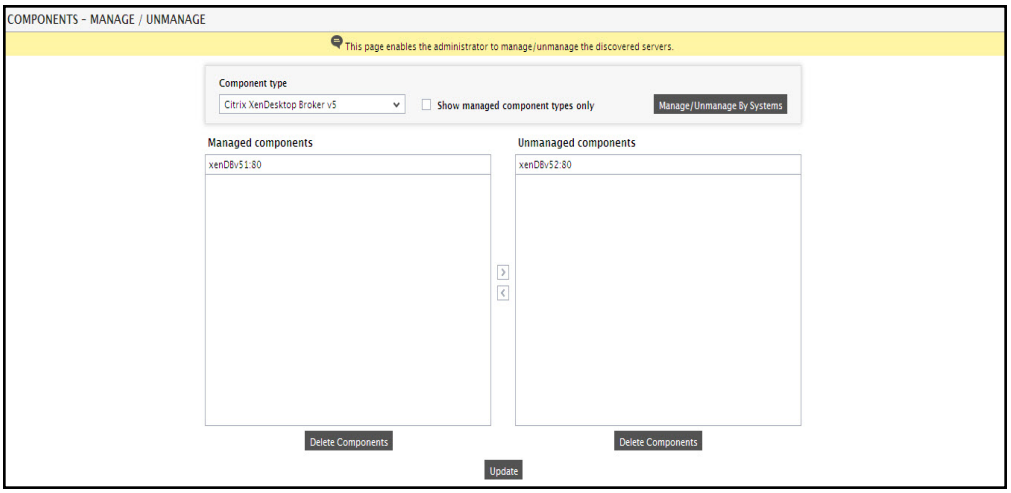


Figure 6.2: Managing a Delivery Controller 5

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

7

Monitoring the Citrix Delivery Controller 5

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 7.1.

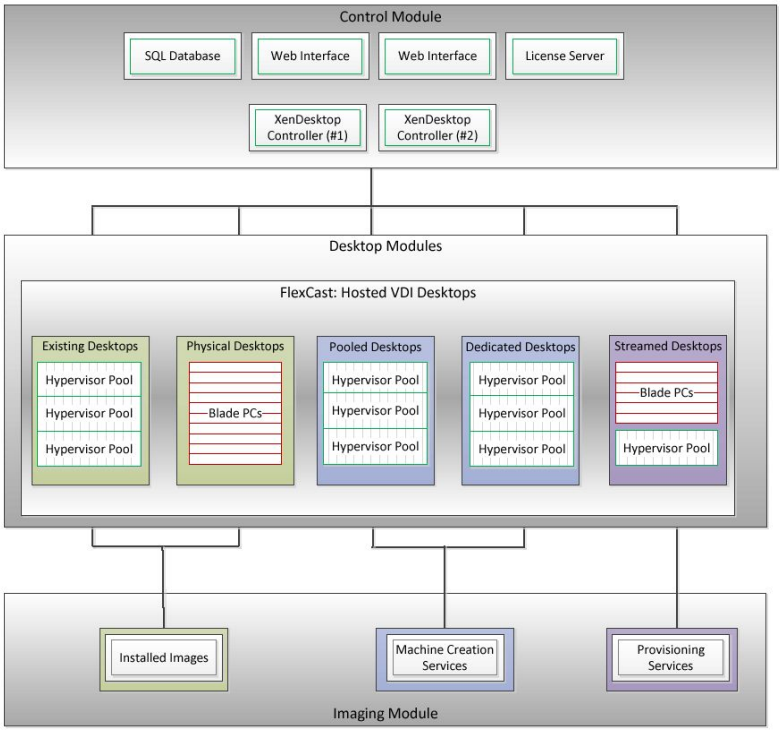


Figure 7.1: How the Delivery Controller 5 service is delivered?

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. Towards this end, eG Enterprise offers a 100%, web-based Delivery Controller- 5 model.

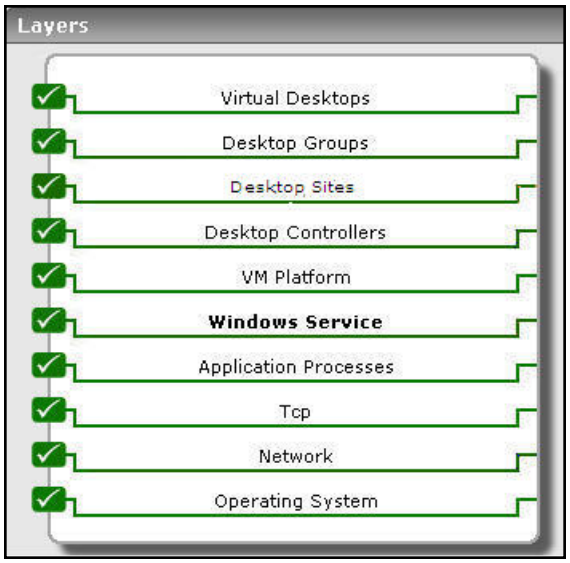


Figure 7.2: Layer model of the Delivery Controller 5

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?

7.1 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 7.3: The tests mapped to the VM Platform layer

7.1.1 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 complaint 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 Delivery Controller 5

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

1. **TEST PERIOD** – How often should the test be executed
2. **HOST** – The host for which the test is to be configured
3. **PORT** – Refers to the port used by the DDC. The default port number is 80.
4. **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:

   - 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

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td>Status of broker's connection to hypervisor:</td><td>Indicates the status of the connection between the broker and this hosting server.</td><td></td><td>This test reports one of the following values to indicate the status of the connection between the broker and a hosting server:
On
InMaintenanceMode
Unavailable
The numeric values that correspond to the above-mentioned states are as follows:<table><tr><th>State</th><th>Numeric Value</th><th>Description</th></tr><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 the virtual desktops 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></table>Note:
By default, this measure reports the above-mentioned State s while indicating the connection status of the broker and the hypervisor. However, the graph of this measure will represent states using the</td></tr>
</table>

Measurement	Description	Measurement Unit	Interpretation
			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.

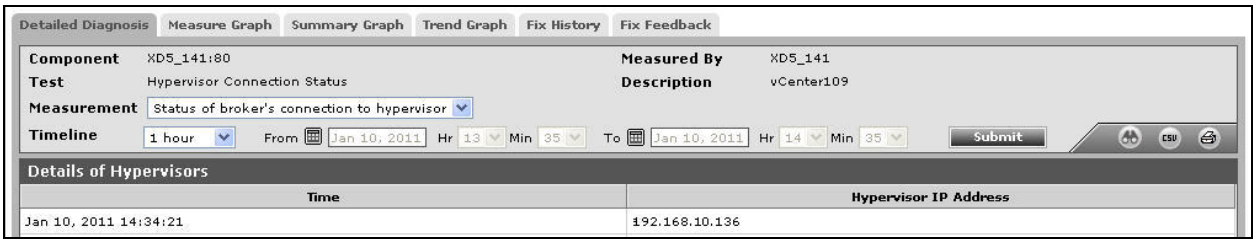


Figure 7.4: The detailed diagnosis of the Status of broker's connection to hypervisor measure

7.2 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

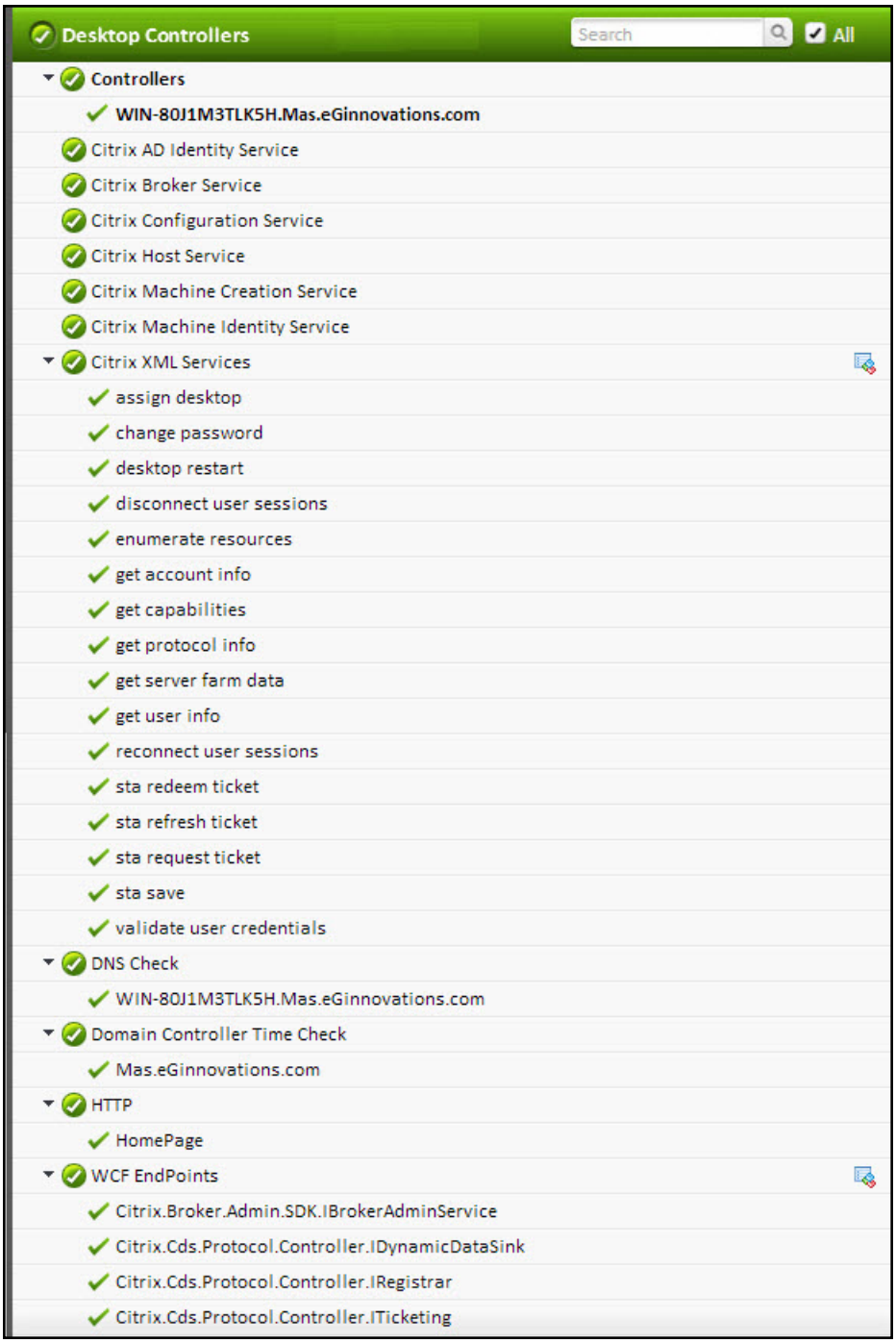


Figure 7.5: The tests mapped to the Desktop Controllers layer

7.2.1 Domain Controller Time Check 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 Delivery Controller 5

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

1. **TEST PERIOD** – How often should the test be executed
2. **HOST** – The host for which the test is to be configured
3. **PORT** – The port at which the server listens.
4. **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:

   - 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.		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:

State	Numeric Value
Ok	1
Error	0

Measurement	Description	Measurement Unit	Interpretation
			Note: 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., 0and 1. 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.

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.

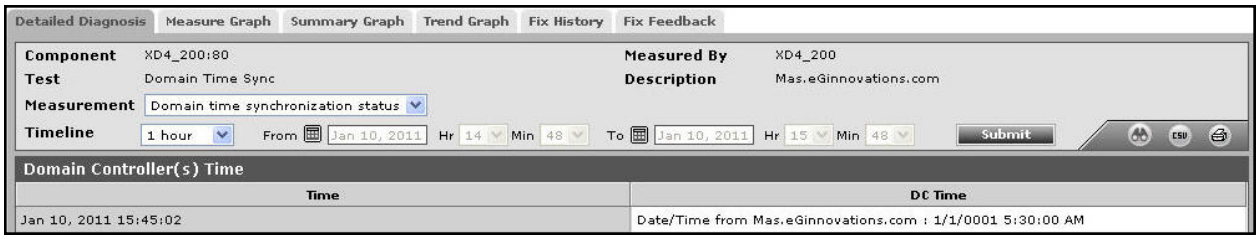


Figure 7.6: The detailed diagnosis of the Domain time synchronization status measure

7.2.2 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 Delivery Controller 5

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

1. **TEST PERIOD** - How often should the test be executed
2. **HOST** - The host for which the test is to be configured.
3. **PORT** – The port at which the server listens
4. **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:

   - The eG manager license should allow the detailed diagnosis capability
   - Both the normal and abnormalfrequencies 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.		This measure reports the value *Ok* if the DNS server is able to resolve the IP address of the DDC to its domain name. The value *Error*, 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:

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>
<table>
<tr><th>State</th><th>Numeric Value</th></tr>
<tr><td>Ok</td><td>1</td></tr>
<tr><td>Error</td><td>0</td></tr>
</table>
Note:
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.
</td></tr>
</table>

7.2.3 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 Delivery Controller 5

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

1. **TEST PERIOD** - How often should the test be executed
2. **HOST** - The host for which the test is to be configured.
3. **PORT** – The port at which the server listens

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Connection status:	Indicates whether connection to this endpoint is available or not.		This measure reports the value *Ok* if the connection to the endpoint is available. The value *Error*, 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: **State** / **Numeric Value** Ok – 1 Error – 0 **Note:** 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.
Service status:	Indicates whether virtual desktops are able to consume services provided by this endpoint.		This measure reports the value *Ok* if the endpoint services are available for consumption. The value *Error*, 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:

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>
<table>
<tr><th>State</th><th>Numeric Value</th></tr>
<tr><td>Ok</td><td>1</td></tr>
<tr><td>Error</td><td>0</td></tr>
</table>
Note:
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.
</td></tr>
</table>

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.

7.2.4 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, brokersin 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>\eGurkha\bin** directory on the agent host.

Target of the test : A Delivery Controller 5

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

1. **TEST PERIOD** – How often should the test be executed
2. **HOST** – The host for which the test is to be configured
3. **PORT** – Refers to the port used by the DDC
4. **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: *C:\Program Files (x86)\Citrix\system32*.
5. **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:

   - 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 broker succeeded or failed in establishing a connection with the data store.		The values that this measure can take and their corresponding numeric values are as follows:

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>
<table>
<tr><th>Measure Value</th><th>Numeric Value</th></tr>
<tr><td>Failure</td><td>0</td></tr>
<tr><td>Success</td><td>1</td></tr>
</table>
If the value reported is Failure, you can use the detailed diagnosis of this test to determine the reason for the connection failure.
Note:
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.
</td></tr>
</table>

7.2.5 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 Delivery Controller 5

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

Configurable parameters for the test

1. **TEST PERIOD** - How often should the test be executed
2. **HOST** - The host for which the test is to be configured.
3. **PORT** – The port at which the server listens
4. **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:

- 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.		This measure reports the value *Ok* if the service is running. The value *Error*, 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: Measure Value: Ok — Numeric Value: 1 Measure Value: Error — Numeric Value: 0 **Note:** 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 *Error*, then, you can use the detailed diagnosis of this test to figure out what is causing the error.

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.

7.2.6 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 Delivery Controller 5

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 **ISFARMSERVER** flag setting)

Configurable parameters for the test

1. **TEST PERIOD** - How often should the test be executed
2. **HOST** - The host for which the test is to be configured.
3. **PORT** – Refers to the port used by the DDC
4. **ISFARMSERVER** - By default, this flag is set to **Yes**, indicating that the monitored server is the *farm* 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 *member* of a farm and not the *farm* 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.
5. **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:

   - 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

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td>Controller state:</td><td>Indicates the current state of this controller.</td><td></td><td>This test reports one of the following values to indicate the current state of a controller:
Active – Indicates that the controller is powered-on and fully operational
On – Indicates that the controller is powered-on, but not fuly operationl
Failed – Indicates that the controller has failed due to some reason
Off – Indicates that the controller is powered-off
The numeric values that correspond to the above- mentioned states are as follows:<table><tr><th>State</th><th>Numeric Value</th></tr><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></table>Note:
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.
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.</td></tr>
<tr><td>Total registered</td><td>Indicates the number of</td><td>Number</td><td></td></tr>
</table>

Measurement	Description	Measurement Unit	Interpretation
desktops:	desktops that are currently registered with this controller.		

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.

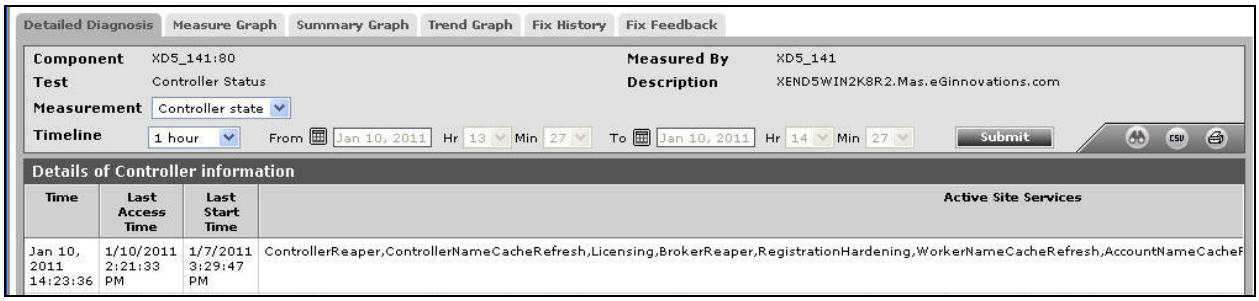


Figure 7.7: The detailed diagnosis of the Controller state measure

7.2.7 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 *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 Delivery Controller 5

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 isfarmserver flag setting)

Configurable parameters for the test

1. **TEST PERIOD** – How often should the test be executed
2. **HOST** – The host for which the test is to be configured
3. **PORT** – Refers to the port used by the DDC
4. **ISFARMSERVER** - By default, this flag is set to **Yes**, indicating that the monitored server is the *farm* 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 *member* of a farm and not the *farm* 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.		If the site service is up and running, then this measure reports the value *Running*. On the other hand, if the service stops, then this measure will report the value *Not Running*. The numeric values that correspond to the above- mentioned states are as follows: State: Running = 1; NotRunning = 0 **Note:** 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.

7.2.8 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 Delivery Controller 5

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

1. **TEST PERIOD** – How often should the test be executed
2. **HOST** – The host for which the test is to be configured
3. **PORT** – Refers to the port used by the DDC

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.
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: **Measure Value** / **Numeric Value** Yes / 1 No / 0

Measurement	Description	Measurement Unit	Interpretation
			Note: By default, this measure reports the above-mentioned **Measure Value**s 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. 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.
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	
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	

Measurement	Description	Measurement Unit	Interpretation
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 rate at which the virtual desktop agents are hard- registered i.e., forcefully registered with the Citrix Broker Service.	Secs	
Registration rejects:	Indicates the rate at which the Citrix Broker Service rejects registration requests from virtual desktops.	Rejects/Sec	
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	

Measurement	Description	Measurement Unit	Interpretation
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	

7.2.9 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 Delivery Controller 5

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

1. **TEST PERIOD** – How often should the test be executed
2. **HOST** – The host for which the test is to be configured
3. **PORT** – Refers to the port used by the DDC

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	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.
Is database connected?:	Indicates whether the Citrix Configuration Service is		This measure reports the value Yes if the database is connected and No if it is

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td>able to connect to the database or not.</td><td></td><td>not. The numeric values that correspond to these measure values are as follows:
<table><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>
Note:
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 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.</td></tr>
<tr><td>Database transaction errors:</td><td>Indicates the rate at which the database transactions are failing while the Citrix Configuration Service is executing the transactions.</td><td>Errors/Sec</td><td>A low value is typically desired for this measure.</td></tr>
<tr><td>Database transactions:</td><td>Indicates the rate at which the database transactions are executed by the Citrix Configuration Service.</td><td>Trans/Sec</td><td></td></tr>
</table>

7.2.10 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 Delivery Controller 5

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

1. **TEST PERIOD** – How often should the test be executed
2. **HOST** – The host for which the test is to be configured
3. **PORT** – Refers to the port used by the DDC

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	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.
Is database connected?:	Indicates whether the Citrix Host Service is able to connect to the database 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: **Measure Value** / **Numeric Value** Yes / 1 No / 0 **Note:** By default, this measure reports the above-mentioned **Measure Value**s 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. 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.

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

7.2.11 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 complaint.

Target of the test : A Delivery Controller 5

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

1. **TEST PERIOD** – How often should the test be executed
2. **HOST** – The host for which the test is to be configured
3. **PORT** – Refers to the port used by the DDC

Measurements made by the test

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td>Database average transaction time:</td><td>Indicates the average time taken by the broker to execute a database transaction from the Citrix AD Identity Service.</td><td>Secs</td><td>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 cause significant delays for users in accessing their desktops.</td></tr>
<tr><td>Is database connected:</td><td>Indicates whether the Citrix AD Identity Service is able to connect to the database or not.</td><td></td><td>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:<table><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>Note:
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.
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 deskops for users.</td></tr>
<tr><td>Database transaction errors:</td><td>Indicates the rate at which the database transactions are failing while the Citrix AD Identity Service is executing the transactions.</td><td>Errors/Sec</td><td>A low value is typically desired for this measure.</td></tr>
</table>

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

7.2.12 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 Delivery Controller 5

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

1. **TEST PERIOD** – How often should the test be executed
2. **HOST** – The host for which the test is to be configured
3. **PORT** – Refers to the port used by the DDC

Measurements made by the test

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td>Database average transaction time:</td><td>Indicates the average time taken by the broker to execute a database transaction from the Citrix MCS.</td><td>Secs</td><td>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.</td></tr>
<tr><td>Is database connected?:</td><td>Indicates whether the Citrix MCS is able to connect to the database or not.</td><td></td><td>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:<table><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>Note:
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.
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.</td></tr>
<tr><td>Database transaction errors:</td><td>Indicates the rate at which the database transactions are failing while the Citrix MCS is executing the transactions.</td><td>Errors/Sec</td><td>A low value is typically desired for this measure.</td></tr>
<tr><td>Database transactions:</td><td>Indicates the rate at which the database transactions</td><td>Trans/Sec</td><td></td></tr>
</table>

Measurement	Description	Measurement Unit	Interpretation
	are executed by the Citrix MCS.		

7.2.13 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 Delivery Controller 5

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

1. **TEST PERIOD** – How often should the test be executed
2. **HOST** – The host for which the test is to be configured
3. **PORT** – Refers to the port used by the DDC

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 Machine Identity service.	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 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		This measure reports the value *Yes* if the database is connected and *No* if it is

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td>able to connect to the database or not.</td><td></td><td>not. The numeric values that correspond to these measure values are as follows:
<table><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>
Note:
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.
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.</td></tr>
<tr><td>Database transaction errors:</td><td>Indicates the rate at which the database transactions are failing while the Citrix Machine Identity service is executing the transactions.</td><td>Errors/Sec</td><td>A low value is typically desired for this measure.</td></tr>
<tr><td>Database transactions:</td><td>Indicates the rate at which the database transactions are executed by the Citrix Machine Identity service.</td><td>Trans/Sec</td><td></td></tr>
</table>

7.2.14 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 Delivery Controller 5

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

1. **TEST PERIOD** – How often should the test be executed
2. **HOST** – The host for which the test is to be configured
3. **PORT** – Refers to the port used by the DDC

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.
Transactions:	Indicates the rate at which this transaction was processed by the XML service.	Trans/Sec	

7.2.15 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 Delivery Controller 5

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

1. **TEST PERIOD** - How often should the test be executed
2. **HOST** - The host for which the test is to be configured.
3. **PORT** – The port at which the server listens
4. **ALERTFILE** - Specify the path to the alert log file to be monitored. For eg., C:/cds/controller.log. Multiple log file paths can be provided as a comma- separated list - eg., c:/cds/pool.log,C:/cds/controller.log.

   Also, instead of a specific log file path, the path to the directory containing log files can be provided - eg., c:/cds. 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, c:/cds/*pool*. 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.

   You can also configure the path in the following format:Name@logfilepath. Here, Name represents the display name of the path being configured. Accordingly, the parameter specification for the 'pool' example discussed above can be: pool@/tmp/db/*pool*. In this case, the display name *pool* will alone be displayed as the descriptor of this test.

   Every time this test is executed, the eG agent verifies the following:

   - 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;

   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).
5. **SEARCHPATTERN** - 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.
For example, say you specify *XenFactory:*XenFactory**, in the **SEARCHPATTERN** text box. This indicates that "XenFactory" is the pattern name to be displayed in the monitor interface. "**XenFactory***" indicates that the test will monitor only those lines in the log which contain the term "*XenFactory*".

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.

Multiple search patterns can be specified as a comma- separated list. For example: *XenFactory:*XenFactory*,LicenseRetry:*LicenseRetryThreadBody**

If the **ALERTFILE** specification is of the format *Name@logfilepath*, then the descriptor for this test in the eG monitor interface will be of the format: *Name:PatternName*. 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: *LogFilePath:PatternName*.

If you want all the messages in a log file to be monitored, then your specification would be: **<PatternName>:***.

6. **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 *XenFactory:*XenFactory*,LicenseRetry:*LicenseRetryThreadBody**:

   0:0 will be applied to *XenFactory:*XenFactory** pattern

   1:1 will be applied to *LicenseRetry:*LicenseRetryThreadBody** pattern

7. **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*'.

8. **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 *Pattern1:*fatal*,Pattern2:*error** 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.

9. **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: *Directory_containing_ monitored_ file:<SearchPattern>* . For instance, if the **ALERTFILE** parameter is set to *c:\eGurkha\logs\syslog.txt*, and **ROTATINGFILE** is set to **true**, then, your descriptor will be of the following format: *c:\eGurkha\logs:<SearchPattern>*. On the other hand, if the **ROTATINGFILE** flag had been set to **false**, then the descriptors will be of the following format: *<FileName>:<SearchPattern>* - i.e., *syslog.txt:<SearchPattern>* in the case of the example above.

   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: *Configured_directory_path:<SearchPattern>.* For instance, if the **ALERTFILE** parameter is set to *c:\eGurkha\logs*, and **ROTATINGFILE** is set to **true**, then, your descriptor will be: *c:\eGurkha\logs:<SearchPattern>* . On the other hand, if the **ROTATINGFILE** parameter had been set to **false**, then the descriptors will be of the following format: *Configured_directory:<SearchPattern>* - i.e., *logs:<SearchPattern>* in the case of the example above.

   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: *<FilePattern>:<SearchPattern>*. For instance, if the **ALERTFILE** parameter is set to *c:\eGurkha\logs*sys**, and **ROTATINGFILE** is set to **true**, then, your descriptor will be: **sys*:<SearchPattern>*. In this case, the descriptor format will not change even if the **ROTATINGFILE** flag status is changed.

10. **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**.

11. **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:

    - 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	Number	The value of this measure is a clear indicator

Measurement	Description	Measurement Unit	Interpretation
	errors that were added to the alert log when the test was last executed.		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.

7.3 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 7.8: The tests mapped to the Desktop Site layer

7.3.1 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 *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 Delivery Controller 5

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

1. **TEST PERIOD** – How often should the test be executed
2. **HOST** – The host for which the test is to be configured
3. **PORT** – Refers to the port used by the DDC
4. **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 *catalog name: desktop name* combination, by default. To ensure that this test reports the *desktop name* alone, set this flag to **No**.
5. **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:

   - 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.		This measure reports the following values to indicate the operational state of a desktop. • On • TurningOn • Resuming • Suspending • Suspended

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>

Off
TurningOff
Unmanaged
Unavailable
Unknown

The numeric values that correspond to the above-mentioned states are as follows:
<table>
<tr><th>State</th><th>Numeric Value</th></tr>
<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>
</table>
Note:
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.
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.
</td></tr>
<tr><td>Registration state:</td><td>Indicates whether this desktop is registered with</td><td></td><td>This measure reports the following states to indicate the registration state of the</td></tr>
</table>

Measurement	Description	Measurement Unit	Interpretation
	the broker or not.		desktop. • Registered • Unregistered • AgentError 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: • 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) An AgentError is reported if the Virtual Desktop Agent itself is experiencing issues in its operations. The numeric values that correspond to the above-mentioned states are as follows:

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>
<table>
<tr><th>State</th><th>Numeric Value</th></tr>
<tr><td>Registered</td><td>1</td></tr>
<tr><td>Unregistered</td><td>2</td></tr>
<tr><td>AgentError</td><td>3</td></tr>
</table>
Note:
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.
</td></tr>
</table>

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.

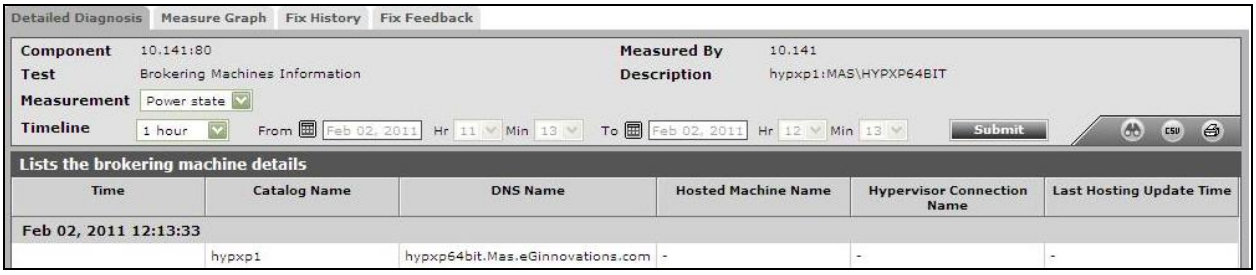


Figure 7.9: The detailed diagnosis of the Power state measure reported by the Brokering Machines Test

7.3.2 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 Delivery Controller 5

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

1. **TEST PERIOD** – How often should the test be executed
2. **HOST** – The host for which the test is to be configured
3. **PORT** – Refers to the port used by the DDC
4. **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:

   - 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.		This measure can report one of the following values: • Permanent • Random The table below provides the numeric values that correspond to the allocation types listed above, and a brief description of each type:

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>
<table>
<tr><th>Allocation Type</th><th>Numeric Value</th><th>Description</th></tr>
<tr><td>Permanent</td><td>1</td><td>Indicates that the virtual desktops in this catalog are permanently assigned to the user.</td></tr>
<tr><td>Random</td><td>2</td><td>Indicates that the virtual desktops in this catalog are picked in random and are temporarily assigned to the user.</td></tr>
</table>
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 and 2.
</td></tr>
<tr><td>Total machines:</td><td>Indicates the number of virtual desktops in this catalog.</td><td>Number</td><td></td></tr>
<tr><td>Machines assigned to users:</td><td>Indicates the number of virtual desktops in this catalog that are currently assigned to users.</td><td>Number</td><td></td></tr>
</table>

Measurement	Description	Measurement Unit	Interpretation
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 catalog, which are not part of any desktop group.	Number	
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 arewithin desktop groups.	Number	
Catalog kind:	Indicates the type of catalog.		This measure reports one of the following values: • ThinCloned • SingleImage • PowerManaged • Unmanaged • PVS • Unknown

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>The table below provides the description for each of the aforesaid catalog types:
<table>
<tr><th>Catalog Type</th><th>Description</th></tr>
<tr><td>ThinCloned</td><td>This type of 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 catalog is for the virtual desktops</td></tr>
</table></td></tr>
</table>

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>
<table>
<tr><th>Catalog Type</th><th>Description</th></tr>
<tr><td></td><td>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 a single golden VM image in the PVS is shared by multiple virtual desktops when they are assigned to users and the data available in the virtual desktops are lost, once the desktops are restarted.</td></tr>
<tr><td>PowerManaged</td><td>This type of catalog indicates that the managed virtual desktops are manually provisioned by the administrators. These virtual</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>
<table>
<tr><th>Catalog Type</th><th>Description</th></tr>
<tr><td></td><td>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 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>
</table>
</td></tr>
</table>

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>The numeric values that correspond to the Catalog Types in the table are as follows:
<table><tr><th>State</th><th>Numeric Value</th></tr><tr><td>ThinCloned</td><td>1</td></tr><tr><td>SingleImage</td><td>2</td></tr><tr><td>PowerManaged</td><td>3</td></tr><tr><td>Unmanaged</td><td>4</td></tr><tr><td>PVS</td><td>5</td></tr><tr><td>Unknown</td><td>0</td></tr></table>
Note:
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.</td></tr>
<tr><td>Physical machines included in catalog:</td><td>Indicates whether or not this catalog contains any physical desktops.</td><td></td><td>This measure is relevant only if the Catalog kind measure reports the value PVS – i.e., only if the type of catalog is PVS.

This measure reports the values Yes or No to indicate whether or not a catalog contains any physical desktops.

The numeric values that correspond to the Yes/No states are as follows:
<table><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>
Note:
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.</td></tr>
</table>

Measurement	Description	Measurement Unit	Interpretation
			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.

7.3.3 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 Delivery Controller 5

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

1. **TEST PERIOD** – How often should the test be executed
2. **HOST** – The host for which the test is to be configured
3. **PORT** – Refers to the port used by the DDC.
4. **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:

- 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	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. 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. 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.
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.		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.

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>This measure reports the following states while indicating the broker connection to the configured database.
Ok
DBUnconfigured
DBRejectedConnection
InvalidDBConfigured
DBNewerVersionThanService
DBOlderVersionThanService
DBVersionChangeInProgress
PendingFailure
Failed
Unknown
The table below briefly describes each of the states listed above:<table><tr><th>State</th><th>Description</th></tr><tr><td>Ok</td><td>Indicates that the broker is connected to a valid database and the service is running.</td></tr><tr><td>DBUnconfigured</td><td>Indicates that the broker does not possess a configured database connection.</td></tr><tr><td>DBRejectedConnection</td><td>Indicates that the database has rejected</td></tr></table></td></tr>
</table>

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>
<table>
<tr><th>State</th><th>Description</th></tr>
<tr><td></td><td>the login credentials from the Broker Service. This may be caused by bad login credentials, or due to the database 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>DBOlderVersionThanService</td><td>Indicates that the version of the database is older than</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>
<table>
<tr><th>State</th><th>Description</th></tr>
<tr><td></td><td>the broker version. To access the database, upgrade the version of the database.</td></tr>
<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</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>
<table>
<tr><th>State</th><th>Description</th></tr>
<tr><td></td><td>an extended period of time, or 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>
</table>
The table below lists the numeric values that correspond to the states reported by this measure:
<table>
<tr><th>State</th><th>Numeric Value</th></tr>
<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>DBNewerVersionThanService</td><td>5</td></tr>
<tr><td>DBOlderVersionThanService</td><td>6</td></tr>
<tr><td>DBVersionChangeinProgress</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>
</table>
Note:
</td></tr>
</table>

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>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.</td></tr>
<tr><td>Status of Host service on controller:</td><td>Indicates the current state of the Host service on the controller.</td><td></td><td>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.

The table below lists the States reported by this measure and the numeric values that correspond to each of these states:

<table>
<tr><th>State</th><th>Numeric Value</th></tr>
<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>DBNewerVersionThanService</td><td>5</td></tr>
<tr><td>DBOlderVersionThanService</td><td>6</td></tr>
<tr><td>DBVersionChangeinProgress</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>
</table>
Note:

By default, this measure reports the States listed in the table above to indicate the status of the Citrix Host service. However, the graph of this measure will represent States using the corresponding numeric equivalents – i.e., 1 to</td></tr>
</table>

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>10 only.</td></tr>
<tr><td>Status of AD Identity service on controller:</td><td>Indicates the current state of the AD Identity service on the controller.</td><td></td><td>The AD Identity server manages Active Directory computer accounts.

The table below lists the States reported by this measure and the numeric values that correspond to each of these states:

<table><tr><th>State</th><th>Numeric Value</th></tr><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>DBNewerVersionThanService</td><td>5</td></tr><tr><td>DBOlderVersionThanService</td><td>6</td></tr><tr><td>DBVersionChangeinProgress</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></table>
Note:

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.</td></tr>
<tr><td>Status of Configuration service on controller:</td><td>Indicates the current status of the Configuration service on the controller.</td><td></td><td>The Citrix Configuration Service stores global meta-data about all the other services so there is no SCP record needed in AD anymore.

The table below lists the States reported by this measure and the numeric values that correspond to each of these states:</td></tr>
</table>

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>
<table>
<tr><th>State</th><th>Numeric Value</th></tr>
<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>DBNewerVersionThanService</td><td>5</td></tr>
<tr><td>DBOlderVersionThanService</td><td>6</td></tr>
<tr><td>DBVersionChangeinProgress</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>
</table>
Note:
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 States using the corresponding numeric equivalents – i.e., 1 to 10 only.
</td></tr>
<tr><td>Status of Machine Creation service on controller:</td><td>Indicates the current state of the Machine Creation server on the controller.</td><td></td><td>
The Citrix Machine Creation Service creates new virtual machines.
The table below lists the States reported by this measure and the numeric values that correspond to each of these states:
<table>
<tr><th>State</th><th>Numeric Value</th></tr>
<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>
</table>
</td></tr>
</table>

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>
<table>
<tr><th>State</th><th>Numeric Value</th></tr>
<tr><td>DBNewerVersionThanService</td><td>5</td></tr>
<tr><td>DBOlderVersionThanService</td><td>6</td></tr>
<tr><td>DBVersionChangeinProgress</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>
</table>
Note:
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.
</td></tr>
<tr><td>Status of Machine Identity service on controller:</td><td>Indicates the current status of the Machine Identity service on the controller.</td><td></td><td>The Citrix Machine Identity Service manages the storage of virtual machines.
The table below lists the States reported by this measure and the numeric values that correspond to each of these states:
<table>
<tr><th>State</th><th>Numeric Value</th></tr>
<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>DBNewerVersionThanService</td><td>5</td></tr>
<tr><td>DBOlderVersionThanService</td><td>6</td></tr>
<tr><td>DBVersionChangeinProgress</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>
</table>
</td></tr>
</table>

Measurement	Description	Measurement Unit	Interpretation
			Note: By default, this measure reports the **State**s listed in the table above to indicate the status of the Citrix Machine Identity service. However, the graph of this measure will represent **State** s 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 7.10: The detailed diagnosis of the License server availability measure

7.4 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?

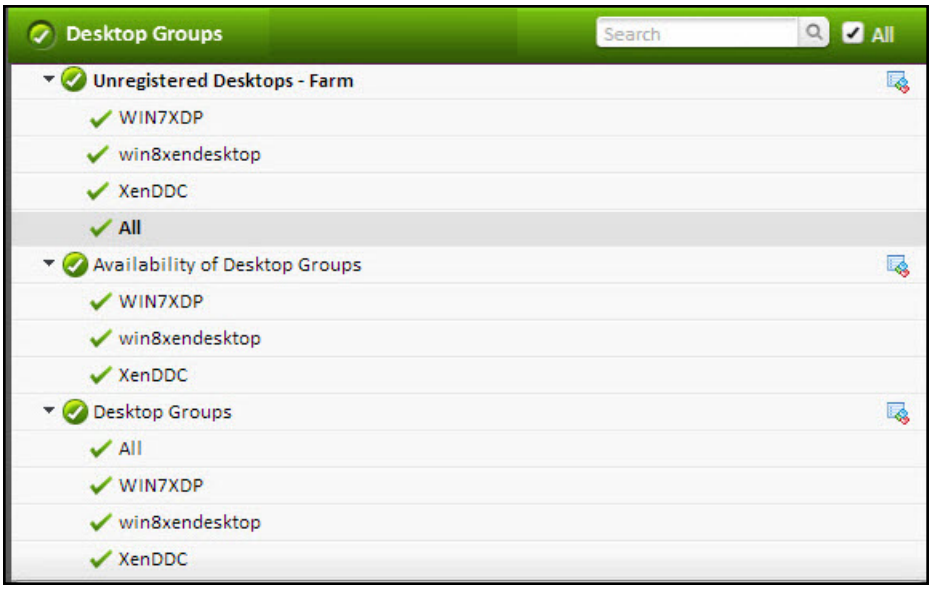


Figure 7.11: The tests mapped to the Desktop Groups layer

7.4.1 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 Delivery Controller 5

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

1. **TEST PERIOD** – How often should the test be executed
2. **HOST** – The host for which the test is to be configured
3. **PORT** – Refers to the port used by the DDC. The default port number is 80.
4. **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:

- 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.		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. XenDesktop has no control over desktop groups that are in maintenance mode. No user can log on to a desktop in this state. This measure reports the value *Yes* if a desktop group is in the maintenance mode, and reports *No* if it is not. The numeric values that correspond to the above-mentioned states are as follows: State: Yes = 1; No = 0 **Note:** 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.

Measurement	Description	Measurement Unit	Interpretation
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 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	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. Moreover, high usage of a desktop group may also drain the corresponding hosting infrastructure of its physical and virtual

Measurement	Description	Measurement Unit	Interpretation
			resources.
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	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. 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.
Registered desktops:	Indicates the number of desktops that are registered in this desktop 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.

Measurement	Description	Measurement Unit	Interpretation
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 available currently.	Number	Unavailable desktops are those desktops to which the Citrix Broker service is unable to broker user connections. This problem occurs when a Desktop Group is configured with the '*ShutdownAfterUse*' parameter, but is not properly shutdown by the XenDesktop DDC after use. When a session is started to a desktop group with the '*ShutdownAfterUse*' setting enabled, the desktop is flagged with a parameter called

Measurement	Description	Measurement Unit	Interpretation
			'*WillShutdownAfterUse*'. This flag is cleared when the desktop is shut down by the broker, so if/when a '*ShutdownAfterUse*' 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. 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. 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 troubleshooting will be required to address this. 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:

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.

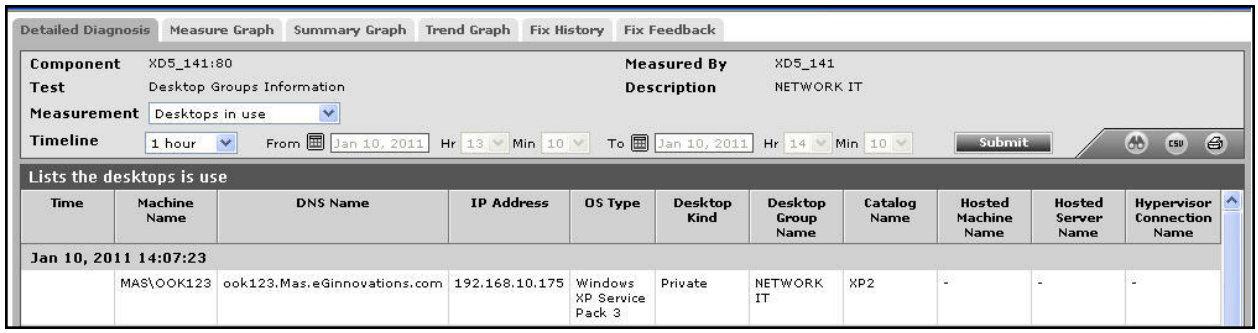


Figure 7.12: The detailed diagnosis of the Desktops in use measure

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

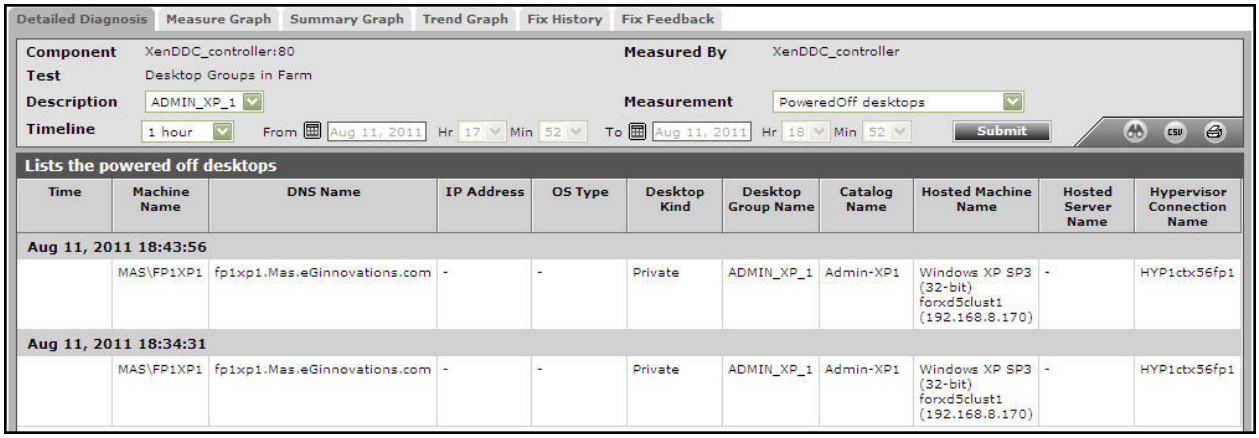


Figure 7.13: The detailed diagnosis of the Poweredoff desktops measure

7.4.2 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 Delivery Controller 5

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

1. **TEST PERIOD** – How often should the test be executed
2. **HOST** – The host for which the test is to be configured

3. **PORT** – Refers to the port used by the DDC.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Is desktop group available?:	Indicates the availability of this desktop group.		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: State: Yes – Numeric Value: 1 State: No – Numeric Value: 0 **Note:** 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.

7.4.3 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 Delivery Controller 5

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

1. **TEST PERIOD** – How often should the test be executed
2. **HOST** – The host for which the test is to be configured
3. **PORT** – Refers to the port used by the DDC.
4. **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:

   - 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	A high value is indicative of too many unregistered desktops in a group. Some of the common reasons for registration failures are as follows: **Reason** | **Resolution** Improper firewall | If the firewall on the

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>
<table>
<tr><th>Reason</th><th>Resolution</th></tr>
<tr><td>configuration</td><td>virtual desktop has not had the appropriate exclusions configured to enable communication with controllers, the registration fails. Reconfigure and re-enable the firewall.</td></tr>
<tr><td>Incorrect DNS configuration</td><td>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.</td></tr>
<tr><td>Time synchronization not properly configured</td><td>The communication between virtual desktops and controllers is secured using Kerberos. This relies on Tickets with a limited life span.</td></tr>
<tr><td></td><td>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</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>
<table>
<tr><th>Reason</th><th>Resolution</th></tr>
<tr><td></td><td>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).</td></tr>
<tr><td>Domain membership problems</td><td>Under some circumstances, it can appear that a machine (virtual 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.</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>
<table>
<tr><th>Reason</th><th>Resolution</th></tr>
<tr><td>Service Principal Names (SPNs)</td><td>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-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</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>
<table>
<tr><th>Reason</th><th>Resolution</th></tr>
<tr><td></td><td>the computer's fully qualified domain name, try editing it manually, and check to see if that fixes registration problems.</td></tr>
<tr><td>Multiple network adapters</td><td>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.</td></tr>
<tr><td>Virtual desktop not added to the site</td><td>If you see Virtual Desktop Agent event log entries on the worker suggesting registration failure, complete the following steps:
• 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</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>
<table>
<tr><th>Reason</th><th>Resolution</th></tr>
<tr><td></td><td>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 machine has not been added to the site correctly.
• 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.</td></tr>
</table>
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.
</td></tr>
</table>

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.

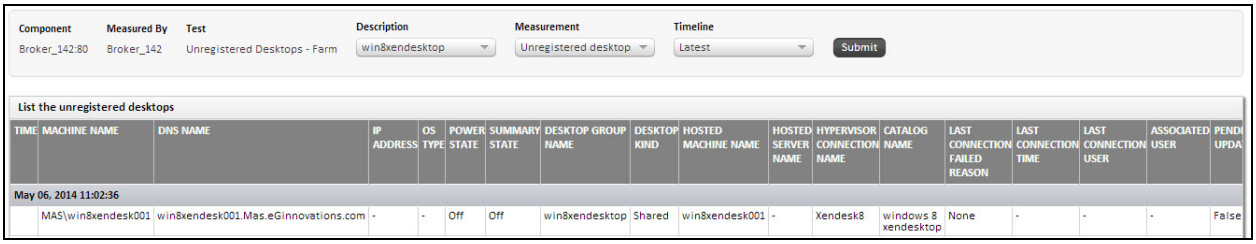


Figure 7.14: Detailed diagnosis of Unregistered desktops measure

7.5 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 7.15: The tests mapped to the Virtual Desktops layer

7.5.1 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 Delivery Controller 5

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

1. **TEST PERIOD** – How often should the test be executed
2. **HOST** – The host for which the test is to be configured
3. **PORT** – Refers to the port used by the DDC.
4. **RECONNECT DURATION** - The **RECONNECT DURATION** parameter is used by this 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**. By default, the **RECONNECT DURATION** is 15 minutes.
5. **DD FREQUENCY** - The **DD FREQUENCY** refers to the frequency with which detailed diagnosis measures are to be generated. 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. Typically, detailed diagnosis frequencies are set globally, using the **DIAGNOSIS CONFIGURATION** page that appears when the Configure -> Diagnosis menu sequence is followed. This global setting can be overridden at the test-level using the **DD FREQUENCY** parameter. To disable the detailed diagnosis capability for a test, you can set this parameter to *none*.
6. **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:

   - 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.

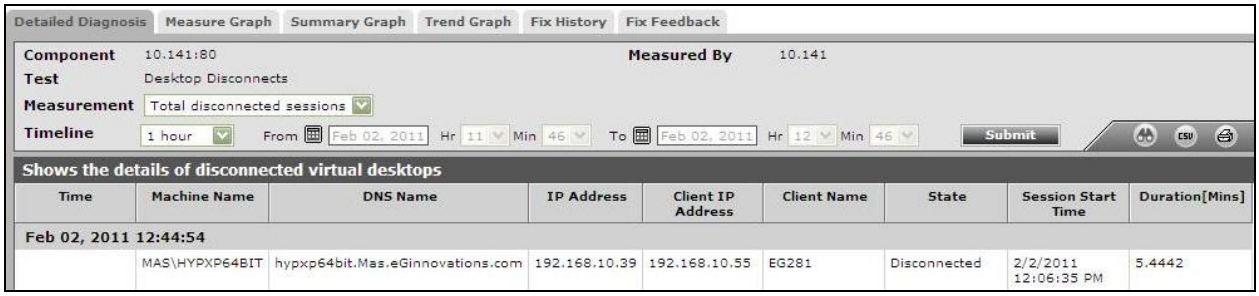


Figure 7.16: The detailed diagnosis of the Total disconnected sessions measure

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.

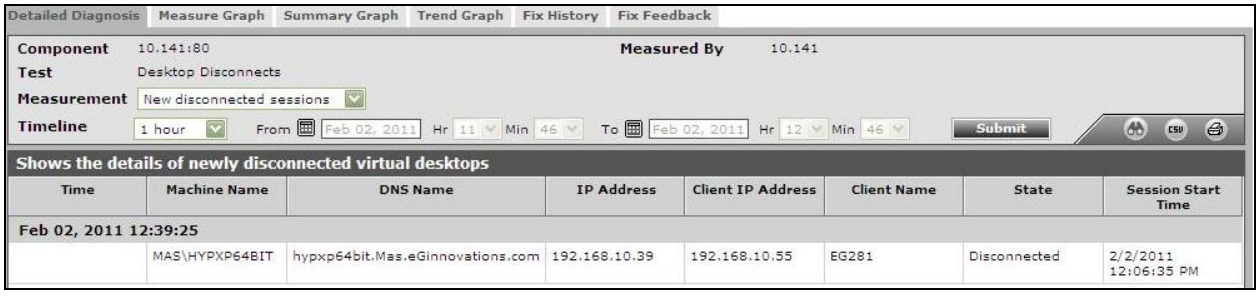


Figure 7.17: The detailed diagnosis of the New disconnected sessions measure

7.5.2 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 Delivery Controller 5

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

1. **TEST PERIOD** – How often should the test be executed
2. **HOST** – The host for which the test is to be configured
3. **PORT** – Refers to the port used by the DDC.
4. **RECONNECT DURATION** - The **RECONNECT DURATION** parameter is used by this 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**. By default, the **RECONNECT DURATION** is 15 minutes.
5. **DD FREQUENCY** - The **DD FREQUENCY** refers to the frequency with which detailed diagnosis measures are to be generated. 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. Typically, detailed diagnosis frequencies are set globally, using the **DIAGNOSIS CONFIGURATION** page that appears when the Configure -> Diagnosis menu sequence is followed. This global setting can be overridden at the test-level using the **DD FREQUENCY** parameter. To disable the detailed diagnosis capability for a test, you can set this parameter to *none*.
6. **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:

   - 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. To determine the details of the currently active sessions, use the detailed diagnosis of this measure.
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.

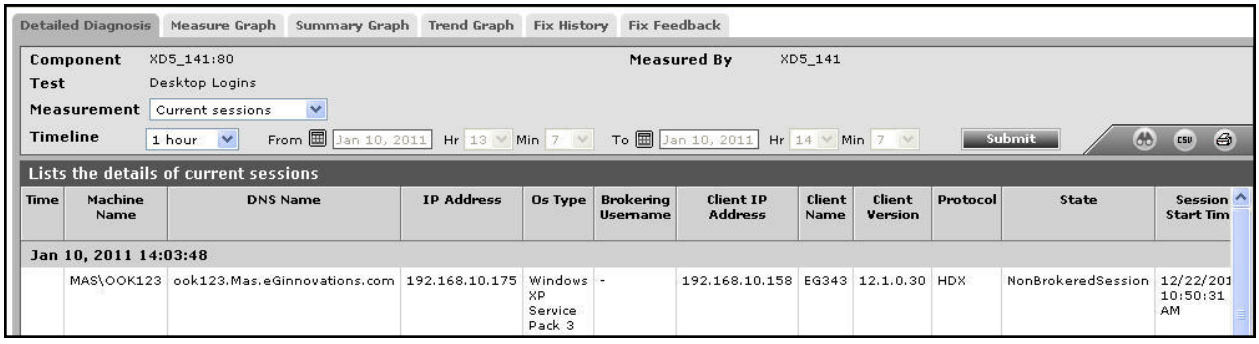


Figure 7.18: The detailed diagnosis of the Current sessions measure

7.5.3 Desktop Applications Test

With Delivery Controller - 5, 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 Delivery Controller 5

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 5

Configurable parameters for the test

1. **TEST PERIOD** – How often should the test be executed
2. **HOST** – The host for which the test is to be configured
3. **PORT** – Refers to the port used by the DDC.
4. **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:

   - 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 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.

7.5.4 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 - 5.

Target of the test : A Delivery Controller 5

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

1. **TEST PERIOD** – How often should the test be executed
2. **HOST** – The host for which the test is to be configured
3. **PORT** – Refers to the port used by the DDC
4. **VIRTUAL DESKTOP AGENT PORT** - Specify the port using which the broker connects to the virtual desktops. By default, 80 is displayed here.
5. **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 desktopgroup:virtualdesktop combination, by default.

To ensure that this test reports a set of measures for every virtualdesktop alone, set this flag to **No**.

6. **REPORT BY CONTROLLERNAME** - By default, this flag is set to **Yes**. This implies that every *desktopgroup:virtualdesktop* 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 d efault: *Controllername->desktopgroup:virtualdesktop*. If you want to remove the controllername prefix from the descriptors, then, set this flag to **No**.
7. **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.

7.5.5 Desktops in Controller Test

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

Target of the test : A Delivery Controller 5

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

1. **TEST PERIOD** – How often should the test be executed
2. **HOST** – The host for which the test is to be configured
3. **PORT** – Refers to the port used by the DDC

4. **VIRTUAL DESKTOP AGENT PORT** - Specify the port using which the broker connects to the virtual desktops. By default, 80 is displayed here.
5. **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 desktopgroup:virtualdesktop combination, by default. To ensure that this test reports a set of measures for every virtualdesktop alone, set this flag to **No**.
6. **REPORT BY CONTROLLERNAME** - By default, this flag is set to **Yes**. This implies that every *desktopgroup:virtualdesktop* 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 d efault: *Controllername->desktopgroup:virtualdesktop*. If you want to remove the controllername prefix from the descriptors, then, set this flag to **No**.
7. **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**.
8. **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:

   - 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.		This measure reports the following states while monitoring the power state of the virtual desktops. • On • TurningOn • Resuming • Suspending • Suspended • Off • TurningOff

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>

Unmanaged
Unavailable
Unknown

The numeric values that correspond to the above-mentioned states are as follows:
<table>
<tr><th>State</th><th>Numeric Value</th></tr>
<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>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>
</table>
Note:
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.
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.
</td></tr>
<tr><td>Registration state:</td><td>Indicates whether this virtual desktop is registered with the broker or not.</td><td></td><td>
This measure reports the following states to indicate the registration state of the virtual desktop.

Registered
Unregistered
AgentError

</td></tr>
</table>

Measurement	Description	Measurement Unit	Interpretation
			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: • 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) For more details, you can refer to the following Citrix Knowledge Articles: • CTX126992 - Troubleshooting Virtual Desktop Agent Registration with Controllers in XenDesktop 5.x • CTX129225 - VDAs fail to register when using disjoint namespaces in a XenDesktop 5 Environment • CTX129700 - XenDesktop 5 Virtual Machines Do Not Successfully Register with the Desktop Delivery Controller

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>An AgentError is reported if the Virtual Desktop Agent itself is experiencing issues in its operations.

The numeric values that correspond to the above-mentioned states are as follows:

<table><tr><th>State</th><th>Numeric Value</th></tr><tr><td>Registered</td><td>1</td></tr><tr><td>Unregistered</td><td>2</td></tr><tr><td>AgentError</td><td>3</td></tr></table>
Note:

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.</td></tr>
<tr><td>Desktop state:</td><td>Indicates the current state of this virtual desktop.</td><td></td><td>This measure indicates the following states while indicating the current state of the virtual desktop.

• Available
• InUse
• Disconnected
• Unregistered
• Off
• Unknown

The numeric values that correspond to the above-mentioned states are as follows:

<table><tr><th>State</th><th>Numeric Value</th></tr><tr><td>Available</td><td>0</td></tr><tr><td>InUse</td><td>1</td></tr><tr><td>Disconnected</td><td>2</td></tr></table></td></tr>
</table>

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>
<table>
<tr><th>State</th><th>Numeric Value</th></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>
</table>
Note:
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.
</td></tr>
<tr><td>Desktop kind:</td><td>Indicates this virtual desktop type.</td><td></td><td>
This measure reports the following values while indicating the virtual desktop type.

Unknown
Private
Shared
PrivateApp
SharedApp

The numeric values that correspond to the above-mentioned types are as follows:
<table>
<tr><th>Type</th><th>Numeric Value</th></tr>
<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>
</table>
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.
</td></tr>
</table>

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td>Is desktop in maintenance mode?</td><td>Indicates whether this virtual desktop is currently under maintenance.</td><td></td><td>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.

The numeric values that correspond to the above-mentioned states are as follows:

<table><tr><th>State</th><th>Numeric Value</th></tr><tr><td>No</td><td>0</td></tr><tr><td>Yes</td><td>1</td></tr></table>
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.</td></tr>
<tr><td>Is user connected desktop?</td><td>Indicates whether any user is currently connected to this virtual desktop or not.</td><td></td><td>This measure reports a value Yes, when the user is connected to the virtual desktop and reports a value No when the user is not connected.

The numeric values that correspond to the above-mentioned values are as follows:

<table><tr><th>State</th><th>Numeric Value</th></tr><tr><td>No</td><td>0</td></tr><tr><td>Yes</td><td>1</td></tr></table>
Note:

By default, this measure reports the values Yes or No 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</td></tr>
</table>

Measurement	Description	Measurement Unit	Interpretation
			corresponding numeric equivalents of 0 and 1 only. If the value of this measure is *Yes*, then, you can identify the user who is connected to the desktop using the detailed diagnosis of this measure.

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.

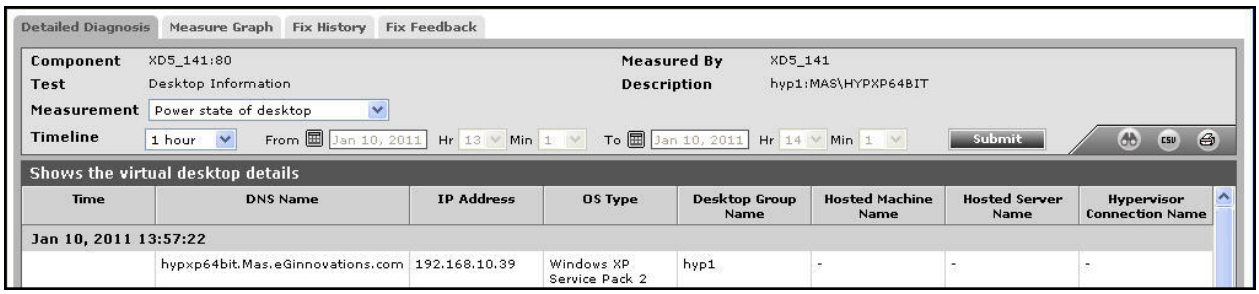


Figure 7.19: The detailed diagnosis of the Power state of desktop measure

7.5.6 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 *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 Delivery Controller 5

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

1. **TEST PERIOD** – How often should the test be executed
2. **HOST** – The host for which the test is to be configured
3. **PORT** – Refers to the port used by the DDC. The default port number is 80.
4. **REPORT BY GROUPNAME** – By default, this flag is set to **Yes**, indicating that this test reports a set of measures for every *desktopgroup:virtualdesktop* combination, by default. To ensure that this test reports a set of measures for every *virtualdesktop* alone, set this flag to **No**.
5. **REPORT BY CONTROLLERNAME** - By default, this flag is set to **Yes**. This implies that every *desktopgroup:virtualdesktop* 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: *Controllername->desktopgroup:virtualdesktop*. If you want to remove the *controllername* prefix from the descriptors, then, set this flag to **No**.
6. **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 Network availability of *desktopmeasure* 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.
7. **PACKETSIZE** - The size of packets used for the test (in bytes)
8. **PACKETCOUNT** – The number of packets to be transmitted during the test
9. **TIMEOUT** - How long after transmission should a packet be deemed lost (in seconds)
10. **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.

Measurement	Description	Measurement Unit	Interpretation
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.

8

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 8.1).

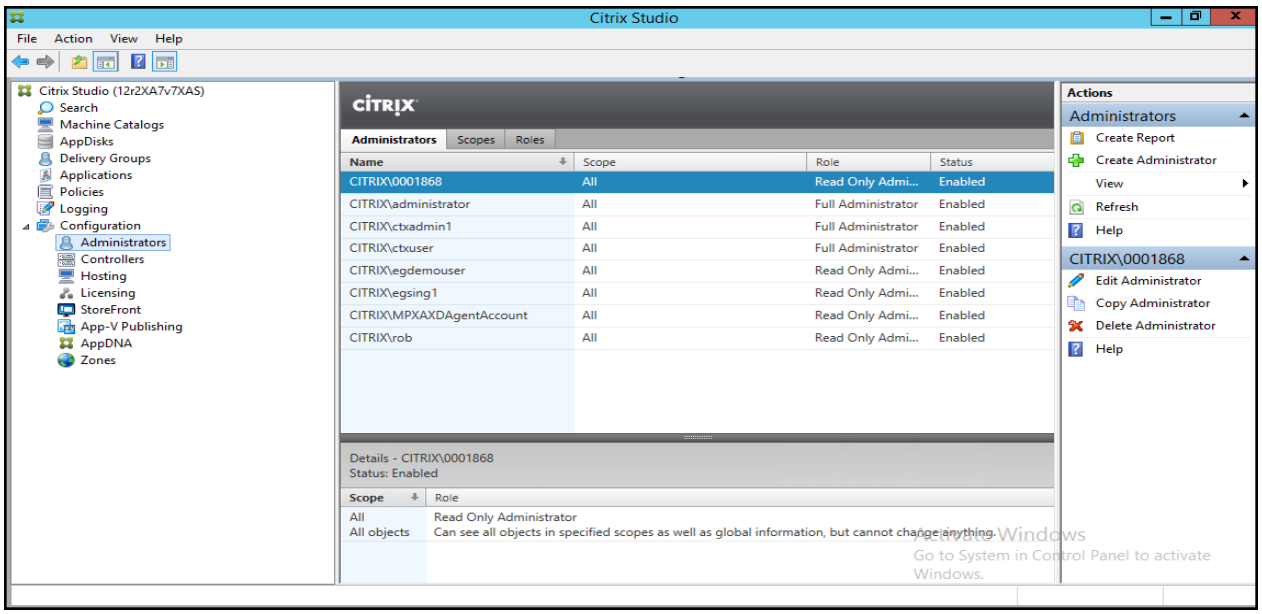


Figure 8.1: Citrix Studio Console

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 8.2).

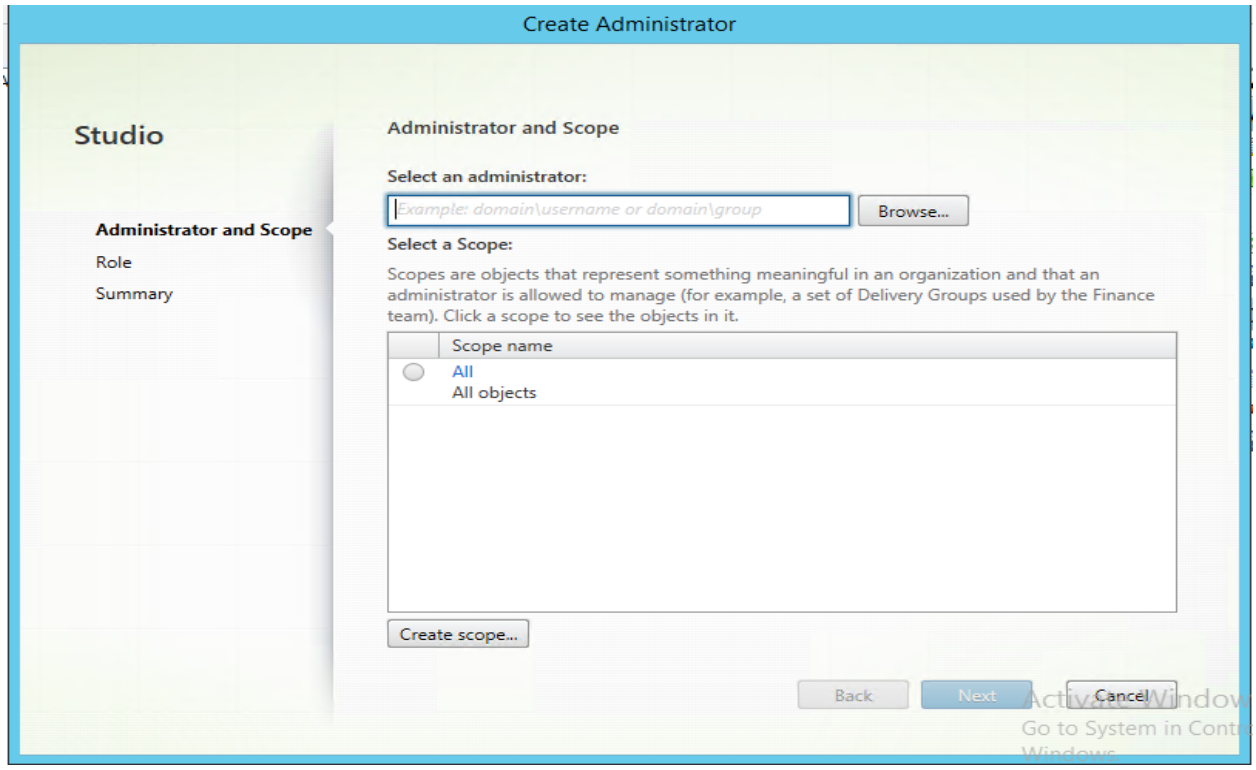


Figure 8.2: The Create Administrator window

3. In the **Administrator and Scope** page that opens, click on the **Browse** button. This will invoke Figure 8.3, using which you can select the user from the domain. Once you selected the user, click **OK** button in Figure 8.3.

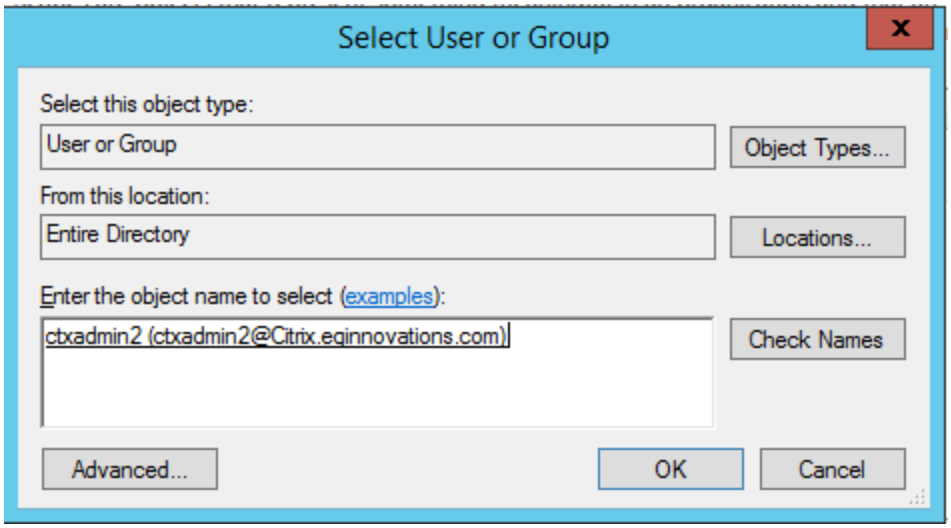


Figure 8.3: Selecting the user from the domain

4. This will lead you to the **Administrator and Scope** page as shown in Figure 8.4, where the chosen user

will be displayed. Now, select **All** as the scope for the chosen user, and then click **Next** button in Figure 8.4 to proceed.

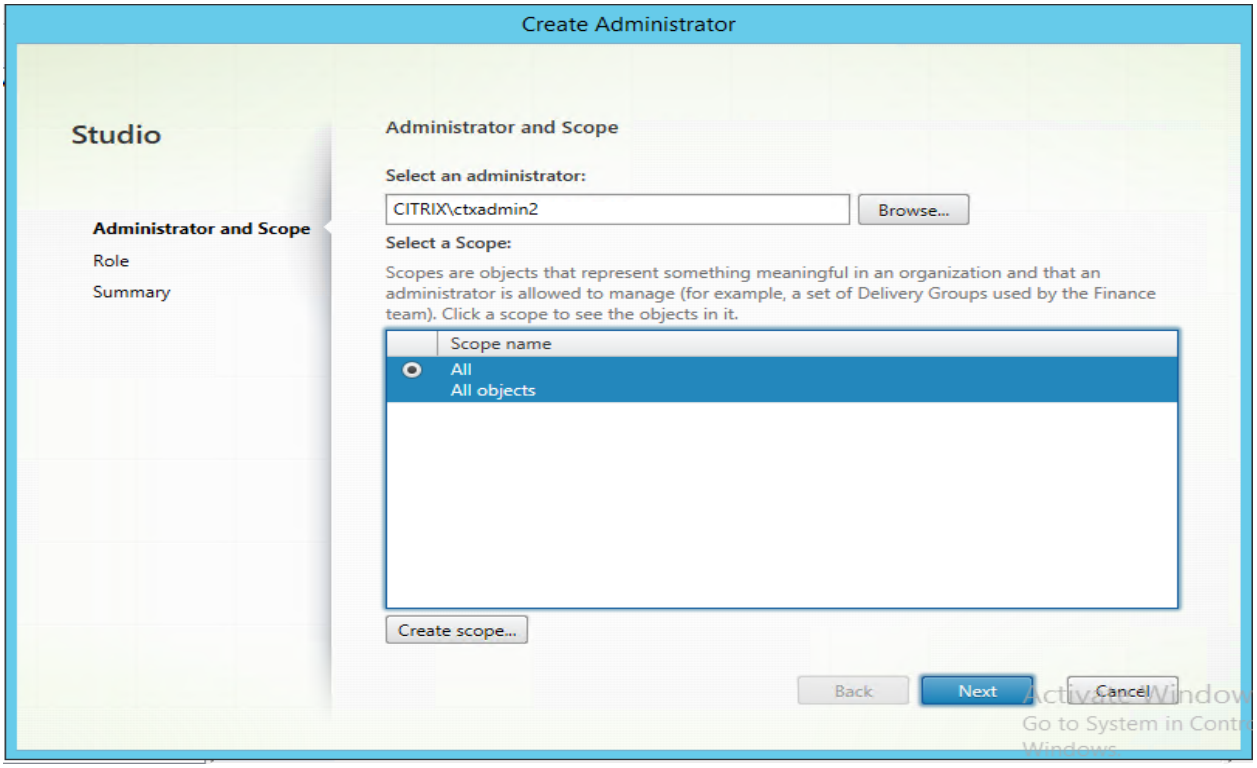


Figure 8.4: Selecting the scope for the chosen user

5. Then, the **Role** page of the **Create Administrator** window appears (see Figure 8.5). In this page, select the **Read Only Administrator** role for the chosen user.

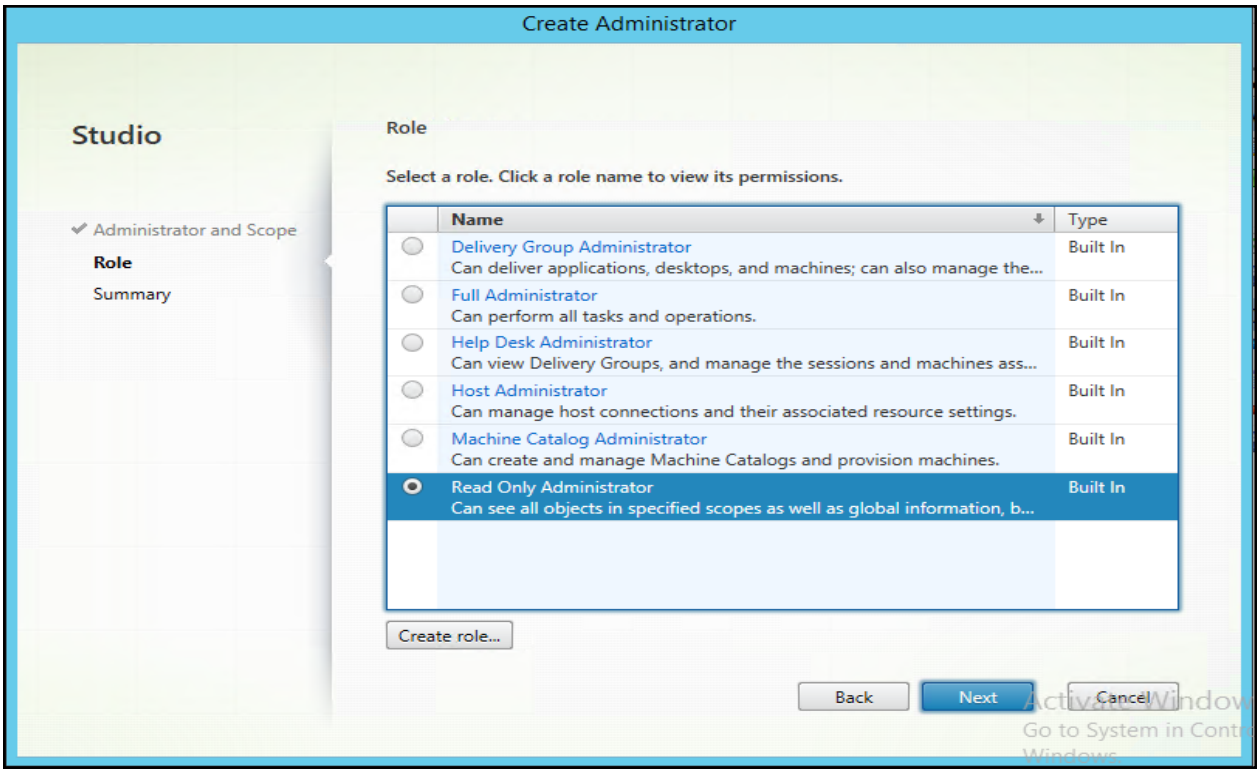


Figure 8.5: Selecting the role for the chosen user

6. Upon clicking the **Next** button in the **Role** page, the **Summary** page will appear, as shown in Figure 8.6. This will display the summary of your settings for the chosen user.

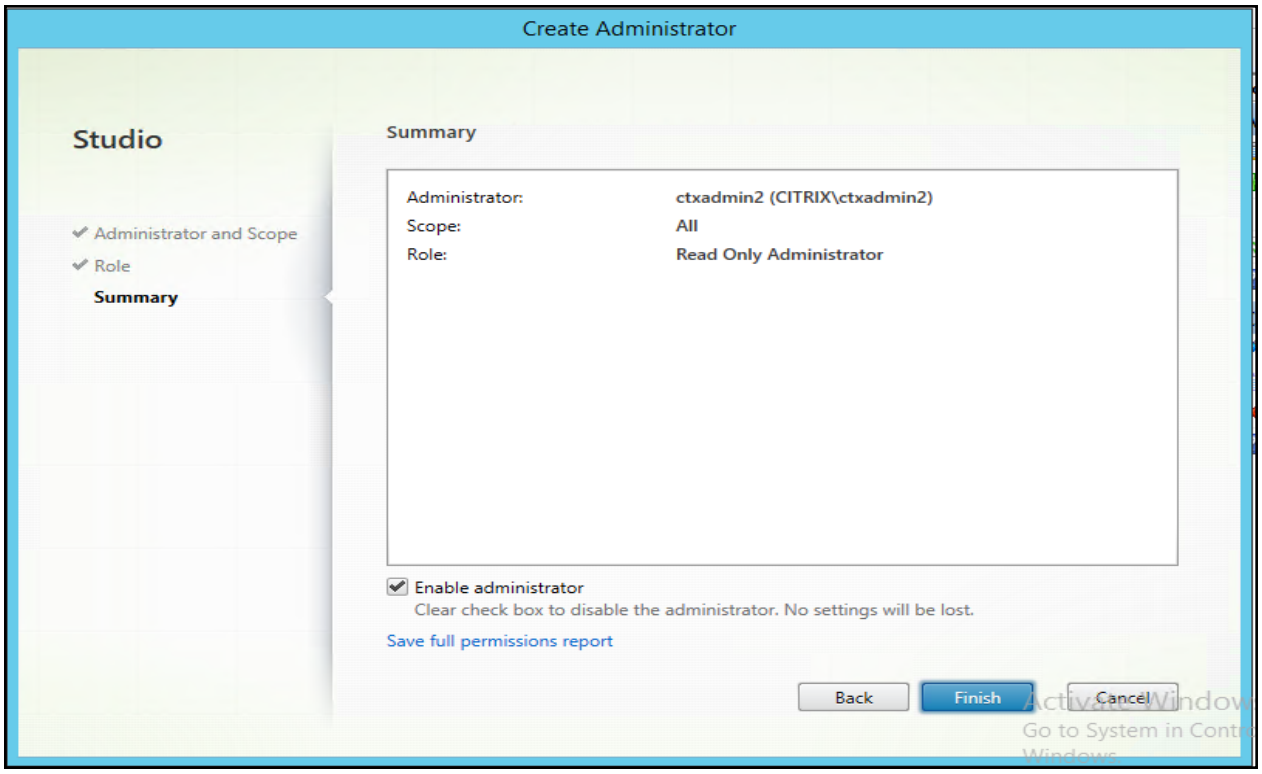


Figure 8.6: The Summary page

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 8.7).

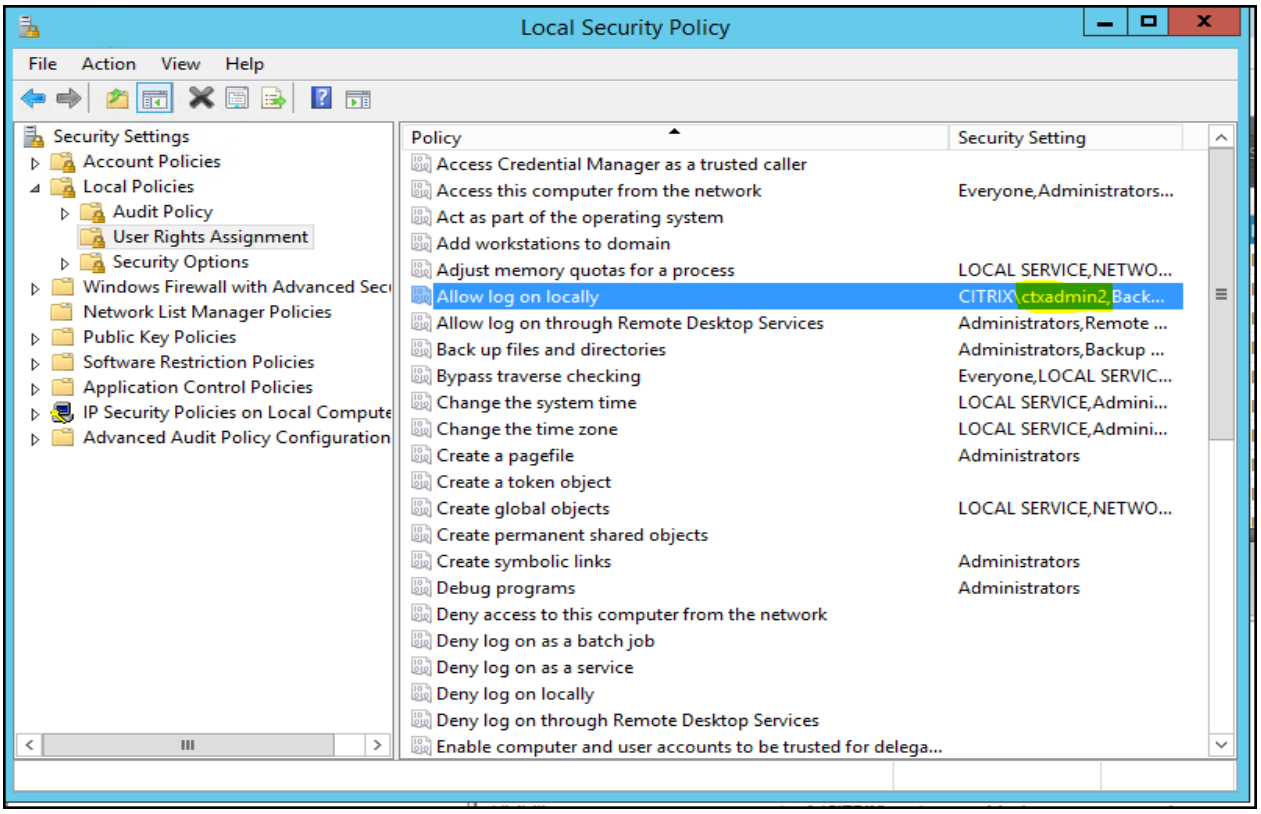


Figure 8.7: Setting the Allow log on locally policy to the user

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

9

Administering eG Manager to Monitor Citrix Delivery Controller 7.x

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 9.1) that appears when the Infrastructure -> Components -> Add/Modify menu sequence is followed. Remember that components manually added are managed automatically.

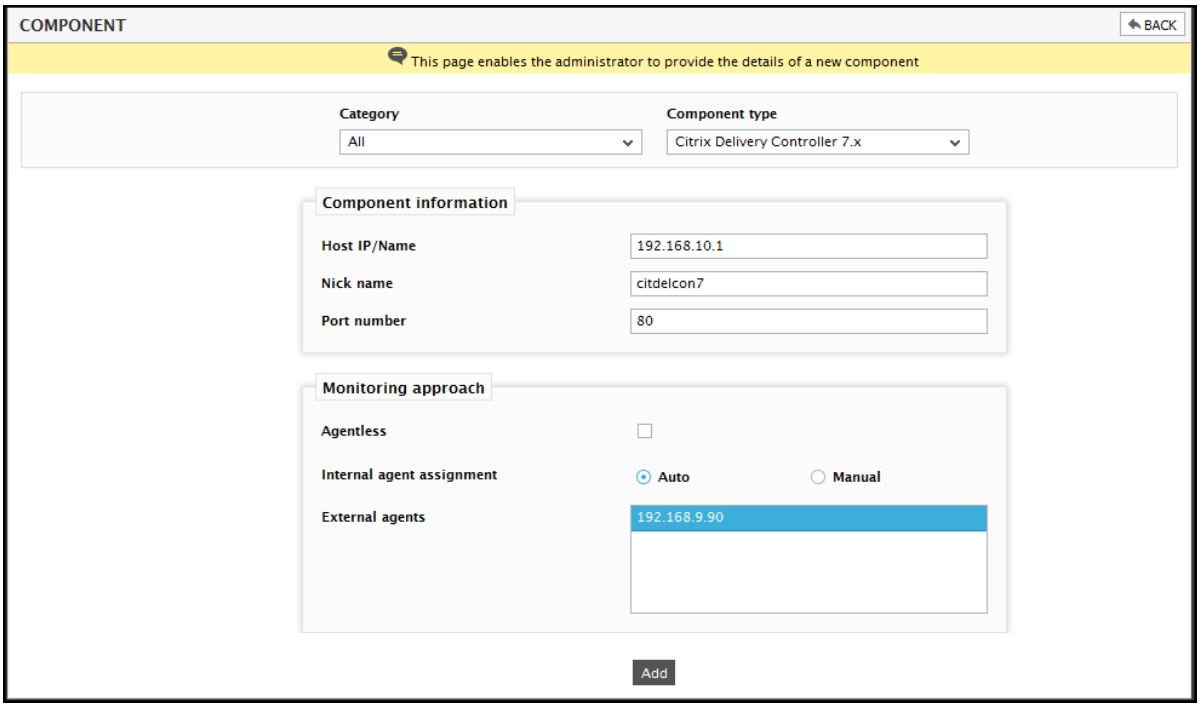
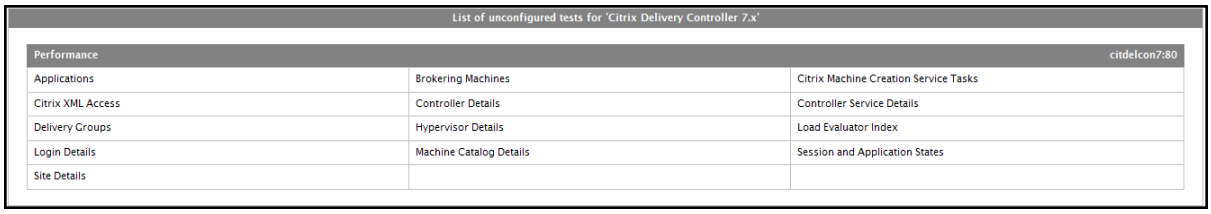


Figure 9.1: Adding a Citrix Delivery Controller 7.x

3. Specify the **Host IP** and the **Nick name** of the Citrix Delivery Controller 7.x server in Figure 9.1. Then click the **Add** button to register the changes.
4. When you attempt to sign out, a list of unconfigured tests appears (see Figure 9.2).


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 9.2: 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 **10.4.3**.
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 **10.3.8**.
7. Finally, signout of the eG administrative interface.

10

Monitoring Citrix Delivery Controller 7.x

Delivery Controller 7 is the latest release from Citrix Delivery Controller 7 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.

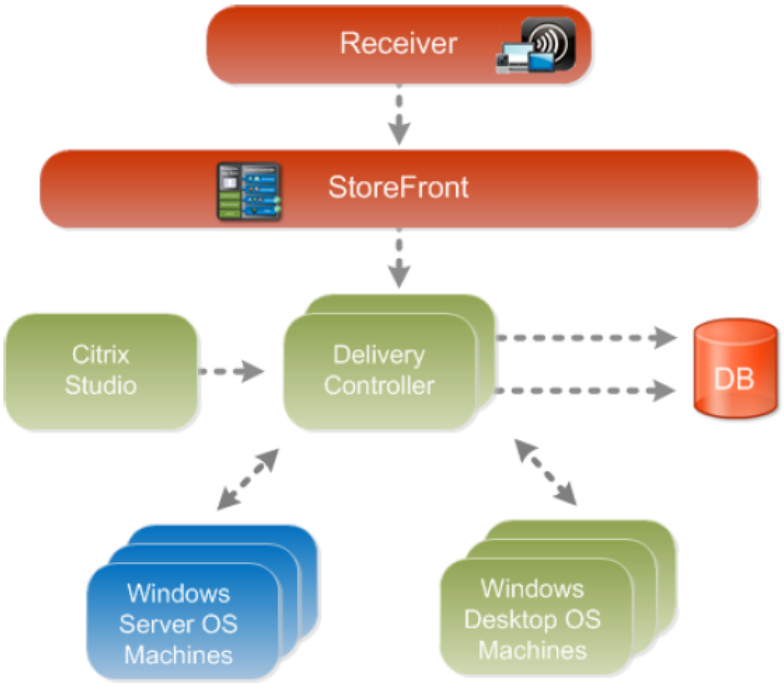


Figure 10.1: The Delivery Controller 7 architecture

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.

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 10.2 depicts the architecture of the Delivery Controller 7.

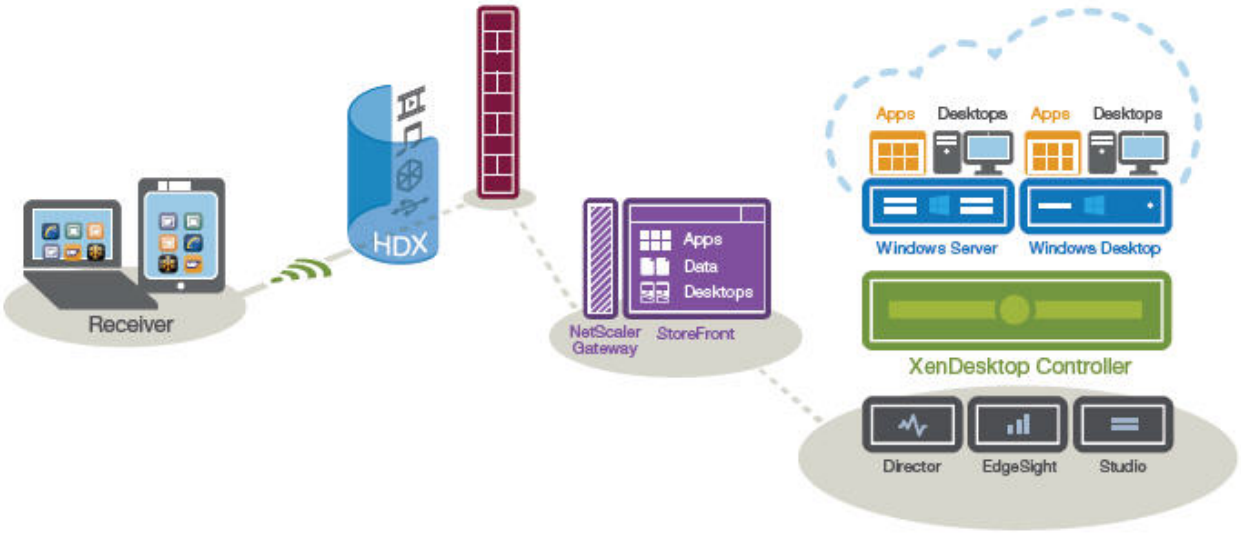


Figure 10.2: The Delivery Controller 7 architecture

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

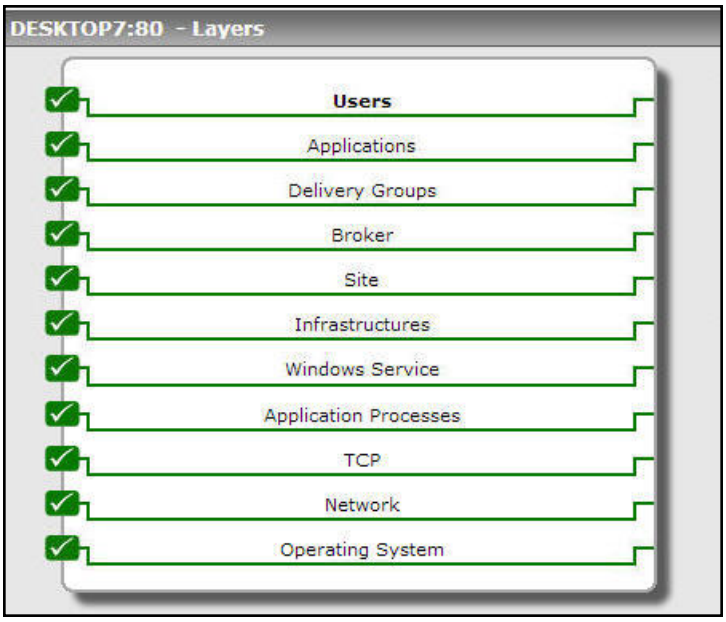


Figure 10.3: Layer model of the Delivery Controller 7 server

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 brokerer? 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 group, or is any group over-utilized?
- Have any machines disconnected from their groups? Which 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 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 10.3.

10.1 The Infrastructures Layer

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

Figure 10.4: The tests mapped to the Infrastructures layer

10.1.1 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 complaint 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 Delivery Controller 7

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

1. **TEST PERIOD** - How often should the test be executed
2. **HOST** - The host for which the test is to be configured.
3. **PORT**– The port number at which the specified **HOST** listens to. By default, this is 80.
4. **USERNAME** - In order to monitor the target Delivery Controller 7, eG requires a special user with the following privileges;
   - The *All* scope and *read-only* privileges
   - The *Allow log on locally* security privilege on the Delivery Controller host

   The steps for assigning such privileges to a user are discussed in the **Pre-requisites for monitoring the Citrix Delivery Controller 7.x** chapter. Specify the name of such a user, here.
5. **PASSWORD** – Specify the password for the user specified in the **USERNAME** text box, here.
6. **CONFIRM PASSWORD –** Confirm the **PASSWORD** by retyping it here.
7. **DOMAIN** – Here, specify the domain to which the user specified in the **USERNAME** text box belongs to.

8. **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:

   - 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.		This test reports one of the following values to indicate the status of the connection between the broker and a hosting server: • On • InMaintenanceMode • Unavailable The numeric values that correspond to the above-mentioned states are as follows:

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)

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>
<table>
<tr><th>State</th><th>Numeri-c Value</th><th>Descrip-tion</th></tr>
<tr><td></td><td></td><td>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>
</table>
Note:
By default, this measure reports the above-mentioned State s 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.
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.
</td></tr>
<tr><td>Is Broker's connection to hypervisor in maintenance mode?:</td><td>Indicates whether the connection between the broker and the hosting server is in maintenance mode.</td><td></td><td>This measure reports a value Yes if the connection between the broker and the hosting server is in maintenance mode and No if otherwise.
The numeric values corresponding to the above- mentioned measure values are as follows:</td></tr>
</table>

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>
<table>
<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>
Note:
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.
</td></tr>
<tr><td>Is Broker's connection to hypervisor in persistent?:</td><td>Indicates whether/not the connection is persistent between the broker and the hosting server.</td><td></td><td>This measure reports a value Yes if the connection between the broker and the hosting server is persistent and No if otherwise.
The numeric values corresponding to the above- mentioned measure values are as follows:
<table>
<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>
Note:
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.
</td></tr>
<tr><td>Is local storage caching enabled?:</td><td>Indicates whether the local storage caching is enabled or not.</td><td></td><td>This measure reports a value Yes if the local storage caching capability is enabled and No if otherwise.
The numeric values corresponding to the above- mentioned measure values are as</td></tr>
</table>

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>follows:
<table><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>
Note:
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.</td></tr>
<tr><td>Is machine creation service used to create VMs?:</td><td>Indicates whether/not the machine creation service is used to create provisioned machines or not.</td><td></td><td>This measure reports a value Yes if the machine creation service is used to create provisioned machines and No if otherwise.
The numeric values corresponding to the above- mentioned measure values are as follows:
<table><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>
Note:
By default, this measure reports the above-mentioned Measure Values while indicating whether the machine creation 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.</td></tr>
</table>

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.

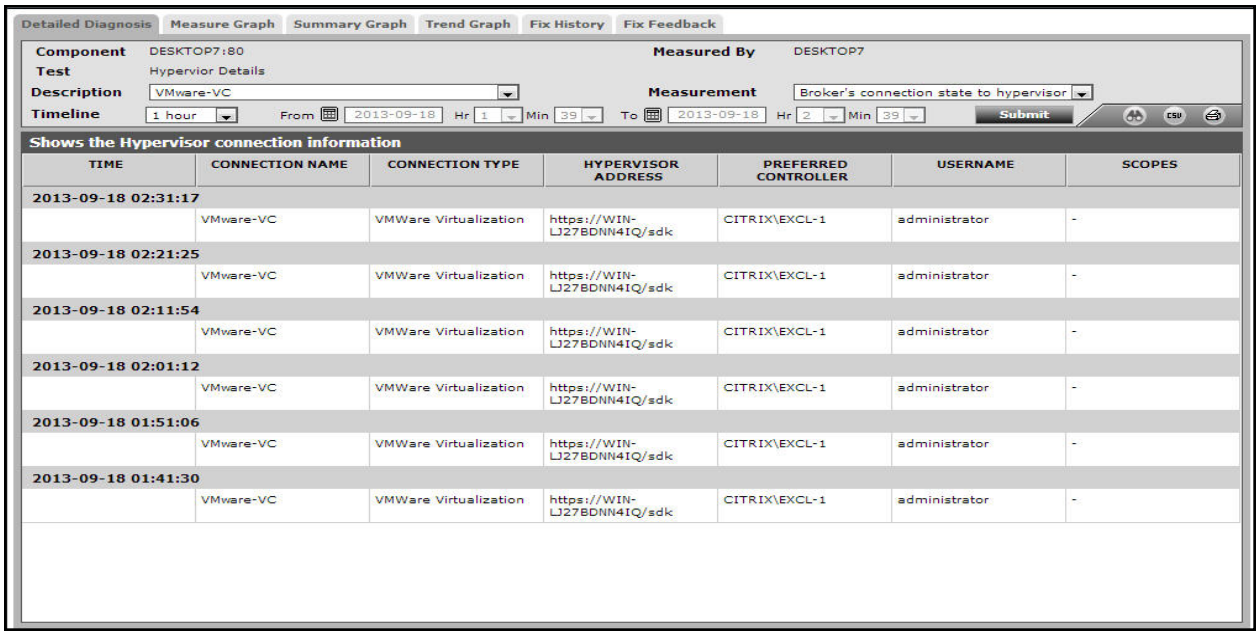


Figure 10.5: The detailed diagnosis of the Broker's connection state to hypervisor measure

10.2 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.

Figure 10.6: The tests mapped to the Site layer

10.2.1 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 Delivery Controller 7

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

1. **TEST PERIOD** - How often should the test be executed
2. **HOST** - The host for which the test is to be configured.
3. **PORT** - The port number at which the specified **HOST** listens to. By default, this is 1745.
4. **USERNAME** - In order to monitor the target Delivery Controller 7, eG requires a special user with the following privileges;
   - The *All* scope and *read-only* privileges
   - The *Allow log on locally* security privilege on the Delivery Controller host

   The steps for assigning such privileges to a user are discussed in the **Pre-requisites for monitoring the Citrix Delivery Controller 7.x** chapter. Specify the name of such a user, here.
5. **PASSWORD -** Specify the password for the user specified in the **USERNAME** text box, here.
6. **CONFIRM PASSWORD** - Confirm the**PASSWORD** by retyping it here.
7. **DOMAIN** - Here, specify the domain to which the user specified in the **USERNAME** text box belongs to.
8. **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:

   - 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	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. 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. 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.
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:

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>
<table>
<tr><th>Measure value</th><th>Numeric Value</th></tr>
<tr><td>No</td><td>0</td></tr>
<tr><td>Yes</td><td>1</td></tr>
</table>
Note:
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.
</td></tr>
<tr><td>Is secure ICA required?:</td><td>Indicates whether/not a secure ICA is required for this site.</td><td></td><td>By default, client-server communications are obfuscated at a basic level through the SecureICA feature, which can be used to encrypt the ICA protocol.

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.

You can increase the level of encryption for the ICA protocol when you publish a resource or after you publish a resource.

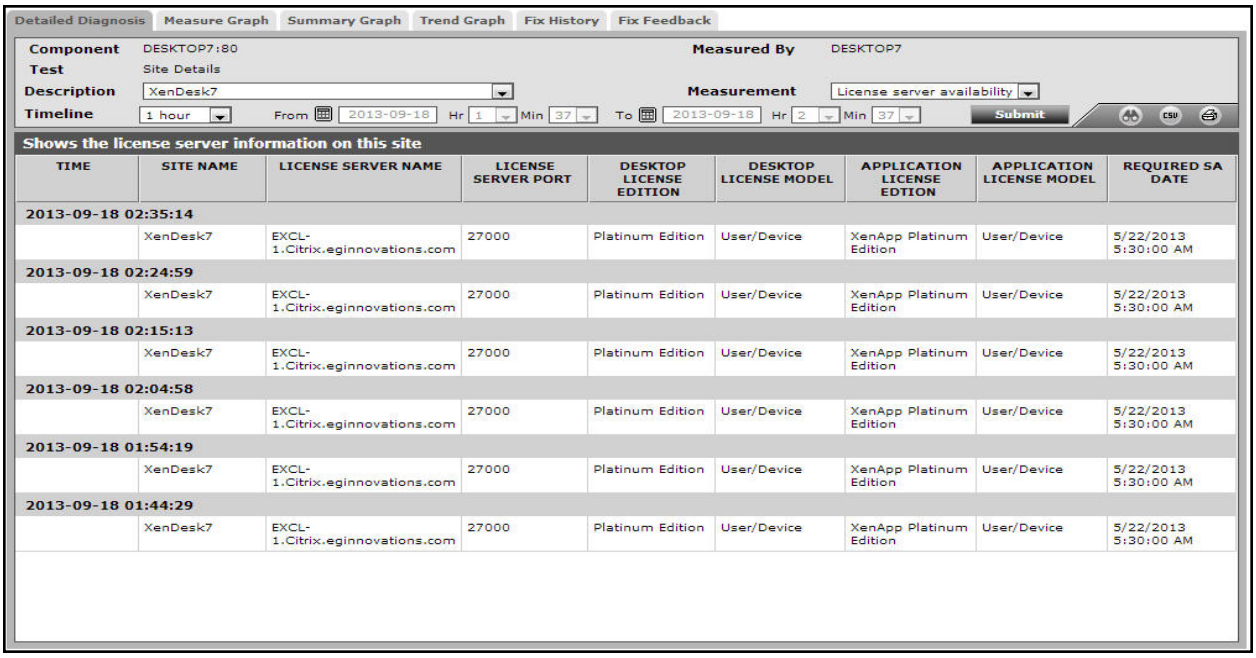
In addition to situations when you want to protect against internal security threats, such as eavesdropping, you may want to use ICA encryption in the following situations:

• You need to secure communications from devices that use Microsoft DOS or run on Win16 systems
• You have older devices running</td></tr>
</table>

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>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
The values that this measure can report and their corresponding numeric values are:<table><tr><th>Measure value</th><th>Numeric Value</th></tr><tr><td>No</td><td>0</td></tr><tr><td>Yes</td><td>1</td></tr></table>Note:
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.</td></tr>
<tr><td>Are trust requests sent to the XML service port?</td><td>Indicates whether/not trust requests were sent to the XML service.</td><td></td><td>Trusting requests sent to the XML Service means:
• 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.
• 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.</td></tr>
</table>

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>
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.
The values that this measure can report and their corresponding numeric values are:
<table>
<tr><th>Measure value</th><th>Numeric Value</th></tr>
<tr><td>No</td><td>0</td></tr>
<tr><td>Yes</td><td>1</td></tr>
</table>
Note:
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 numeric equivalents of 0 and 1 only.
</td></tr>
<tr><td>Total brokers for this site:</td><td>Indicates the total number of brokers that are configured for this site.</td><td>Number</td><td></td></tr>
</table>

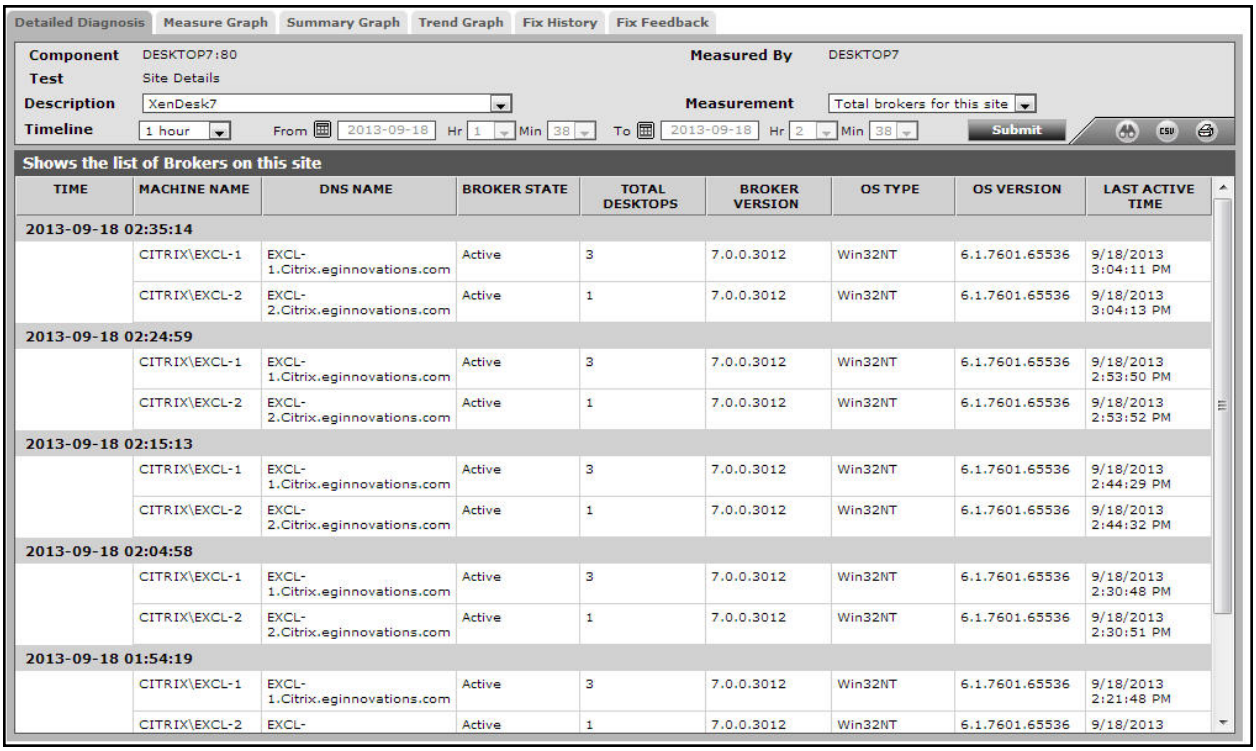
The detailed diagnosis of the **License server availability** measure displays the name of the License server in the site and the port at which it listens. Alongside, the detailed diagnosis displays the desktop model, desktop edition, application model and application edition that is compatible with 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.



TIME	SITE NAME	LICENSE SERVER NAME	LICENSE SERVER PORT	DESKTOP LICENSE EDITION	DESKTOP LICENSE MODEL	APPLICATION LICENSE EDTION	APPLICATION LICENSE MODEL	REQUIRED SA DATE
2013-09-18 02:35:14								
	XenDesk7	EXCL-1.Citrix.eginnovations.com	27000	Platinum Edition	User/Device	XenApp Platinum Edition	User/Device	5/22/2013 5:30:00 AM
2013-09-18 02:24:59								
	XenDesk7	EXCL-1.Citrix.eginnovations.com	27000	Platinum Edition	User/Device	XenApp Platinum Edition	User/Device	5/22/2013 5:30:00 AM
2013-09-18 02:15:13								
	XenDesk7	EXCL-1.Citrix.eginnovations.com	27000	Platinum Edition	User/Device	XenApp Platinum Edition	User/Device	5/22/2013 5:30:00 AM
2013-09-18 02:04:58								
	XenDesk7	EXCL-1.Citrix.eginnovations.com	27000	Platinum Edition	User/Device	XenApp Platinum Edition	User/Device	5/22/2013 5:30:00 AM
2013-09-18 01:54:19								
	XenDesk7	EXCL-1.Citrix.eginnovations.com	27000	Platinum Edition	User/Device	XenApp Platinum Edition	User/Device	5/22/2013 5:30:00 AM
2013-09-18 01:44:29								
	XenDesk7	EXCL-1.Citrix.eginnovations.com	27000	Platinum Edition	User/Device	XenApp Platinum Edition	User/Device	5/22/2013 5:30:00 AM

Figure 10.7: The detailed diagnosis of the License server availability measure

The detailed diagnosis of the Total brokers for this site measure displays the names of the brokers of this site, the machine on which the broker is installed, total number of desktops managed by this broker, the state of the broker, the version of the broker, the type of operating system, the version of the operating system, the last time at which the broker was active. This information helps you to identify the brokers that are active and are utilized effectively.



TIME	MACHINE NAME	DNS NAME	BROKER STATE	TOTAL DESKTOPS	BROKER VERSION	OS TYPE	OS VERSION	LAST ACTIVE TIME
2013-09-18 02:35:14								
	CITRIX\EXCL-1	EXCL-1.Citrix.eginnovations.com	Active	3	7.0.0.3012	Win32NT	6.1.7601.65536	9/18/2013 3:04:11 PM
	CITRIX\EXCL-2	EXCL-2.Citrix.eginnovations.com	Active	1	7.0.0.3012	Win32NT	6.1.7601.65536	9/18/2013 3:04:13 PM
2013-09-18 02:24:59								
	CITRIX\EXCL-1	EXCL-1.Citrix.eginnovations.com	Active	3	7.0.0.3012	Win32NT	6.1.7601.65536	9/18/2013 2:53:50 PM
	CITRIX\EXCL-2	EXCL-2.Citrix.eginnovations.com	Active	1	7.0.0.3012	Win32NT	6.1.7601.65536	9/18/2013 2:53:52 PM
2013-09-18 02:15:13								
	CITRIX\EXCL-1	EXCL-1.Citrix.eginnovations.com	Active	3	7.0.0.3012	Win32NT	6.1.7601.65536	9/18/2013 2:44:29 PM
	CITRIX\EXCL-2	EXCL-2.Citrix.eginnovations.com	Active	1	7.0.0.3012	Win32NT	6.1.7601.65536	9/18/2013 2:44:32 PM
2013-09-18 02:04:58								
	CITRIX\EXCL-1	EXCL-1.Citrix.eginnovations.com	Active	3	7.0.0.3012	Win32NT	6.1.7601.65536	9/18/2013 2:30:48 PM
	CITRIX\EXCL-2	EXCL-2.Citrix.eginnovations.com	Active	1	7.0.0.3012	Win32NT	6.1.7601.65536	9/18/2013 2:30:51 PM
2013-09-18 01:54:19								
	CITRIX\EXCL-1	EXCL-1.Citrix.eginnovations.com	Active	3	7.0.0.3012	Win32NT	6.1.7601.65536	9/18/2013 2:21:48 PM
	CITRIX\EXCL-2	EXCL-	Active	1	7.0.0.3012	Win32NT	6.1.7601.65536	9/18/2013

Figure 10.8: The detailed diagnosis of the Total brokers for this site measure

10.3 The Broker 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 Delivery Controller* document, let us now proceed to discuss those tests that haven't been dealt before.

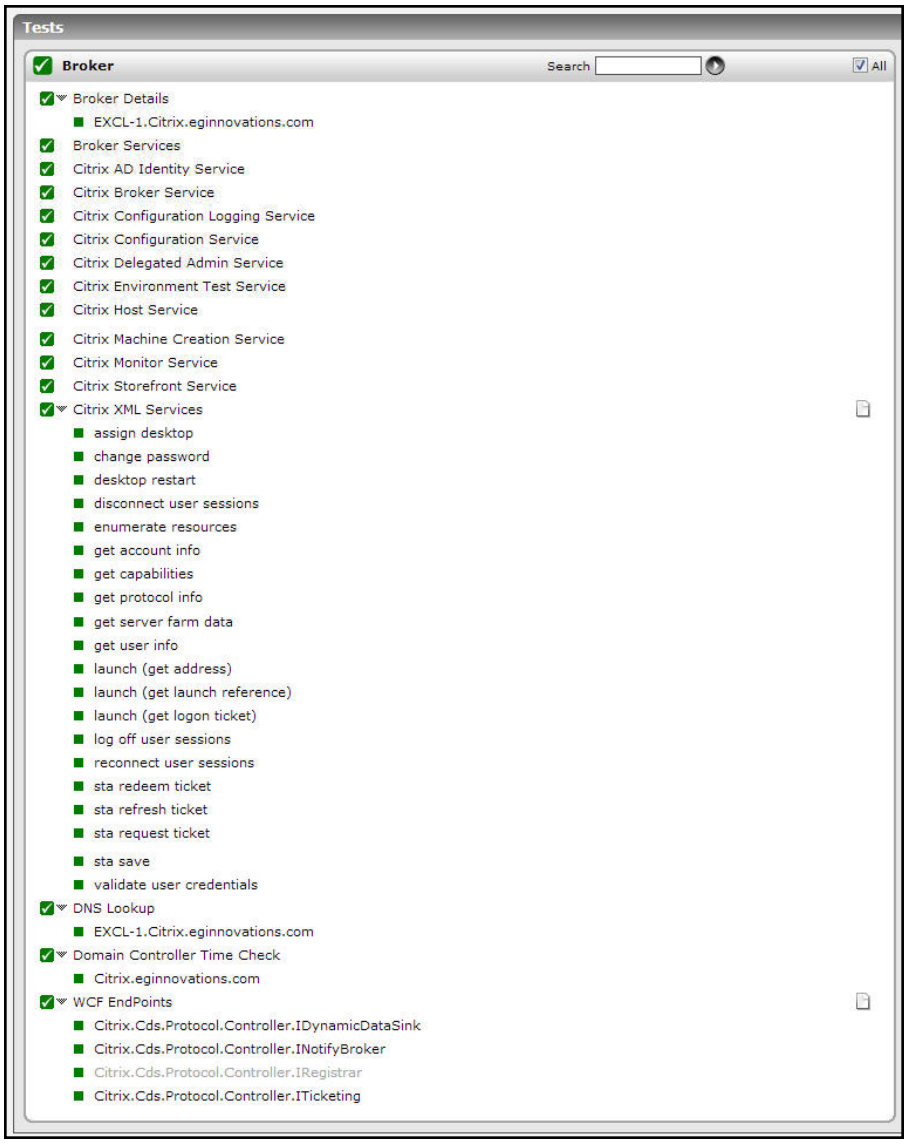


Figure 10.9: The tests mapped to the Broker layer

10.3.1 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.

Target of the test : A Delivery Controller 7

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

1. **TEST PERIOD** - How often should the test be executed
2. **HOST** – The host for which the test is to be configured.
3. **PORT** – The port number at which the specified **HOST** listens to. By default, this is 80.
4. **USERNAME** - In order to monitor the target Delivery Controller 7, eG requires a special user with the following privileges;
   - The *All* scope and *read-only* privileges
   - The *Allow log on locally* security privilege on the Delivery Controller host

   The steps for assigning such privileges to a user are discussed in the **Pre-requisites for monitoring the Citrix Delivery Controller 7.x** chapter. Specify the name of such a user, here.
5. **PASSWORD –** Specify the password for the user specified in the **USERNAME** text box, here.
6. **CONFIRM PASSWORD** – Confirm the **PASSWORD** by retyping it here.
7. **DOMAIN** – Here, specify the domain to which the user specified in the **USERNAME** text box belongs to.
8. **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:
   - 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 state:	Indicates the current state of this desktop delivery controller (broker).	Number	This test reports one of the following values to indicate the current state of a destop delivery controller: • **Active** – Indicates that the broker is powered- on and fully operational • **On** – Indicates that the broker is powered- on, but not fully

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>operational
• Failed – Indicates that the broker has failed due to some reason
• Off – Indicates that the broker is powered-off
The numeric values that correspond to the above- mentioned states are as follows:<table><tr><th>State</th><th>Numeric Value</th></tr><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></table>Note:
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.
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.</td></tr>
<tr><td>Total registered machines:</td><td>Indicates the number of machines that are currently registered with this broker.</td><td>Number</td><td></td></tr>
</table>

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 broker is installed, the version of the broker, the Operating system of the machine and the Operating system version.

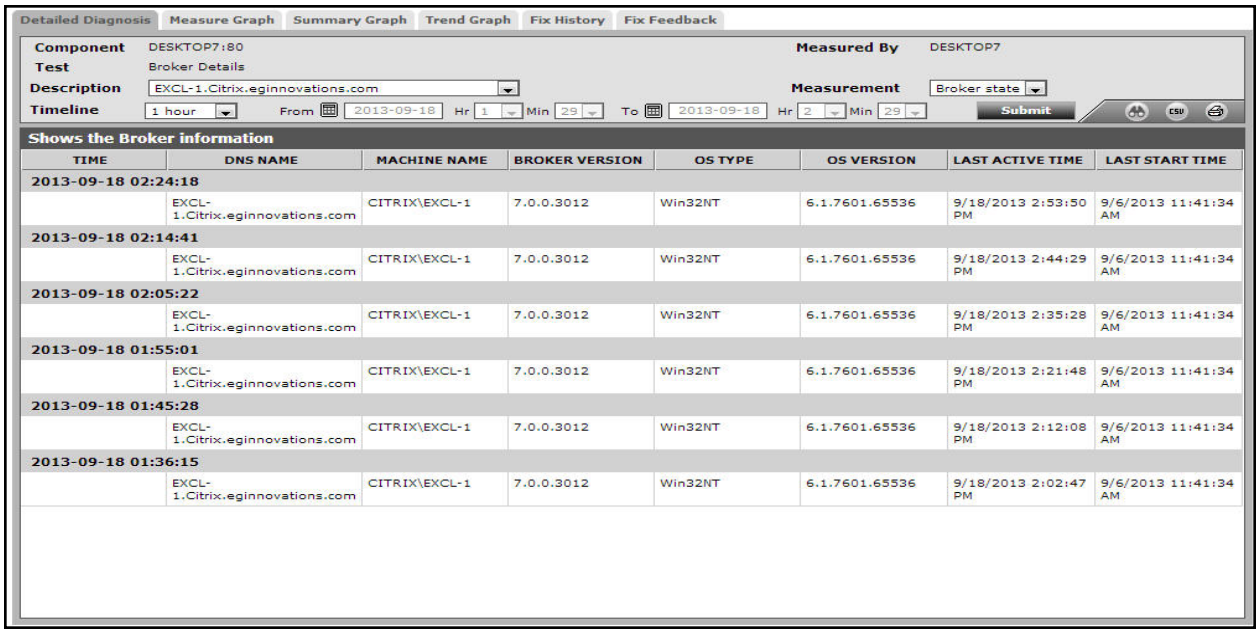


Figure 10.10: The detailed diagnosis of the Broker state measure

10.3.2 Controller Services 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 Delivery Controller 7

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

1. **TEST PERIOD** - How often should the test be executed
2. **HOST** – The host for which the test is to be configured.
3. **PORT** – The port number at which the specified **HOST** listens to. By default, this is 80.
4. **USERNAME** - In order to monitor the target Delivery Controller 7, eG requires a special user with the following privileges;
   - The *All* scope and *read-only* privileges
   - The *Allow log on locally* security privilege on the Delivery Controller host

   The steps for assigning such privileges to a user are discussed in the **Pre-requisites for monitoring the Citrix Delivery Controller 7.x** chapter. Specify the name of such a user, here.
5. **PASSWORD –** Specify the password for the user specified in the **USERNAME** text box, here.
6. **CONFIRM PASSWORD** – Confirm the **PASSWORD** by retyping it here.

7. **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.		The Citrix Broker Service brokers connections from endpoint devices to desktops and applications. The numeric values that correspond to the Measure Values that this measure can take are as follows: **Measure Value** / **Numeric Value** OK – 1 DBUnconfigured – 2 DBRejectedConnection – 3 InvalidDBConfigured – 4 Electroencephalographic – 5 DBOlderVersionThanService – 6 DBVersionChangeInProgress – 7 PendingFailure – 8 Failed – 9 Unknown – 10 DBNotFound – 11 DBMissingOptionalFeature – 12 DBMissingMandatoryFeature – 13 **Note:** By default, this measure reports the above-mentioned **Measure Value**s 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

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>to 13.</td></tr>
<tr><td>AD identity service status:</td><td>Indicates the current status of the AD Identity Service on this broker.</td><td></td><td>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.

The values that this measure reports and the numeric values that correspond to them are as follows:

<table><tr><th>Measure Value</th><th>Numeri-c Value</th></tr><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></table>
Note:

By default, this measure reports the above-mentioned Measure Values while 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.</td></tr>
<tr><td>Configuration service status:</td><td>Indicates the current status of the</td><td></td><td>The Citrix Configuration Service stores the configuration information related to Citrix</td></tr>
</table>

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td>Configuration Service on this broker.</td><td></td><td>services in the broker's MS SQL database.

The values that this measure can report and their corresponding numeric values are as follows:

<table><tr><th>Measure Value</th><th>Numeric Value</th></tr><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></table>
Note:

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.</td></tr>
<tr><td>Host service status:</td><td>Indicates the current status of the Host service on this broker.</td><td></td><td>The Citrix Host Service manages host and hypervisor connections.

The values that this measure can take and their corresponding numeric values are as follows:

<table><tr><th>Measure Value</th><th>Numeric Value</th></tr><tr><td>OK</td><td>1</td></tr></table></td></tr>
</table>

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>
<table>
<tr><th>Measure Value</th><th>Numeri-c Value</th></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>
</table>
Note:
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.
</td></tr>
<tr><td>Machine creation service status:</td><td>Indicates the current status of the Machine Creation Service on this broker.</td><td></td><td>The Citrix Machine Creation Service creates new virtual machines.
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 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.
The values that this measure can take and their corresponding numeric equivalents are as follows:</td></tr>
</table>

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>
<table>
<tr><th>Measure Value</th><th>Numeric Value</th></tr>
<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>
</table>
Note:
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.
</td></tr>
<tr><td>Admin service status:</td><td>Indicates the current status of the Delegated Administration service on this broker.</td><td></td><td>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.
The values that this measure can report and their corresponding numeric equivalents are as follows:
<table>
<tr><th>Measure Value</th><th>Numeric Value</th></tr>
<tr><td>OK</td><td>1</td></tr>
<tr><td>DBUnconfigured</td><td>2</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>
<table>
<tr><th>Measure Value</th><th>Numeri-c Value</th></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>
</table>
Note:
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.
</td></tr>
<tr><td>Licensing service status:</td><td>Indicates the current status of the Licensing service on this broker.</td><td></td><td>
The values that this measure can take and their corresponding numeric values are as follows:
<table>
<tr><th>Measure Value</th><th>Numeric Value</th></tr>
<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>
</table>
Note:
</td></tr>
</table>

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>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.</td></tr>
<tr><td>Monitoring service status:</td><td>Indicates the current status of the Monitroing service on this broker.</td><td></td><td>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.

The values that this measure can take and their corresponding numeric values are as follows:

<table>
<tr><th>Measure Value</th><th>Numeric Value</th></tr>
<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>
</table>

Note:

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</td></tr>
</table>

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>same will be represented using the corresponding numeric equivalents – i.e., 1 to 10.</td></tr>
<tr><td>Logging service status:</td><td>Indicates the current status of the Logging service on this broker.</td><td></td><td>The Configuration Logging Service logs configuration changes or administrator requested state changes made to the site.

The values that this measure can take and their corresponding numeric values are as follows:

<table>
<tr><th>Measure Value</th><th>Numeri-c Value</th></tr>
<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>
</table>

Note:

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.</td></tr>
</table>

10.3.3 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 Delivery Controller 7

Agent deploying the test : An internal agent

Outputs of the test : One set of results for the Delivery Controller 7 server being monitored

Configurable parameters for the test

1. **TEST PERIOD** - How often should the test be executed
2. **HOST** - The host for which the test is to be configured.
3. **PORT** - The port number at which the specified **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.

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td>Is database connected?:</td><td>Indicates whether the database is connected or not i.e.,whether this service is in contact with the database.</td><td></td><td>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:
<table><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>Note:
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.
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.</td></tr>
<tr><td>Database transaction errors:</td><td>Indicates the rate at which the database transactions are failing while the Citrix Configuration Logging Service is executing the transactions.</td><td>Errors/Sec</td><td>A low value is desired for this measure.</td></tr>
<tr><td>Database transactions:</td><td>Indicates the rate at which the database transactions are executed by the Citrix Configuration Logging Service.</td><td>Trans/Sec</td><td></td></tr>
</table>

10.3.4 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 Delivery Controller 7

Agent deploying the test : An internal agent

Outputs of the test : One set of results for the Citrix XenDesktop 7 server being monitored

Configurable parameters for the test

1. **TEST PERIOD** - How often should the test be executed
2. **HOST** – The host for which the test is to be configured.
3. **PORT** – The port number at which the specified **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:

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>
<table>
<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>
Note:

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.

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.
</td></tr>
<tr><td>Database transaction errors:</td><td>Indicates the rate at which the database transactions are failing while the Citrix Delegated Administration Service is executing the transactions.</td><td>Errors/Sec</td><td>A low value is desired for this measure.</td></tr>
<tr><td>Database transactions:</td><td>Indicates the rate at which the database transactions are executed by the Citrix Delegated Administration Service.</td><td>Trans/Sec</td><td></td></tr>
</table>

10.3.5 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 Delivery Controller 7

Agent deploying the test : An internal agent

Outputs of the test : One set of results for the Delivery Controller 7 server being monitored

Configurable parameters for the test

1. **TEST PERIOD** - How often should the test be executed
2. **HOST** – The host for which the test is to be configured.
3. **PORT** – The port number at which the specified **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.		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: **Measure Value** / **Numeric Value** Yes / 1 No / 0 **Note:** By default, this measure reports the above-mentioned **Measure Value**s 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

Measurement	Description	Measurement Unit	Interpretation
			equivalents – 1 and 0 only. 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.
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	

10.3.6 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 Delivery Controller 7

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

1. **TEST PERIOD** - How often should the test be executed
2. **HOST** - The host for which the test is to be configured.
3. **PORT** – The port number at which the specified **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: **Measure Value** / **Numeric Value** Yes / 1 No / 0 **Note:** By default, this measure reports the above-mentioned **Measure Value**s to indicate whether/not the Citrix Monitor service is connected to the database.

Measurement	Description	Measurement Unit	Interpretation
			However, in the graph of this measure, the same will be represented using the numeric equivalents – 1 and 0 only. 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.
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	

10.3.7 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 Delivery Controller 7

Agent deploying the test : An internal agent

Outputs of the test : One set of results for the Delivery Controller 7 being monitored

Configurable parameters for the test

1. **TEST PERIOD** - How often should the test be executed
2. **HOST** - The host for which the test is to be configured.
3. **PORT** – The port number at which the specified **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: **Measure Value** / **Numeric Value** Yes / 1 No / 0 **Note:** By default, this measure reports the above-mentioned **Measure Value**s 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.
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.

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

10.3.8 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 Delivery Controller 7

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

1. **TEST PERIOD** - How often should the test be executed
2. **HOST** – The host for which the test is to be configured.
3. **PORT** – The port number at which the specified **HOST** listens to. By default, this is 80.
4. **USERNAME** - In order to monitor the target Delivery Controller 7, eG requires a special user with the following privileges;
    - The *All* scope and *read-only* privileges

- The *Allow log on locally* security privilege on the Delivery Controller host

The steps for assigning such privileges to a user are discussed in the **Pre-requisites for monitoring the Citrix Delivery Controller 7.x** chapter. Specify the name of such a user, here.

5. **PASSWORD –** Specify the password for the user specified in the **USERNAME** text box, here.
6. **CONFIRM PASSWORD** – Confirm the **PASSWORD** by retyping it here.
7. **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**.
8. **DOMAIN** – Here, specify the domain to which the user specified in the **USERNAME** text box belongs to.
9. **DOMAINTYPE** - A Citrix web interface can be set up to authenticate users by connecting to a Windows domain, or a Unix domain, or a Novell domain. The **DOMAINTYPE** value represents the type of domain being used to validate the user. The default value is "NT". For Unix, use "UNIX" and for Novell, use "NDS".
10. **XMLPORT** - Specify the port on which the Citrix XML Service is executing.
11. **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.
12. **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.
13. **ENCODING FORMAT** - By default, the **ENCODING FORMAT** is set to UTF-8, for providing code compatibility when the test is excuted in different language platforms.
14. **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.

Measurement	Description	Measurement Unit	Interpretation
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.
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.

10.4 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.

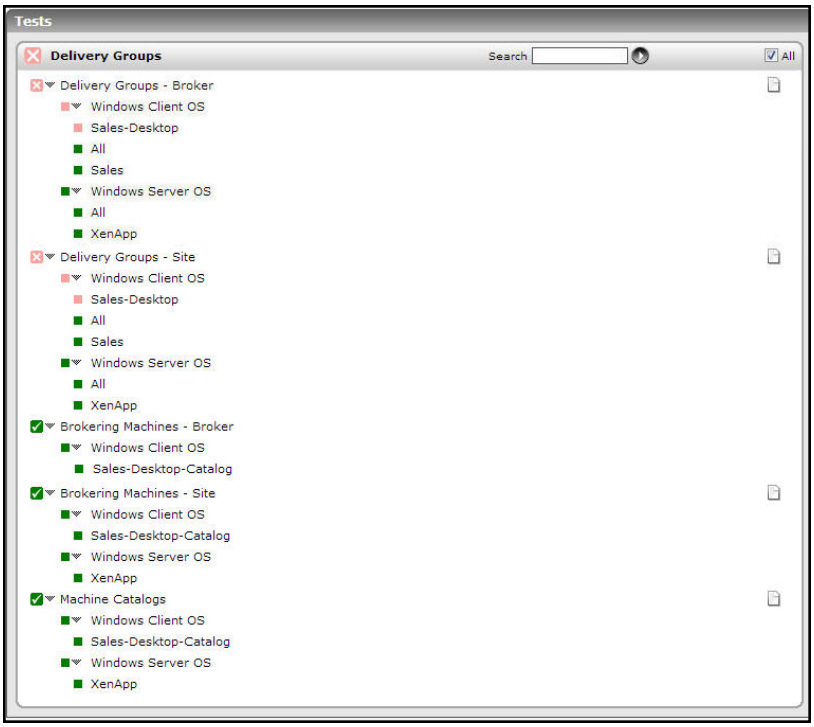


Figure 10.11: The Delivery Groups layer

10.4.1 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 : A Delivery Controller 7

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

1. **TEST PERIOD** - How often should the test be executed
2. **HOST** – The host for which the test is to be configured.
3. **PORT** – The port number at which the specified **HOST** listens to. By default, this is 80.
4. **USERNAME** - In order to monitor the target Delivery Controller 7, eG requires a special user with the following privileges;
    - The *All* scope and *read-only* privileges
    - The *Allow log on locally* security privilege on the Delivery Controller host

The steps for assigning such privileges to a user are discussed in the **Pre-requisites for monitoring the Citrix Delivery Controller 7.x** chapter. Specify the name of such a user, here.

5. **PASSWORD –** Specify the password for the user specified in the **USERNAME** text box, here.
6. **CONFIRM PASSWORD** – Confirm the**PASSWORD** by retyping it here.
7. **DOMAIN** – Here, specify the domain to which the user specified in the **USERNAME** text box belongs to.
8. **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**.
9. **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 the broker.
10. **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.
11. **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.
12. **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:

    - 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

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td>Is delivery group available?:</td><td>Indicates whether this delivery group is available or not.</td><td></td><td>This measure reports the value Yes if a delivery group is available, and reports No if it is not available.

The numeric values that correspond to the above-mentioned measure values are as follows:
<table><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>
Note:

By default, this measure reports the above- mentioned Measure Value s 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.

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 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.</td></tr>
<tr><td>Is delivery group in maintenance mode?:</td><td>Indicates whether this delivery group is in a maintenance mode or not.</td><td></td><td>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.</td></tr>
</table>

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>XenDesktop has no control over delivery groups that are in maintenance mode. No user can log on to a machine in this state.

This measure reports the value Yes if a delivery group is in the maintenance mode, and reports No if it is not. The numeric values that correspond to the above-mentioned Measure Values are as follows:

<table><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>
Note:

By default, this measure reports the above- mentioned Measure Value s 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.</td></tr>
<tr><td>Total machines:</td><td>Indicates the total number of machines in this group.</td><td>Number</td><td></td></tr>
<tr><td>Available machines:</td><td>Indicates the number of machines in this delivery group that are available for a new user to connect to.</td><td>Number</td><td>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.</td></tr>
<tr><td>Used machines:</td><td>Indicates the number of</td><td>Number</td><td>The detailed diagnosis of this measure</td></tr>
</table>

Measurement	Description	Measurement Unit	Interpretation
	machines in this group that are currently used by users.		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.
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 which the machine operates,the hypervisor connection, the name of the

Measurement	Description	Measurement Unit	Interpretation
			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	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	Number	

Measurement	Description	Measurement Unit	Interpretation
	registered properly with the broker although they are configured in this delivery 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.
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	Indicates the number of	Number	A low value is desired for this measure.

Measurement	Description	Measurement Unit	Interpretation
unknown power state:	machines in the following power states: • Unavailable • Unmanaged • Unknown		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 whih 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.
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 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 the last connection attempt failed during the last measurement period.	Number	
Last deregisteration 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

Measurement	Description	Measurement Unit	Interpretation
			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 deregisteration machines:	Indicates the number of machines that were the last to be 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 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	

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.

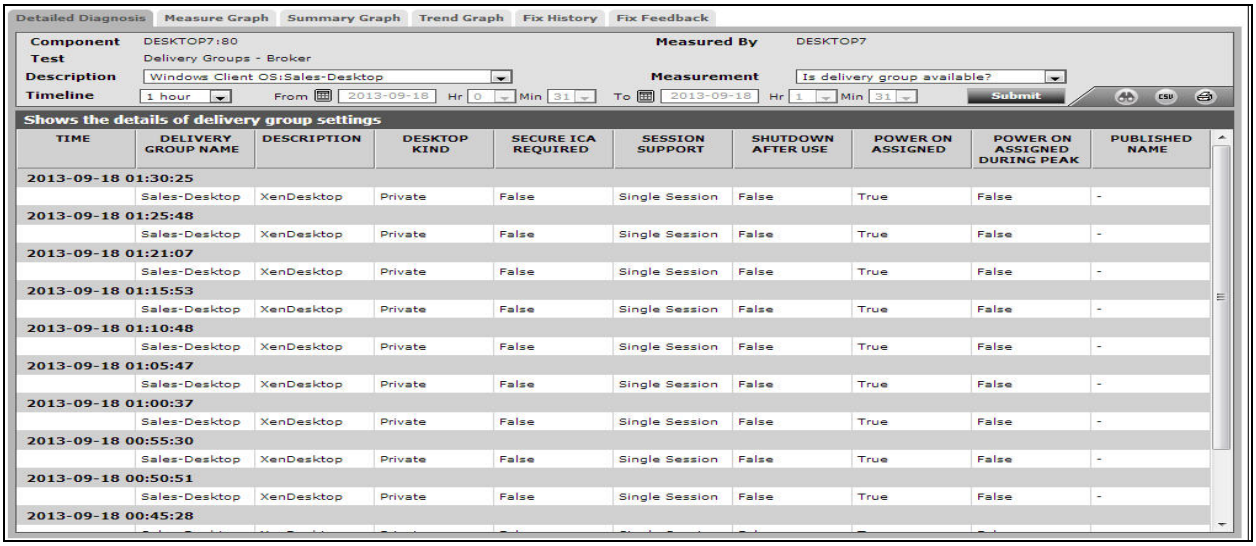


Figure 10.12: The detailed diagnosis of the Is delivery group available? measure

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.

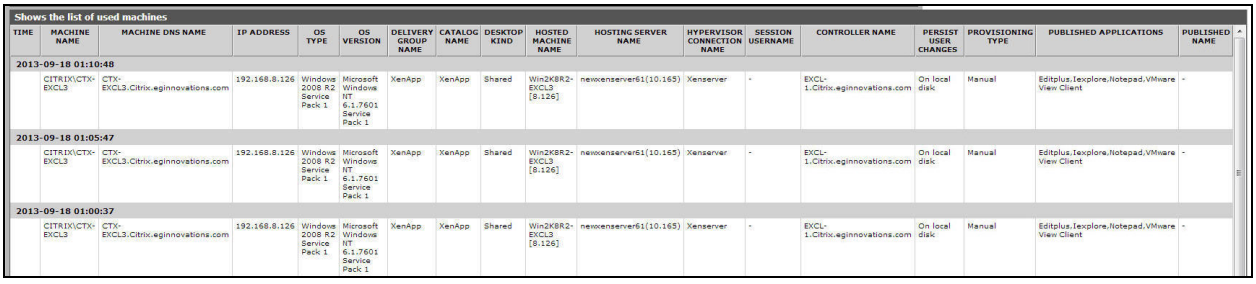
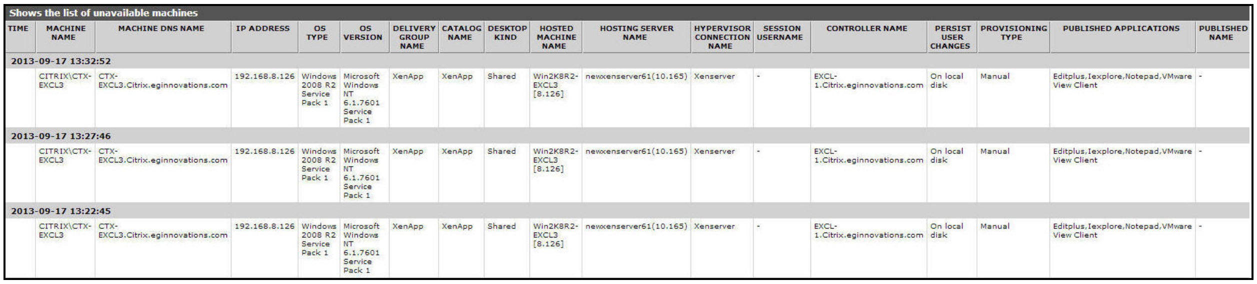


Figure 10.13: The detailed diagnosis of the Used machines measure

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 whih 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.

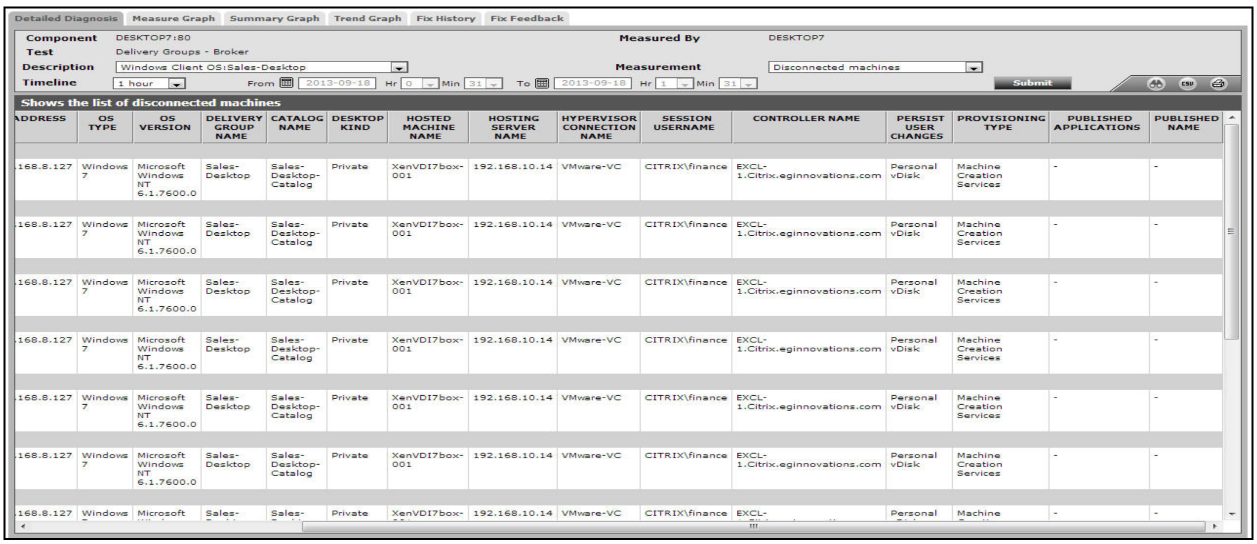


Shows the list of unavailable machines

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																	
	CITRIX\CTX-EXCL3	CTX-EXCL3.Citrix.eginnovations.com	192.168.8.126	Windows 2008 R2 Service Pack 1	Microsoft Windows NT 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,Iexplore,Notepad,VMware View Client	-
2013-09-17 13:27:46																	
	CITRIX\CTX-EXCL3	CTX-EXCL3.Citrix.eginnovations.com	192.168.8.126	Windows 2008 R2 Service Pack 1	Microsoft Windows NT 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,Iexplore,Notepad,VMware View Client	-
2013-09-17 13:22:45																	
	CITRIX\CTX-EXCL3	CTX-EXCL3.Citrix.eginnovations.com	192.168.8.126	Windows 2008 R2 Service Pack 1	Microsoft Windows NT 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,Iexplore,Notepad,VMware View Client	-

Figure 10.14: 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.



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
.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	-	-
.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	-	-
.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	-	-
.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	-	-
.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	-	-
.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	-	-
.168.8.127	Windows	Microsoft	Sales-	Sales-	Private	XenVDI7box-	192.168.10.14	VMware-VC	CITRIX\finance	EXCL-	Personal	Machine	-	-

Figure 10.15: The detailed diagnosis of the Disconnected machines measure

The detailed diagnosis of the *Last deregisteration 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	HYPERVISOR CONNECTION NAME	SESSION USERNAME	CONTROLLER NAME	PERSIST USER CHANGES	PROVISIONING TYPE	PUBLISHED APPLICATIONS	PUBLISHED NAME	REASON	TIME
2013-09-18 01:30:25																			
	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 01:25:48																			
	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 01:21:07																			
	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 01:15:53																			
	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

Figure 10.16: The detailed diagnosis of the Last deregisteration machines measure

The detailed diagnosis of the *Recent deregisteration 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 recenly 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	HYPERVISOR CONNECTION NAME	SESSION USERNAME	CONTROLLER NAME	PERSIST USER 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 Service Pack 1	Microsoft Windows NT 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.Iexplore.Notepad.VMware View Client	-	ContactLost	9/17/2013 7:47:05 AM

Figure 10.17: The detailed diagnosis of the Recent deregistration machines measure

10.4.2 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 Delivery Controller 7

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

1. **TEST PERIOD** - How often should the test be executed

2. **HOST** – The host for which the test is to be configured.
3. **PORT** – The port number at which the specified **HOST** listens to. By default, this is 80.
4. **USERNAME** - In order to monitor the target Delivery Controller 7, eG requires a special user with the following privileges;
   - The *All* scope and *read-only* privileges
   - The *Allow log on locally* security privilege on the Delivery Controller host

   The steps for assigning such privileges to a user are discussed in the **Pre-requisites for monitoring the Citrix Delivery Controller 7.x** chapter. Specify the name of such a user, here.
5. **PASSWORD –** Specify the password for the user specified in the **USERNAME** text box, here.
6. **CONFIRM PASSWORD** – Confirm the**PASSWORD** by retping it here.
7. **DOMAIN** – Here, specify the domain to which the user specified in the **USERNAME** text box belongs to.
8. **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**.
9. **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.
10. **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.
11. **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 every broker in the site.
12. **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 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 *member* of a site and not the *site* server, then set this flag to **No**. In this case, the test will not report any metrics.
13. **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:

- 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

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td>Is delivery group available?:</td><td>Indicates whether this delivery group is available or not.</td><td></td><td>This measure reports the value Yes if a delivery group is available, and reports No if it is not available.

The numeric values that correspond to the above-mentioned Measure Values are as follows:
<table><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>
Note:

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.

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 supported, whether the machine needs to be shut down after use, Powered on status of the machine if user is assigned, Powered on status</td></tr>
</table>

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>of the machine during peak period if user is assigned and the published name of the machine.</td></tr>
<tr><td>Is delivery group in maintenance mode?:</td><td>Indicates whether this delivery group is in a maintenance mode or not.</td><td></td><td>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.

XenDesktop has no control over delivery groups that are in maintenance mode. No user can log on to a machine in this state.

This measure reports the value Yes if a delivery group is in the maintenance mode, and reports No if it is not. The numeric values that correspond to the above-mentioned Measure Values are as follows:

<table><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>
Note:

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.</td></tr>
<tr><td>Total machines:</td><td>Indicates the total number of machines in this group.</td><td>Number</td><td></td></tr>
<tr><td>Available machines:</td><td>Indicates the number of machines in this delivery</td><td>Number</td><td>Ideally, this value should be high. The detailed diagnosis of this measure will</td></tr>
</table>

Measurement	Description	Measurement Unit	Interpretation
	group that are available for a new user to connect to.		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 which the machine operates, thehypervisor connection, the name of

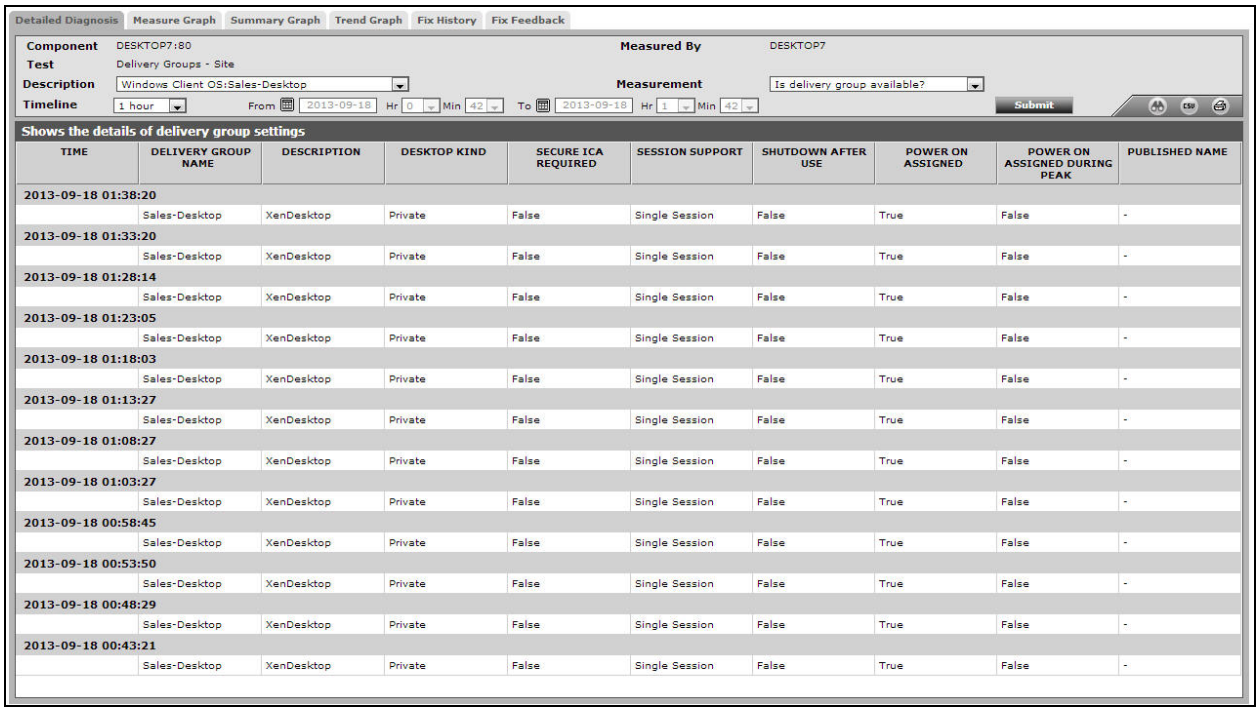
Measurement	Description	Measurement Unit	Interpretation
			the controller, location of the changes made by the user, provisioning type of this machine etc.
Preparing machines:	Indicates the number of machines in this group that are currently preparing sessions for users.	Number	
Pending update machines:	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	Number	

Measurement	Description	Measurement Unit	Interpretation
	registered properly with the broker although they are configured in this delivery 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	Indicates the number of	Number	A low value is desired for this measure.

Measurement	Description	Measurement Unit	Interpretation
machines:	machines in the following power states: • Unavailable • Unmanaged • Unknown		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.
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 deregisteration 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

Measurement	Description	Measurement Unit	Interpretation
			deregistration etc.
Recent deregisteration 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	
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.



Detailed Diagnosis | Measure Graph | Summary Graph | Trend Graph | Fix History | Fix Feedback

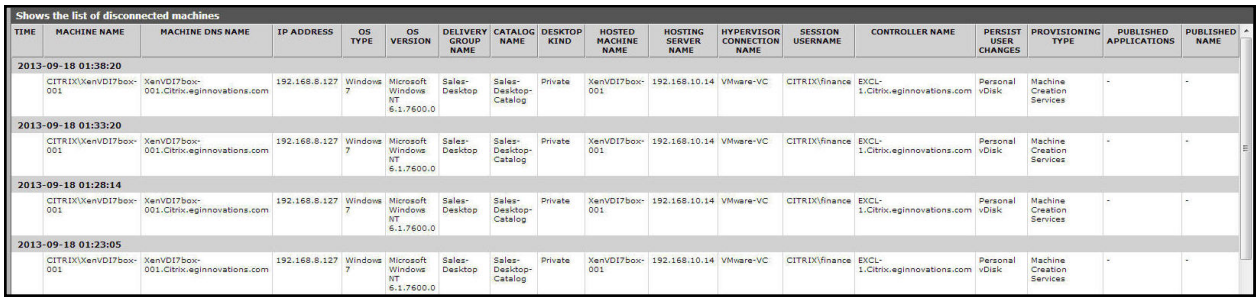
Component: DESKTOP7:80 | Measured By: DESKTOP7
Test: Delivery Groups - Site
Description: Windows Client OS:Sales-Desktop | Measurement: Is delivery group available?
Timeline: 1 hour | From: 2013-09-18 Hr 0 Min 42 | To: 2013-09-18 Hr 1 Min 42 | Submit

Shows the details of delivery group settings

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 10.18: 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.

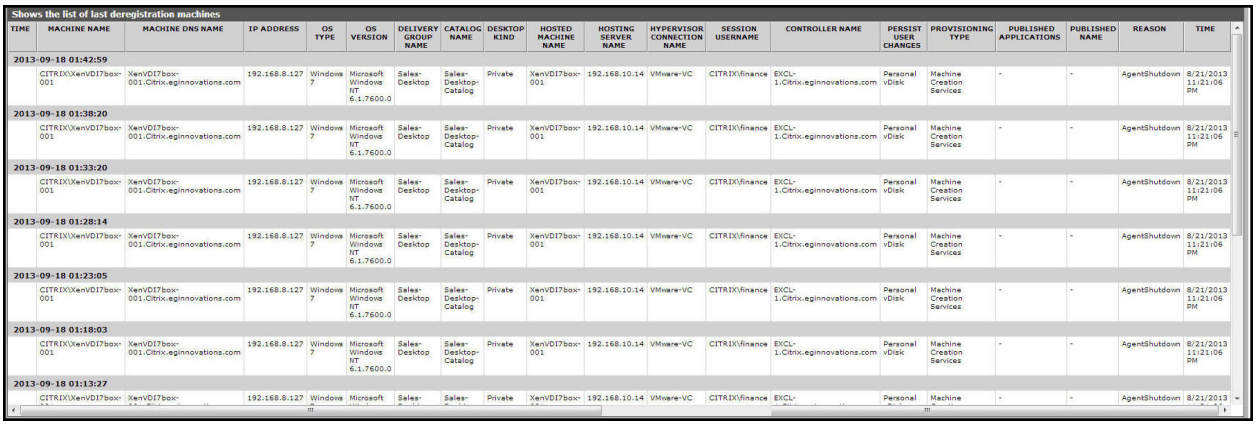


Shows the list of disconnected machines

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	HYPERVISOR 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 10.19: The detailed diagnosis of the Disconnected machines measure

The detailed diagnosis of the *Last deregisteration 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	HYPERVISOR 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-	XenVDI7box-	192.168.8.127	Windows	Microsoft	Sales-	Sales-	Private	XenVDI7box-	192.168.10.14	VMware-VC	CITRIX\finance	EXCL-	Personal	Machine	-	-	AgentShutdown	8/21/2013

Figure 10.20: The detailed diagnosis of the Last deregistration machines measure

10.4.3 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 Delivery Controller 7

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

1. **TEST PERIOD** - How often should the test be executed
2. **HOST** - The host for which the test is to be configured.
3. **PORT** – The port number at which the specified **HOST** listens to. By default, this is 80.
4. **USERNAME** - In order to monitor the target Delivery Controller 7, eG requires a special user with the following privileges;
   - The *All* scope and *read-only* privileges
   - The *Allow log on locally* security privilege on the Delivery Controller host

   The steps for assigning such privileges to a user are discussed in the **Pre-requisites for monitoring the Citrix Delivery Controller 7.x** chapter. Specify the name of such a user, here.
5. **PASSWORD –** Specify the password for the user specified in the **USERNAME** text box, here.

6. **CONFIRM PASSWORD** – Confirm the **PASSWORD** by retyping it here.
7. **DOMAIN** – Here, specify the domain to which the user specified in the **USERNAME** text box belongs.
8. **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 the monitored broker.
9. **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.
10. **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**.
11. **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.
12. **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.
13. **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:

    - 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 this catalog.	Number	Users can be explicitly assigned to the machines or can be assigned based on the first use of the machine. 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.
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.

Measurement	Description	Measurement Unit	Interpretation
Agent error machines:	Indicates the number of machines in this catalog that are currently in the *AgentError* state.	Number	An *AgentError* 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 catalog.	Number	
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 *Unknown/Unmanaged/Unavailable* 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 *Established sessions* and the *Pending sessions* 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

Measurement	Description	Measurement Unit	Interpretation
			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	

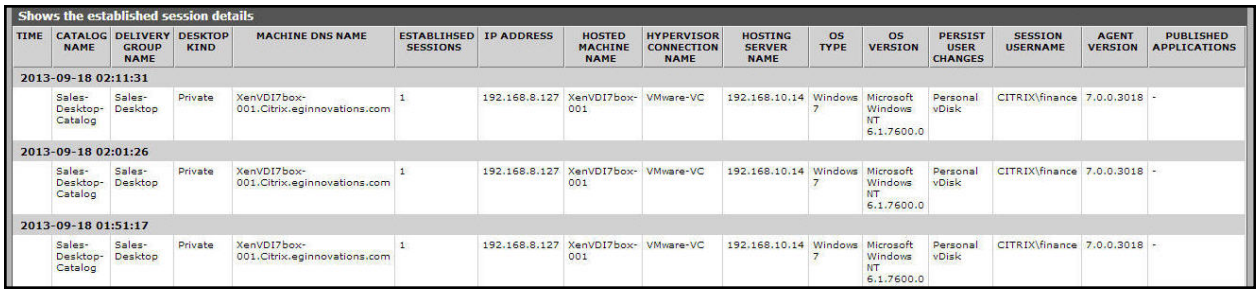
The detailed diagnosis of the *Entitled machines* measure if enabled, lists the name of the machine, the delivery group and catalog to which the machine belongs, the power state of the machine, the IP address, the OS on which the machine operates and the version, the location where the changes made by 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	HYPERVISOR 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 10.21: 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	ESTABLIHSED SESSIONS	IP ADDRESS	HOSTED MACHINE NAME	HYPERVISOR 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 10.22: The detailed diagnosis of the Establised sessions measure

10.4.4 Brokering Machines - Site 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 Delivery Controller 7

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

1. **TEST PERIOD** - How often should the test be executed
2. **HOST** – The host for which the test is to be configured.
3. **PORT** – The port number at which the specified **HOST** listens to. By default, this is 80.
4. **USERNAME** - In order to monitor the target Delivery Controller 7, eG requires a special user with the following privileges;
   - The *All* scope and *read-only* privileges
   - The *Allow log on locally* security privilege on the Delivery Controller host

   The steps for assigning such privileges to a user are discussed in the **Pre-requisites for monitoring the Citrix Delivery Controller 7.x** chapter. Specify the name of such a user, here.
5. **PASSWORD –** Specify the password for the user specified in the **USERNAME** text box, here.
6. **CONFIRM PASSWORD** – Confirm the **PASSWORD** by retyping it here.
7. **DOMAIN** – Here, specify the domain to which the user specified in the **USERNAME** text box belongs to.

8. **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**.
9. **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 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 *member* of a site and not the *site* server, then set this flag to **No**. In this case, the test will not report any metrics.
10. **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.
11. **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.
12. **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.
13. **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.
14. **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:

    - 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 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	Users can be explicitly assigned to the machines or can be assigned based on the first use of the machine. 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.
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 that are currently registered with the broker of this catalog.	Number	
Unregistered machines:	Indicates the number of machines that are currently not registered with the broker of this catalog.	Number	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.

Measurement	Description	Measurement Unit	Interpretation
Agent error machines:	Indicates the number of machines that are currently in the AgentError state during the registration process with the broker.	Number	An AgentError 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 catalog.	Number	
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 of the machine, the delivery group and catalog to which the machine 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.
Suspended machines:	Indicates the number of machines in this catalog that are currently in the Suspended state.	Number	
Other machines:	Indicates the number of machines in this catalog that are currently in *Unknown/Unmanaged/Unavailable* states.	Number	
Maintenance mode machines:	Indicates the total number of machines 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	Number	This measure is a sum of the

Measurement	Description	Measurement Unit	Interpretation
	sessions across all the machines available in this catalog.		*Established sessions* and the *Pending sessions* 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 that are pending or awaiting to be established on the machines of this catalog.	Number	

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	HYPERVISOR CONNECTION NAME	HOSTING SERVER NAME	OS TYPE	OS VERSION	PERSIST USER CHANGES	SESSION USERNAME	AGENT VERSION	PUBLISHED APPLICATIONS
2013-09-18 02:13:59															
	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	-
2013-09-18 02:03:24															
	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 10.23: 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 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.

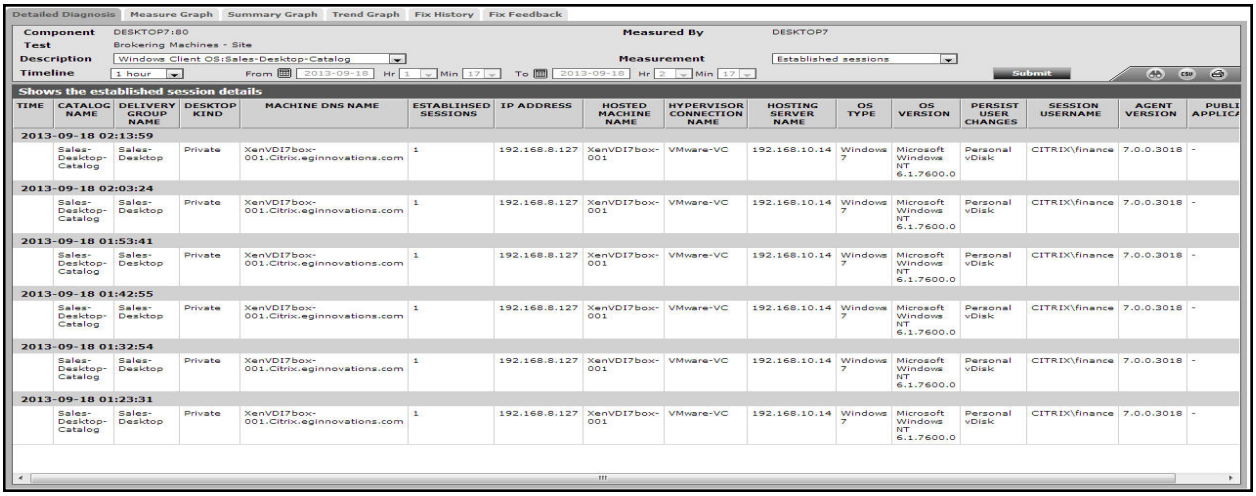


Figure 10.24: The detailed diagnosis of the Established sessions measure of the site

The detailed diagnosis of the *Powered off machines* measure if enabled, lists the name of the machine, the delivery group and catalog to which the machine 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.

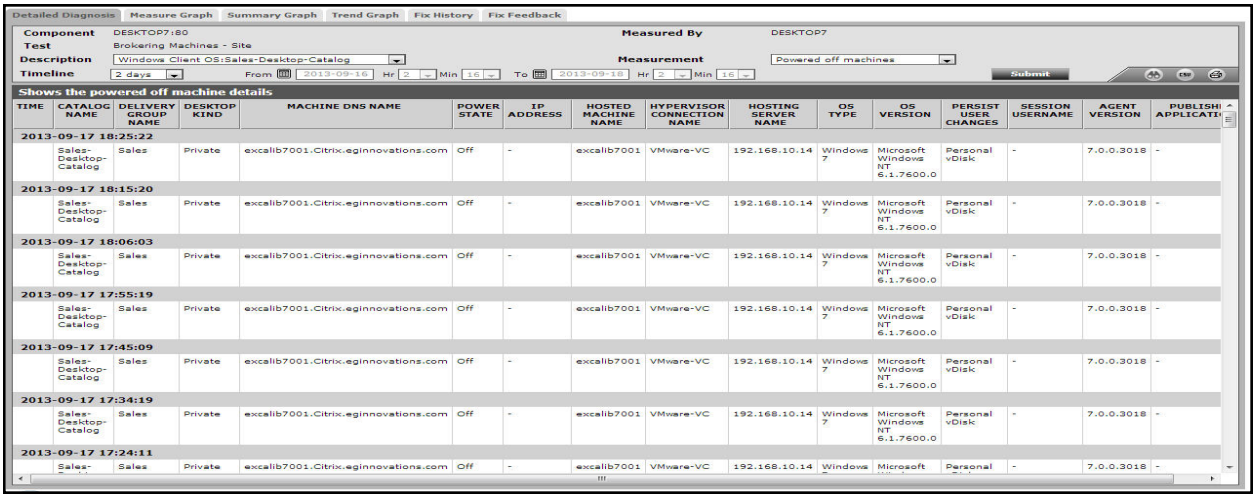


Figure 10.25: The detailed diagnosis of the Powered off machines measure

10.4.5 Machine Catalogs 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 Delivery Controller 7

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

1. **TEST PERIOD** - How often should the test be executed
2. **HOST** – The host for which the test is to be configured.
3. **PORT** – The port number at which the specified **HOST** listens to. By default, this is 80.
4. **USERNAME** - In order to monitor the target Delivery Controller 7, eG requires a special user with the following privileges;
   - The *All* scope and *read-only* privileges
   - The *Allow log on locally* security privilege on the Delivery Controller host

   The steps for assigning such privileges to a user are discussed in the **Pre-requisites for monitoring the Citrix Delivery Controller 7.x** chapter. Specify the name of such a user, here.
5. **PASSWORD –** Specify the password for the user specified in the **USERNAME** text box, here.
6. **CONFIRM PASSWORD** – Confirm the**PASSWORD** by retyping it here.
7. **DOMAIN** – Here, specify the domain to which the user specified in the **USERNAME** text box belongs to.
8. **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**.
9. **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:

- 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

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td>Allocation type:</td><td>Indicates the allocation type of the machines available in this catalog.</td><td>Number</td><td>This measure can report any one of the following values:
Static
Permanent
Random
Unknown
The table below provides the numeric values that correspond to the allocation types listed above, and a brief description of each type:<table><tr><th>Allocation Type</th><th>Numeric Value</th><th>Description</th></tr><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 changes the assignments.</td></tr></table></td></tr>
</table>

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>
<table>
<tr><th>Allocation Type</th><th>Numeric Value</th><th>Description</th></tr>
<tr><td>Permanent</td><td>2</td><td>Indicates that the machines in this catalog are permanently assigned to the user.</td></tr>
<tr><td>Random</td><td>3</td><td>Indicates that the machines in this catalog are picked in random and are temporarily assigned to the user.</td></tr>
</table>
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 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.
</td></tr>
<tr><td>Are physical machines?:</td><td>Indicates whether/not the machines in this catalog are power managed by the broker.</td><td></td><td>This measure reports a value Yes if the machines are power managed by the broker and No, if otherwise.
The table below provides the numeric</td></tr>
</table>

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>values that correspond to the abovementioned values:
<table><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>
Note:
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.</td></tr>
<tr><td>Entitled machines used in delivery groups:</td><td>Indicates the number of assigned machines (to users) in this catalog that are within delivery groups.</td><td>Number</td><td></td></tr>
<tr><td>Entitled machines available for delivery groups:</td><td>Indicates the number of machines in this catalog that are available to users within delivery groups.</td><td>Number</td><td></td></tr>
<tr><td>Machines not entitled available for delivery groups:</td><td>Indicates the number of machines within the delivery groups that are not yet assigned to users.</td><td>Number</td><td></td></tr>
<tr><td>Machines not entitled used in delivery groups:</td><td>Indicates the number of unassigned machines in this catalog within the delivery groups but are still used in the pool.</td><td>Number</td><td></td></tr>
<tr><td>Machines used in delivery groups:</td><td>Indicates the number of machines in this catalog</td><td>Number</td><td></td></tr>
</table>

Measurement	Description	Measurement Unit	Interpretation
	that are within delivery groups.		
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 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.

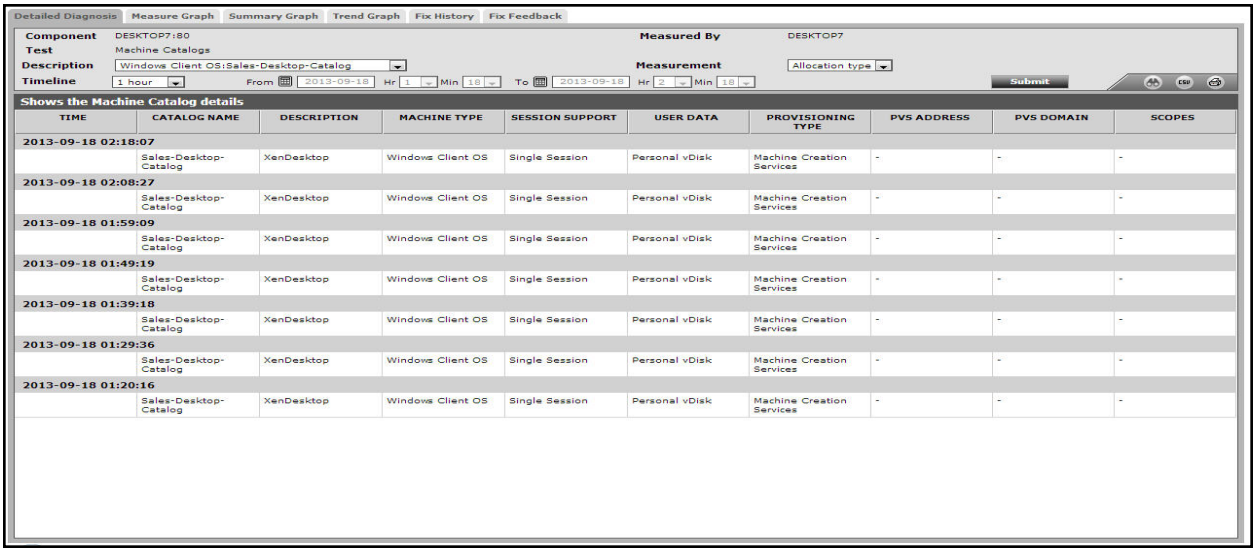


Figure 10.26: The detailed diagnosis of the Allocation type measure

10.4.6 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 Delivery Controller 7

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

1. **TEST PERIOD** - How often should the test be executed
2. **HOST** – The host for which the test is to be configured.
3. **PORT** – The port number at which the specified **HOST** listens to. By default, this is 80.
4. **USERNAME** - In order to monitor the target Delivery Controller 7, eG requires a special user with the following privileges;
   - The *All* scope and *read-only* privileges
   - The *Allow log on locally* security privilege on the Delivery Controller host

   The steps for assigning such privileges to a user are discussed in the **Pre-requisites for monitoring the Citrix Delivery Controller 7.x** chapter. Specify the name of such a user, here.
5. **PASSWORD –** Specify the password for the user specified in the **USERNAME** text box, here.
6. **CONFIRM PASSWORD** – Confirm the**PASSWORD**by retyping it here.
7. **DOMAIN** – Here, specify the domain to which the user specified in the **USERNAME** text box belongs to.
8. **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.
9. **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:
   - 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	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.
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.

10.4.7 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.

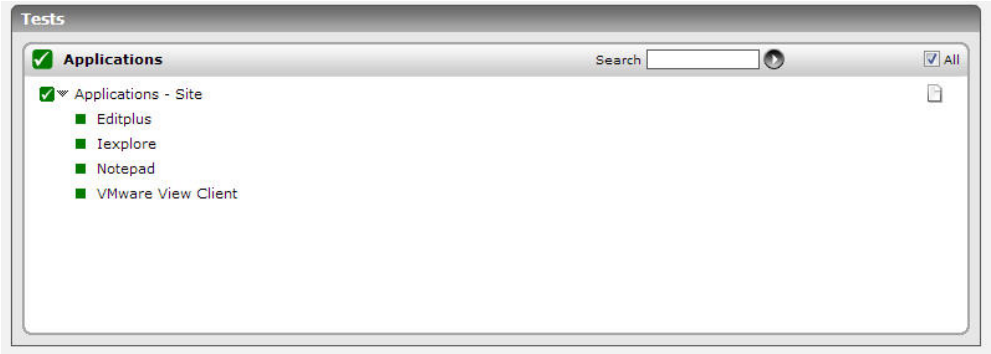


Figure 10.27: The Applications layer

10.4.8 Applications - Site 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 – Site** 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 Delivery Controller 7

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

1. **TEST PERIOD** - How often should the test be executed
2. **HOST** – The host for which the test is to be configured.
3. **PORT** – The port number at which the specified **HOST** listens to. By default, this is 80.
4. **USERNAME** - In order to monitor the target Delivery Controller 7, eG requires a special user with the following privileges;
    - The *All* scope and *read-only* privileges
    - The *Allow log on locally* security privilege on the Delivery Controller host

    The steps for assigning such privileges to a user are discussed in the **Pre-requisites for monitoring**

the Citrix Delivery Controller 7.x chapter. Specify the name of such a user, here.

5. **PASSWORD –** Specify the password for the user specified in the **USERNAME** text box, here.
6. **CONFIRM PASSWORD** – Confirm the **PASSWORD** by retyping it here.
7. **DOMAIN** – Here, specify the domain to which the user specified in the **USERNAME** text box belongs to.
8. **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 - 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 *member* of a site and not the *site* server, then set this flag to **No**. In this case, the test will not report any metrics.
9. **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**.
10. **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:

    - 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.		The values that this measure reports and their corresponding numeric values are: Measure Value / Numeric Value No / 0 Yes / 1 **Note:** By default, this measure reports the

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>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.

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.</td></tr>
<tr><td>Is application visible to users?:</td><td>Indicates whether/not this application is visible to the users of this site.</td><td></td><td>The values that this measure reports and their corresponding numeric values are:
<table><tr><th>Measure Value</th><th>Numeric Value</th></tr><tr><td>No</td><td>0</td></tr><tr><td>Yes</td><td>1</td></tr></table>
Note:

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 measure will represent the same using the corresponding numeric equivalents of 0 and 1 only.</td></tr>
<tr><td>Instances currently running:</td><td>Indicates the number of instances of this application that are currently running in this site.</td><td>Number</td><td>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.

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 to, the</td></tr>
</table>

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>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.</td></tr>
<tr><td>CPU priority level:</td><td>Indicates the priority level that is set for the resource usage of this application.</td><td>Secs</td><td>The values that this measure can report and their corresponding numeric values are:
<table><tr><th>Measure Value</th><th>Numeric Value</th></tr><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></table>Note:
By default, this measure reports the above mentioned values while indicating the priority level with which the application has to be processed. However, the graph of this measure will represent the same using the corresponding numeric equivalents only.</td></tr>
</table>

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.

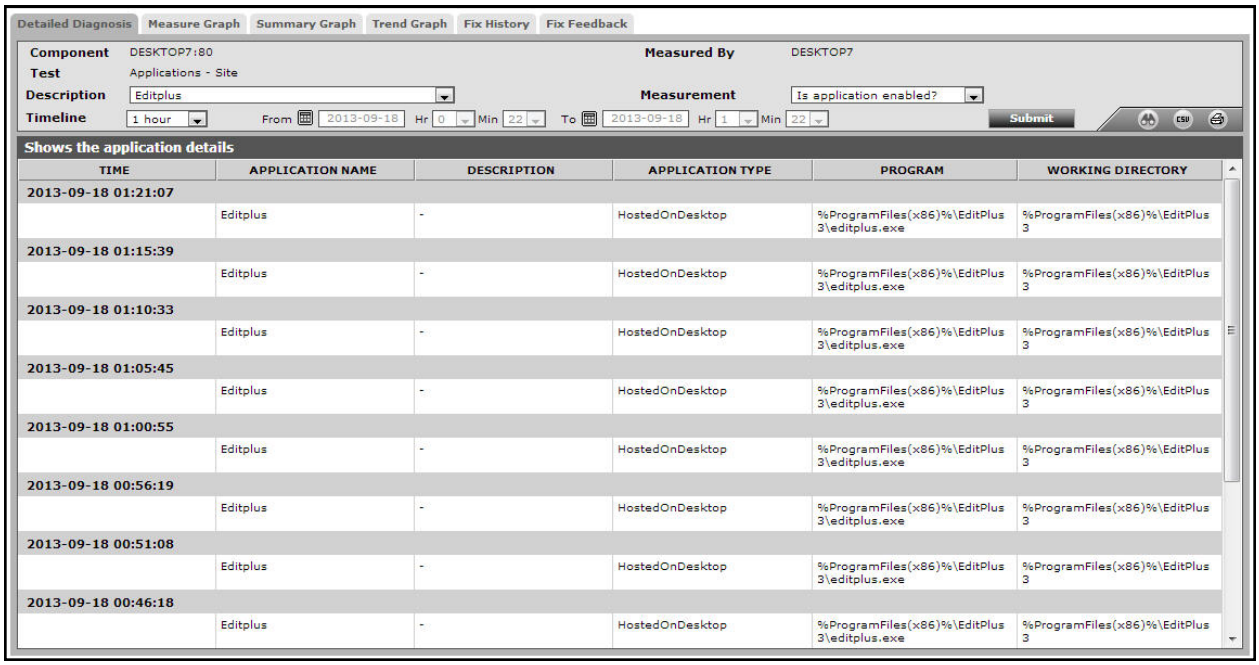


Figure 10.28: The detailed diagnosis of the Is application enabled? measure

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.

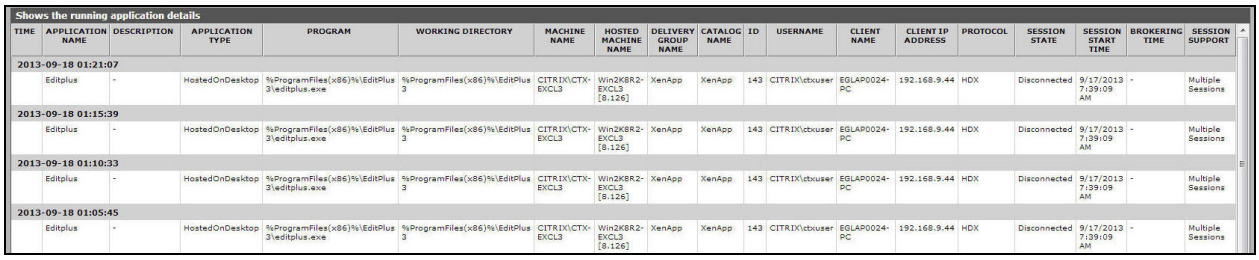


Figure 10.29: The detailed diagnosis of the Instances currently running measure

10.5 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.

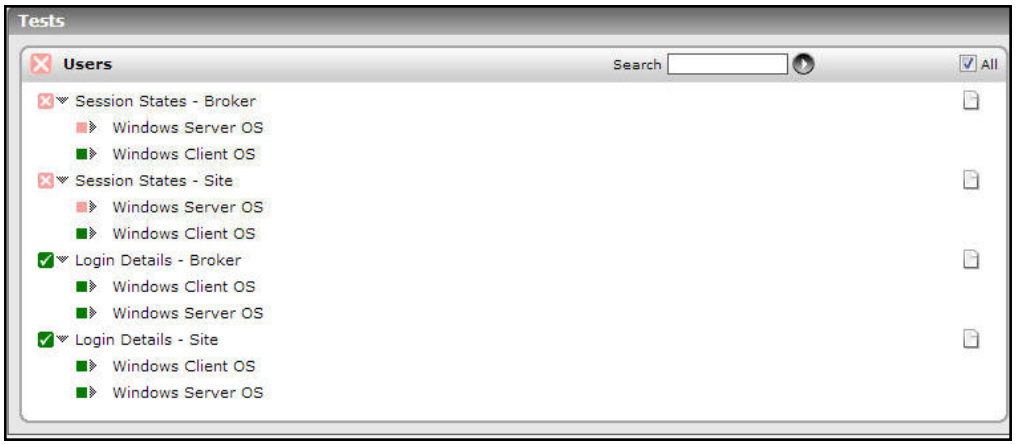


Figure 10.30: The Users layer

10.5.1 Session States - Broker 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 States – Broker** 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 Delivery Controller 7

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

1. **TEST PERIOD** - How often should the test be executed
2. **HOST** - The host for which the test is to be configured.
3. **PORT** – The port number at which the specified **HOST** listens to. By default, this is 80.
4. **USERNAME** - In order to monitor the target Delivery Controller 7, eG requires a special user with the following privileges;
   - The *All* scope and *read-only* privileges
   - The *Allow log on locally* security privilege on the Delivery Controller host

   The steps for assigning such privileges to a user are discussed in the **Pre-requisites for monitoring the Citrix Delivery Controller 7.x** chapter. Specify the name of such a user, here.
5. **PASSWORD –** Specify the password for the user specified in the **USERNAME** text box, here.
6. **CONFIRM PASSWORD** – Confirm the**PASSWORD**by retyping it here.
7. **DOMAIN** – Here, specify the domain to which the user specified in the **USERNAME** text box belongs to.

8. **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**.
9. **DD FREQUENCY** - The **DD FREQUENCY** refers to the frequency with which detailed diagnosis measures are to be generated. 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. Typically, detailed diagnosis frequencies are set globally, using the **DIAGNOSIS CONFIGURATION** page that appears when the Configure -> Diagnosis menu sequence is followed. This global setting can be overridden at the test-level using the **DD FREQUENCY** parameter. To disable the detailed diagnosis capability for a test, you can set this parameter to *none*.
10. **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:

    - 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	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?
Active sessions:	Indicates the number of	Number	A consistent zero value could indicate a

Measurement	Description	Measurement Unit	Interpretation
	user sessions of this type that are currently active on the broker.		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	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 to, 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	
Preparing sessions:	Indicates the number of sessions of this type that are currently in the	Number	

Measurement	Description	Measurement Unit	Interpretation
	Preparing state.		
Non- brokered sessions:	Indicates the number of user sessions of this type that were not brokered by the machines managed by this broker.	Number	
Unknown sessions:	Indicates the number of sessions of this type that are currently in Unknown state.	Number	
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 this broker.	Number	

10.5.2 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 Delivery Controller 7

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

1. **TEST PERIOD** - How often should the test be executed
2. **HOST** - The host for which the test is to be configured.

3. **PORT** – The port number at which the specified **HOST** listens to. By default, this is 80.
4. **USERNAME** - In order to monitor the target Delivery Controller 7, eG requires a special user with the following privileges;
   - The *All* scope and *read-only* privileges
   - The *Allow log on locally* security privilege on the Delivery Controller host

   The steps for assigning such privileges to a user are discussed in the **Pre-requisites for monitoring the Citrix Delivery Controller 7.x** chapter. Specify the name of such a user, here.
5. **PASSWORD –** Specify the password for the user specified in the **USERNAME** text box, here.
6. **CONFIRM PASSWORD** – Confirm the **PASSWORD** by retyping it here.
7. **DOMAIN** – Here, specify the domain to which the user specified in the **USERNAME** text box belongs to.
8. **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**.
9. **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 - 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 *member* of a *site* and not the site server, then set this flag to **No**. In this case, the test will not report any metrics.
10. **DD FREQUENCY** - The **DD FREQUENCY** refers to the frequency with which detailed diagnosis measures are to be generated. 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. Typically, detailed diagnosis frequencies are set globally, using the **DIAGNOSIS CONFIGURATION** page that appears when the Configure -> Diagnosis menu sequence is followed. This global setting can be overridden at the test-level using the **DD FREQUENCY** parameter. To disable the detailed diagnosis capability for a test, you can set this parameter to *none*.
11. **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:
    - 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 type across all brokers in this site.	Number	This is a good indicator of the session load on the brokers. 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 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	

Measurement	Description	Measurement Unit	Interpretation
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 are currently in Unknown state.	Number	
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	

10.5.3 Login Details - Broker 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 Delivery Controller 7

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

1. **TEST PERIOD** - How often should the test be executed
2. **HOST** – The host for which the test is to be configured.
3. **PORT** – The port number at which the specified **HOST** listens to. By default, this is 80.
4. **USERNAME** - In order to monitor the target Delivery Controller 7, eG requires a special user with the

following privileges;

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

The steps for assigning such privileges to a user are discussed in the **Pre-requisites for monitoring the Citrix Delivery Controller 7.x** chapter. Specify the name of such a user, here.

5. **PASSWORD –** Specify the password for the user specified in the **USERNAME** text box, here.
6. **CONFIRM PASSWORD** – Confirm the **PASSWORD** by retyping it here.
7. **DOMAIN** – Here, specify the domain to which the user specified in the **USERNAME** text box belongs to.
8. **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**.
9. **DD FREQUENCY** - The **DD FREQUENCY** refers to the frequency with which detailed diagnosis measures are to be generated. 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. Typically, detailed diagnosis frequencies are set globally, using the **DIAGNOSIS CONFIGURATION** page that appears when the Configure -> Diagnosis menu sequence is followed. This global setting can be overridden at the test-level using the **DD FREQUENCY** parameter. To disable the detailed diagnosis capability for a test, you can set this parameter to *none*.
10. **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:

    - 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	Number	This is a good indicator of the current session load on the machines.

Measurement	Description	Measurement Unit	Interpretation
	the broker.		To determine the details of the currently active sessions, 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.

10.5.4 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 Delivery Controller 7

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

1. **TEST PERIOD** - How often should the test be executed
2. **HOST** - The host for which the test is to be configured.
3. **PORT** – The port number at which the specified **HOST** listens to. By default, this is 80.
4. **USERNAME** - In order to monitor the target Delivery Controller 7, eG requires a special user with the following privileges;
    - The *All* scope and *read-only* privileges

- The *Allow log on locally* security privilege on the Delivery Controller host

The steps for assigning such privileges to a user are discussed in the **Pre-requisites for monitoring the Citrix Delivery Controller 7.x** chapter. Specify the name of such a user, here.

5. **PASSWORD –** Specify the password for the user specified in the **USERNAME** text box, here.
6. **CONFIRM PASSWORD** – Confirm the**PASSWORD**by retyping it here.
7. **DOMAIN** – Here, specify the domain to which the user specified in the **USERNAME** text box belongs to.
8. **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**.
9. **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 - 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 *member* of a site and not the site server, then set this flag to **No**. In this case, the test will not report any metrics.
10. **DD FREQUENCY** - The **DD FREQUENCY** refers to the frequency with which detailed diagnosis measures are to be generated. 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. Typically, detailed diagnosis frequencies are set globally, using the **DIAGNOSIS CONFIGURATION** page that appears when the Configure -> Diagnosis menu sequence is followed. This global setting can be overridden at the test-level using the **DD FREQUENCY** parameter. To disable the detailed diagnosis capability for a test, you can set this parameter to *none*.
11. **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:

    - 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	This is a good indicator of the current session load on the machines. To determine the details of the currently active sessions, use the detailed diagnosis of this measure.
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.
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.

10.5.5 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 Delivery Controller 7

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

1. **TEST PERIOD** - How often should the test be executed

2. **HOST** - The host for which the test is to be configured
3. **PORT –** Refers to the port used by the EventLog Service. Here it is null.
4. **LOGTYPE** – Refers to the type of event logs to be monitored. The default value is *>application*.
5. **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:
   - Manually specify the event sources, IDs, and descriptions in the **FILTER** text area, or,
   - Select a specification from the predefined filter policies listed in the **FILTER** box

   For explicit, manual specification of the filter conditions, select the **NO** option against the **POLICY FILTER** 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.
6. **FILTER** - If the **POLICY FILTER** 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: {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}. For example, assume that the **FILTER** text area takes the value, OS_events:all:Browse,Print:all:none:all:none. Here:
   - *OS_events* is the display name that will appear as a descriptor of the test in the monitor UI;
   - *All* 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 *none*.
   - Next, to ensure that specific event sources are excluded from monitoring, provide a comma-separated list of source names. Accordingly, in our example, *Browse* and *Print* have been excluded from monitoring. Alternatively, you can use *all* to indicate that all the event sources have to be excluded from monitoring, or *none* 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 *All* in our example represents that all the event IDs need to be considered while monitoring.
   - Similarly, the *none* (following *all* 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 monitoring, then provide the IDs as a comma-separated list. Likewise, specifying *all* makes sure that all the event IDs are excluded from monitoring.
   - The all which follows implies that all events, regardless of description, need to be included for monitoring. To exclude all events, use none. 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 - desc*, or desc, or desc,or desc*, or desc1*desc2, etc. desc 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: desc*, or desc, or desc,or desc*, or desc1*desc2, etc. desc 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, none is specified, indicating that no event descriptions are to be excluded from monitoring. If you use all instead, it would mean that all event descriptions are to be excluded from monitoring.

By default, the **FILTER** parameter contains the value*:* all:all:none:all:none:all:none. Multiple filters are to be separated by semi-colons (;).

Note:

The event sources and event IDs specified here should be exactly the same as that which appears in the Event Viewer window.

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:

{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}

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.

7. **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**.
8. **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.

9. **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.
10. **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 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**.
11. **DDFORWARNING** – To ensure that the test does not generate and store detailed measures for warning events, set the **DDFORWARNING** flag to **NO**.
12. **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**.
13. **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 enabled/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:

    - 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	A change in the value of this measure may indicate infrequent but successful operations performed by one or more applications. Please check the Citrix-XenDesktop-BrokerMonitor/Operational Logs in the Event Log Viewer for more details.
Warnings:	This refers to the number of warnings that were generated when the test was last executed.	Number	A high value of this measure indicates problems with the broker that may not have an immediate impact, but may cause future problems in one or more machines of this broker. Please check the Citrix-XenDesktop-BrokerMonitor/Operational Logs in the Event Log Viewer for more details.
Error messages:	This refers to the number of application error events that were generated.	Number	A very low value (zero) indicates that the system is in a healthy state and all applications are running smoothly without any potential problems. An increasing trend or high value indicates the existence of problems like loss of functionality or data in one or more applications. Please check the Citrix-XenDesktop-BrokerMonitor/Operational Logs in the Event Log Viewer for more details.
Critical messages:	Indicates the number of critical events that were generated when the test was last executed.	Number	A critical event is one that an application or a component cannot automatically recover from. **This measure is applicable only for Windows 2008/Windows Vista/Windows 7 systems.**

Measurement	Description	Measurement Unit	Interpretation
			A very low value (zero) indicates that the system is in a healthy state and all applications are running smoothly without any potential problems. An increasing trend or high value indicates the existence of fatal/irrepairable problems in one or more applications. The detailed diagnosis of this measure describes all the critical application events that were generated during the last measurement period. Please check the Citrix-XenDesktop-BrokerMonitor/Operational Logs in the Event Log Viewer for more details.
Verbose messages:	Indicates the number of verbose events that were generated when the test was last executed.	Number	Verbose logging provides more details in the log entry, which will enable you to troubleshoot issues better. **This measure is applicable only for Windows 2008/Windows Vista/Windows 7 systems.** The detailed diagnosis of this measure describes all the verbose events that were generated during the last measurement period. Please check the Citrix-XenDesktop-BrokerMonitor/Operational Logs in the Event Log Viewer for more details.

11

Conclusion

This document has described in detail the monitoring paradigm used and the measurement capabilities of the eG Enterprise suite of products with respect to the **Citrix Delivery Controllers**. For details of how to administer and use the eG Enterprise suite of products, refer to the user manuals.

We will be adding new measurement capabilities into the future versions of the eG Enterprise suite. If you can identify new capabilities that you would like us to incorporate in the eG Enterprise suite of products, please contact support@eginnovations.com. We look forward to your support and cooperation. Any feedback regarding this manual or any other aspects of the eG Enterprise suite can be forwarded to feedback@eginnovations.com.