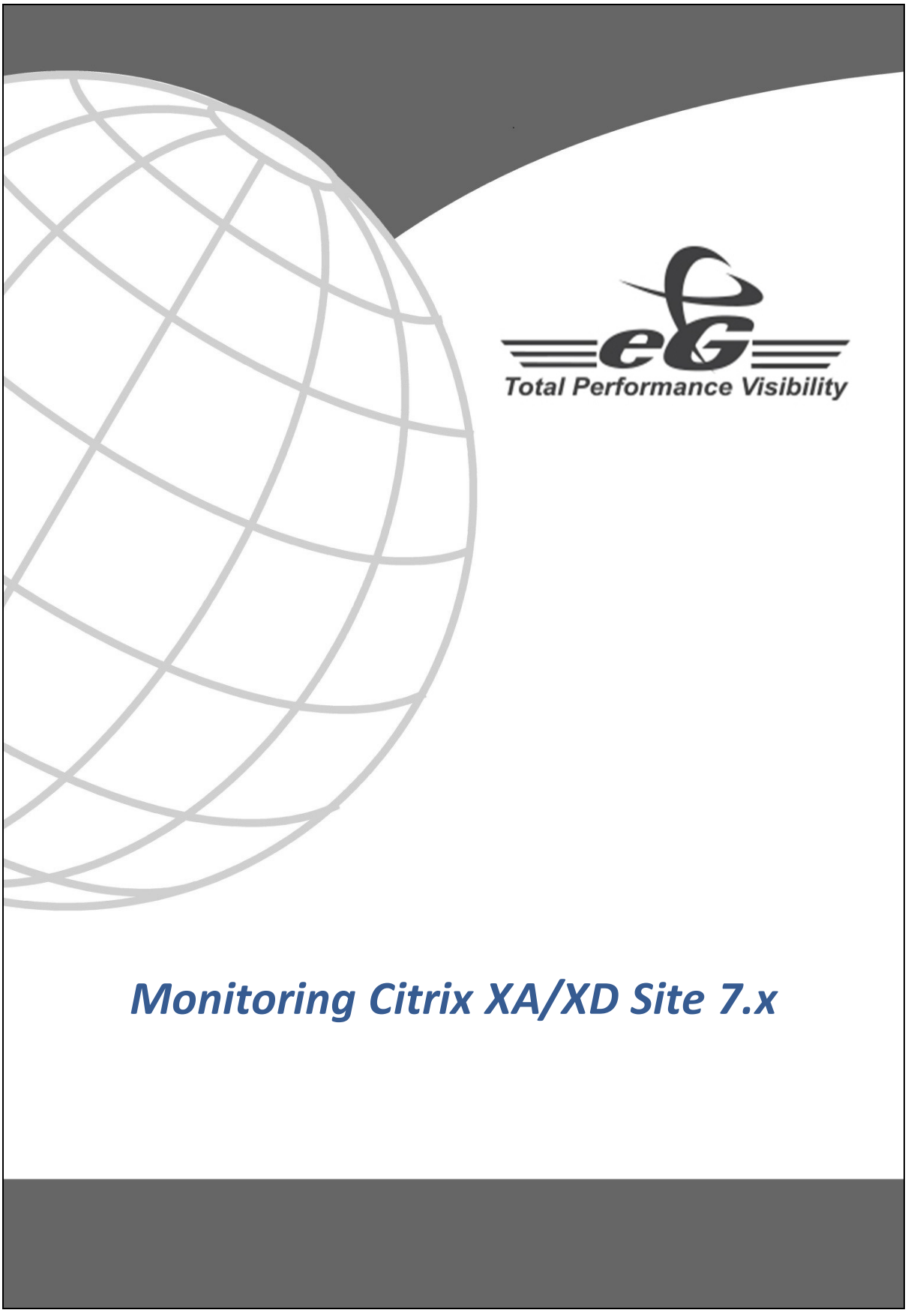

Monitoring Citrix XA/XD Site 7.x

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1

Administering the eG Manager to monitor the Citrix XA/XD site 7.x

1. Log into the eG administrative interface.
2. eG Enterprise cannot automatically discover Citrix XA/XD site 7.x. You need to manually add the server using the **COMPONENTS** page (see Figure 1.1) that appears when the Infrastructure -> Components -> Add/Modify menu sequence is followed. Remember that components manually added are managed automatically.

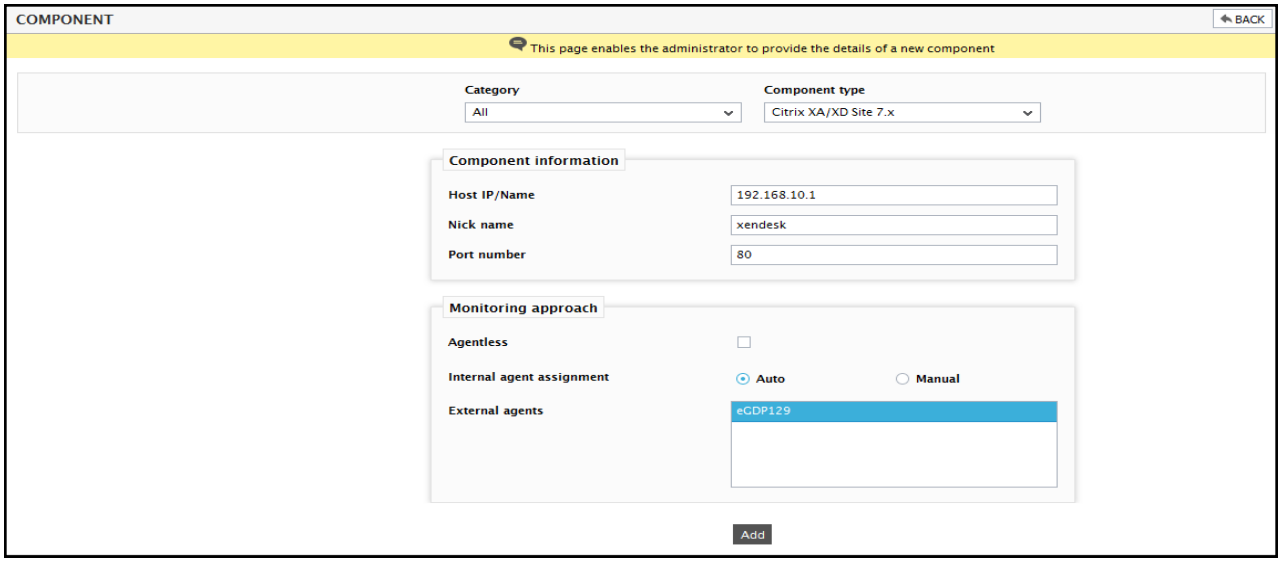

Figure 1.1: Adding a Citrix XA/XD site server

3. Specify the **Host IP** and the **Nick name** of the Citrix XA/XD site 7.x in Figure 1.1. Then click the **Add** button to register the changes.
4. When you attempt to sign out, a list of unconfigured tests will appear as shown in Figure 1.2.

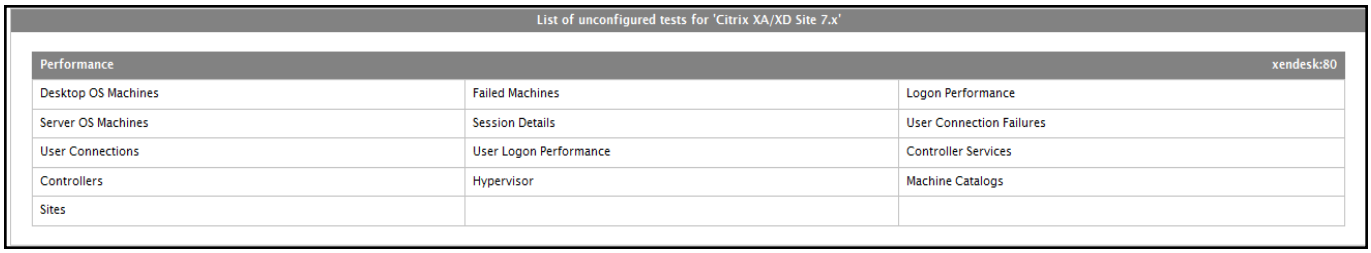

Figure 1.2: List of Unconfigured tests to be configured for the Citrix XA/XD site server

5. Click on the **Desktop OS machines** test to configure it. To know how to configure the test, click here.
6. Once all the tests are configured, signout of the eG administrative interface.

2

Monitoring the Citrix XA/XD Site 7.x

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.

Monitoring a XA/XD site will therefore provide administrators with an overview of the hypervisors used, delivery groups managed, and desktops delivered by all the controllers in the site, and also points to probable problem areas. For this site-level overview of performance, eG Enterprise provides a dedicated Citrix XA/XD Site 7.x monitoring model.

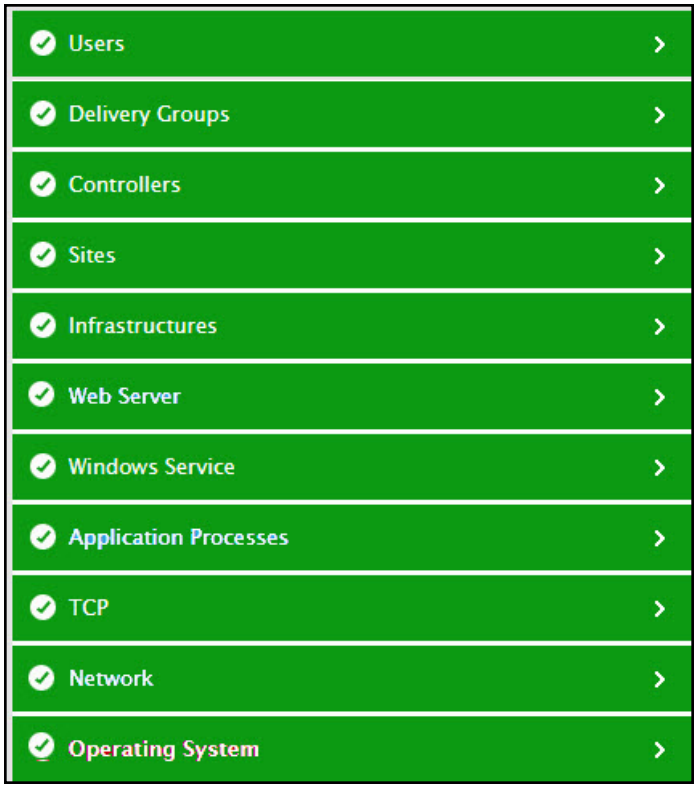

Figure 2.1: The layer model of a Citrix XA/XD Site 7.x

Each layer in Figure 2.1 above is mapped to tests that to pull out a wealth of performance information related to a broker site. To enable the eG agent to collect these metrics, you need to deploy the agent on any broker in the site. This agent then leverages the Citrix ODATA API and runs Citrix Powershell SDK commands on the broker to report on site composition and to monitor the connectivity between the monitored broker and key site components such as the license server, database server, hypervisors, etc. In the process, breaks in

connectivity between the broker and a hypervisor and unavailability of the license server/database server can be promptly detected. In addition, delivery groups managed by all the brokers in the site are monitored, and state of server/desktop OS machines in each group is reported, so that powered-off/unavailable machines can be isolated.

Note:

eG Enterprise does not require the Citrix Platinum License for monitoring the Citrix XA/XD Site 7.x.

2.1 Pre-requisites for monitoring the Citrix XA/XD Site 7.x

Typically, to enable the eG agent to pull out these status metrics from the Site and report anomalies, the following pre-requisites should be fulfilled:

- The **DOMAIN**, **USERNAME**, and **PASSWORD** parameters of every test that the eG agent executes for the Citrix XA/XD Site 7.x component should be configured with the domain name and credentials (as the case may be) of a user with **Farm Administrator** rights.
- The user should also be assigned the **Allow log on locally** security privilege on the Citrix XA/XD Site 7.x 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.
- The **eGurkhaAgent** service should run using the Local System account.

Using the metrics so collected, administrators can find quick and accurate answers for the following performance queries:

- Is the controller not able to communicate with any hypervisor? If so, which hypervisor is it?
- Is the license server in the site available? If so, how quickly is it responding to requests?
- Have any controllers in the site been inactive for a long time? Which brokers are these?
- Is any controller powered-off now?
- Which controller in the site has failed?
- Are the critical site services running on the controller being monitored?

- Which delivery group is overloaded with desktop sessions?
- Are any machines in the site waiting for image updates? Which ones are these and which delivery group do they belong to?
- Which machines are in the 'Suspended' or 'Powered off' state currently?
- Which machines in the site have failed to start?
- Which machines are stuck on boot?
- Which are the machines that have violated their maximum load limit?
- Is any machine in the maintenance mode?
- Which machine has the highest load evaluator index? What is contributing to this - high CPU/memory/disk space usage? or high user session load?
- 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?
- Which user's logon is taking the maximum time? Where is the user experiencing delays - when brokering? at VM startup? during HDX connection? during authentication? when applying GPOs? at the time of logon script execution? when loading user profile? when handing off keyboard and mouse control to the user?

This document will elaborate on the top 5 layers of Figure 2.1 only.

2.2 The Infrastructures Layer

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

Figure 2.2: The tests mapped to the Infrastructures layer

2.2.1 Hypervisor Test

This test reports the status of the connection between the XenDesktop broker 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 broker in a Citrix XA/XD Site 7.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for each hypervisor with which the target controller communicates

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. **DOMAIN**, **USERNAME** and **PASSWORD** – To connect to a delivery controller in a site and pull out metrics from it, the eG agent requires **Farm Administrator** rights. In order to configure the eG agent with **Farm Administrator** privileges, specify the **DOMAIN** to which the target controller belongs and enter the credentials of a user who has the **Farm Administrator** rights in the **USERNAME** and **PASSWORD** text boxes. This user should also be assigned the **Allow log on locally** privilege on the Citrix XA/XD Site 7.x host. The steps for assigning the **Allow log on locally** privilege are explained in the Section **2.1**.
5. **CONFIRM PASSWORD –** Confirm the **PASSWORD** by retyping it here.
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

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td>State of controller'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>Numeri-c Value</th><th>Descrip-tion</th></tr><tr><td>On</td><td>1</td><td>Indicates that the broker is in contact with the hypervisor</td></tr><tr><td>InMain-tenanceMode</td><td>2</td><td>Indicates that the hosting server (e.g., XenServer, Hyper- V) through which machines are managed, is under maintenanc e</td></tr><tr><td>Unavailable</td><td>3</td><td>Indicates that the broker is unable to contact the hypervisor</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 States while indicating the connection status of the broker and the hypervisor. However, in the graph of this measure, the same will be represented using the corresponding numeric equivalents - 1 to 3 – only.
The detailed diagnosis capability of this measure if enabled, reveals the connection name, connection type, Hypervisor address, the preferred controller and the user who is accessing the hypervisor.</td></tr>
<tr><td>Is controller'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:
<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 controller's connection to hypervisor in persistent?:</td><td>Indicates whether/not the connection is persistent between the broker and the hosting</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</td></tr>
</table>

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

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td>machines.</td><td></td><td>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 **State** of the controller's connection to *Hypervisor* measure reveals the connection name, connection type, Hypervisor address, the preferred controller and the user who is accessing the hypervisor.

Figure 2.3: The detailed diagnosis of the State of the controller's connection to hypervisor measure

2.3 The Sites 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.

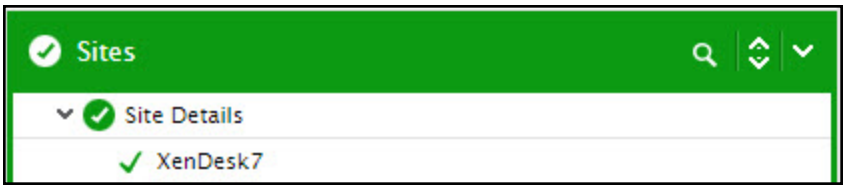

Figure 2.4: The test mapped to the Sites layer

2.3.1 Sites Test

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;
- A session overload on the site;
- Inactive brokers in the site

Target of the test : A broker in a Citrix XA/XD Site 7.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for the Citrix XA/XD Site 7.x to which the target broker belongs

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. **DOMAIN**, **USERNAME** and **PASSWORD** – To connect to a delivery controller in a site and pull out metrics from it, the eG agent requires **Farm Administrator** rights. In order to configure the eG agent with **Farm Administrator** privileges, specify the **DOMAIN** to which the target controller belongs and enter the credentials of a user who has the **Farm Administrator** rights in the **USERNAME** and **PASSWORD** text boxes. This user should also be assigned the **Allow log on locally** privilege on the Citrix XA/XD Site 7.x host. The steps for assigning the **Allow log on locally** privilege are explained in the Section **2.1**.
5. **CONFIRM PASSWORD –** Confirm the **PASSWORD** by retyping it here.
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
License server	Indicates the availability of	Percent	If the license server is available, a value

Measurement	Description	Measurement Unit	Interpretation
availability:	the license server in this site.		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 licensed sessions:	Indicates the total number of licensed sessions that are currently active on this site.	Number	This measure is a good indicator of the load on this site and the extent of license usage.
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</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>You have older devices running plug-in software that cannot be upgraded to use SSL

As an alternative to SSL/TLS encryption, when there is no risk of a “man-in-the-middle” attack

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>Is the trust request 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</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>where they left off in published applications.

• XenApp can use the information passed on from Access Gateway (Version 4.0 or later) to control application access and session policies. This information includes Access Gateway filters that can be used to control access to published applications and to set XenApp session policies. If you do not trust requests sent to the XML Service, this additional information is ignored.

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 on this site:</td><td>Indicates the total number of brokers that are configured for this site.</td><td>Number</td><td>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</td></tr>
</table>

Measurement	Description	Measurement Unit	Interpretation
			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.

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

Shows the license server information on this site

SITE NAME	LICENSE SERVER NAME	LICENSE SERVER PORT	LICENSE EDITION	LICENSE MODEL	REQUIRED SA DATE
Sep 26, 2014 10:44:19					
XenDesk7	EXCL-1.Citrix.eginnovations.com	27000	Platinum Edition	User/Device	5/22/2013 5:30:00 AM

Figure 2.5: 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.

Shows the list of contollers on this site

MACHINE NAME	DNS NAME	CONTOLLER STATE	TOTAL MACHINES	CONTROLLER VERSION	OS	OS VERSION	LAST ACTIVE TIME
Sep 26, 2014 10:44:19							
CITRIX\EXCL-1	EXCL-1.Citrix.eginnovations.com	Active	1	7.0.0.3012	Win32NT	6.1.7601.65536	9/26/2014 10:42:29 AM
CITRIX\EXCL-2	EXCL-2.Citrix.eginnovations.com	Active	2	7.0.0.3012	Win32NT	6.1.7601.65536	9/26/2014 10:42:27 AM

Figure 2.6: The detailed diagnosis of the Total brokers for this site measure

2.4 The Controllers Layer

For each controller in a site, the tests mapped to this layer report the current state of the controller and the state of each critical service running on the controller. Abnormalities in controller operations can thus be captured quickly.

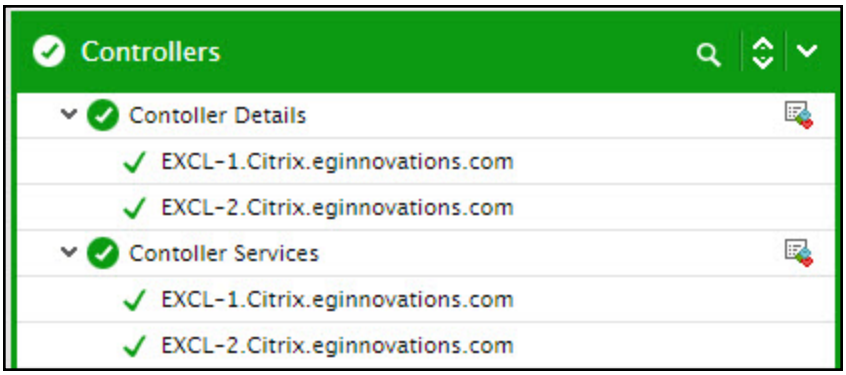

Figure 2.7: The tests mapped to the Controllers layer

2.4.1 Controllers Test

Controllers are server machines running instances of the broker service. This test auto-discovers the 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 broker in a Citrix XA/XD Site 7.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for the XenDesktop server site to which the target broker belongs

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. **DOMAIN**, **USERNAME** and **PASSWORD** – To connect to a delivery controller in a site and pull out metrics from it, the eG agent requires **Farm Administrator** rights. In order to configure the eG agent with **Farm Administrator** privileges, specify the **DOMAIN** to which the target controller belongs and enter the credentials of a user who has the **Farm Administrator** rights in the **USERNAME** and **PASSWORD** text boxes. This user should also be assigned the **Allow log on locally** privilege on the Citrix XA/XD Site 7.x host. The steps for assigning the **Allow log on locally** privilege are explained in the Section **2.1**.
5. **CONFIRM PASSWORD** – Confirm the **PASSWORD** by retyping it here.
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
Controller 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 desktop delivery controller: • Active – Indicates that the broker is powered-on and fully operational • On – Indicates that the broker is powered-on, but not fully operational • Failed – Indicates that the broker has failed due to some reason • Off – Indicates that the broker is powered-off The numeric values that correspond to the above- mentioned states are as follows: **State** / **Numeric Value**: Active 1; On 2; Failed 3; Off 4 **Note:** By default, this measure reports the above- mentioned **State** s while indicating the current state of a broker. However, the graph of this measure will represent states using the

Measurement	Description	Measurement Unit	Interpretation
			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.
Total registered machines:	Indicates the number of machines that are currently registered with this broker.	Number	

The detailed diagnosis of the *Controller state* measure reveals when the controller was last accessed, when it was last started, and also displays the name of the machine on which the broker is installed, the version of the broker, the Operating system of the machine and the Operating system version.

Shows the controller information

DNS NAME	MACHINE NAME	CONTROLLER VERSION	OS	OS VERSION	LAST ACTIVE TIME	LAST START TIME
Sep 26, 2014 10:42:42						
EXCL-2.Citrix.eginnovations.com	CITRIX\EXCL-2	7.0.0.3012	Win32NT	6.1.7601.65536	9/26/2014 10:42:27 AM	9/1/2014 11:19:01 AM

Figure 2.8: The detailed diagnosis of the Controller state measure

2.4.2 Controller Services Test

The broker service is responsible for the brokering of user sessions to desktops or applications, and for power management of the underlying machines. Every controller in a site runs an instance of the broker service. In addition to the broker service, the following critical services also run on a controller:

- AD identity service
- Configuration service
- Host service
- Machine creation service
- Admin service
- Monitoring service
- Logging service

This test periodically checks the health of each of these services on the target controller in a XenDesktop site, and reports abnormalities (if any). With the help of this test, you can promptly detect which services have failed.

Target of the test : A broker in a Citrix XA/XD Site 7.x

Agent deploying the test : An internal agent

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

Configurable parameters for the test

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. **DOMAIN**, **USERNAME** and **PASSWORD** – To connect to a delivery controller in a site and pull out metrics from it, the eG agent requires **Farm Administrator** rights. In order to configure the eG agent with **Farm Administrator** privileges, specify the **DOMAIN** to which the target controller belongs and enter the credentials of a user who has the **Farm Administrator** rights in the **USERNAME** and **PASSWORD** text boxes. This user should also be assigned the **Allow log on locally** privilege on the Citrix XA/XD Site 7.x host. The steps for assigning the **Allow log on locally** privilege are explained in the Section **2.1**.
5. **CONFIRM PASSWORD –** Confirm the**PASSWORD** by retyping it here.
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
Broker service status:	Indicates the current status of the broker service on this broker.	Number	The Citrix Broker Service brokers connections from endpoint devices to desktops and applications.

<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 Measure Values that this measure can take 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>DBNewerVersionThanService</td><td>5</td></tr><tr><td>DBOlderVersionThanService</td><td>6</td></tr><tr><td>DBVersionChangeInProgress</td><td>7</td></tr><tr><td>PendingFailure</td><td>8</td></tr><tr><td>Failed</td><td>9</td></tr><tr><td>Unknown</td><td>10</td></tr><tr><td>DBNotFound</td><td>11</td></tr><tr><td>DBMissingOptionalFeature</td><td>12</td></tr><tr><td>DBMissingMandatoryFeature</td><td>13</td></tr></table>
Note:
By default, this measure reports the above-mentioned Measure Values while indicating the current state of the broker service. However, in the graph of this measure, the same will be represented using the corresponding numeric equivalents – i.e., 1 to 13.</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</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>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>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 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 Configuration Service on this broker.</td><td></td><td>The Citrix Configuration Service stores the configuration information related to Citrix services in the broker’s MS SQL database.

The values that this measure can report and their corresponding numeric 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>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 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>
<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>Measure Value</th><th>Numeric Value</th></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>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 XenDesktop Broker via the Web Interface, the XenDesktop Broker manages the delivery groups by building, starting, and shutting down the desktops as required. At this juncture, the XenDesktop Broker 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:
<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>
</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>Numeric Value</th></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>
<tr><td>DBRejectedConnection</td><td>3</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>Numeric Value</th></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 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>DBVersionChangeInProgr</td><td>8</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>Numeric Value</th></tr>
<tr><td>ess</td><td></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 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 Monitoring 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>
</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>Numeric Value</th></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 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>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>
</td></tr>
</table>

Measurement	Description	Measurement Unit	Interpretation
			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.

2.5 The Delivery Groups Layer

The tests mapped to this layer monitor the desktop OS and server OS machines in each delivery group configured on the broker in a site and report the status of these machines.

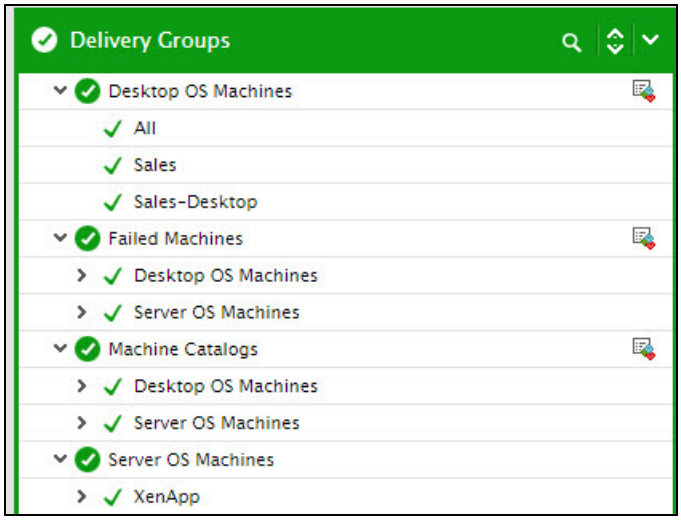

Figure 2.9: The tests mapped to the Delivery Groups layer

2.5.1 Desktop OS Machines Test

XenDesktop supports two types of Delivery Agents: one for Windows Server OS machines and one for Windows Desktop OS machines. **Desktop OS Machines** 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.

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.

To track the status of desktop OS machines in each delivery group configured in a site, use the **Desktop OS Machines** test.

Target of the test : A broker in a Citrix XA/XD Site 7.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for each delivery group containing desktop OS machines in the 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. **CONTROLLER IP ADDRESS** – Specify the IP address of the delivery controller (i.e., broker) in the site with which the eG agent should communicate for collecting performance metrics.
5. **CONTROLLER PORT** – Specify the port number of the delivery controller (i.e., broker) in the site with which the eG agent should communicate for collecting performance metrics.
6. **USERNAME** and **PASSWORD** – To connect to a delivery controller and pull out metrics from it, the eG agent requires **Farm Administrator** rights. In order to configure the eG agent with **Farm Administrator** privileges, specify the credentials of the **Farm Administrator** in the **USERNAME** and **PASSWORD** text boxes. This user should also be assigned the **Allow log on locally** privilege on the Citrix XA/XD Site 7.x host. The steps for assigning the **Allow log on locally** privilege are explained in the Section **2.1**.
7. **CONFIRM PASSWORD –** Confirm the **PASSWORD** by retyping it here.
8. **FULLY QUALIFIED DOMAIN NAME** – Here, specify the fully-qualified name of the domain to which the specified controller belongs.
9. **SSL** – Indicate whether/not the controller used for metrics collection is SSL-enabled. By default, this flag is set to **Yes**.
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 machines:	Indicates the total number of machines in this group.	Number	Use the detailed diagnosis of this measure to know which desktop OS machines are part of a delivery group.
Preparing machines:	Indicates the number of machines in this group that are currently preparing sessions for users.	Number	
Pending image 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.
Maintenance mode enabled machines:	Indicates the number of machines in this group for which maintenance mode has been enabled.	Number	
Powered on machines:	Indicates the number of machines in this desktop group that are currently powered on.	Number	Use the detailed diagnosis of this measure to know which machines are currently powered on.
Machines with suspended power state:	Indicates the number of machines in this delivery group that are currently in the Suspended state.	Number	Use the detailed diagnosis of this measure to know which machines are currently in the Suspended state.
Powered off machines:	Indicates the number of machines in this delivery group that are currently powered off.	Number	Use the detailed diagnosis of this measure to know which machines are currently in the powered off.
Machines with unknown power	Indicates the number of machines in the following	Number	A low value is desired for this measure.

Measurement	Description	Measurement Unit	Interpretation
state:	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.
Assigned machines:	Indicates the number of machines that are assigned to users in this delivery group.	Number	Use the detailed diagnosis of this measure to know which machines are assigned to users.
Unassigned machines:	Indicates the number of machines in this delivery group that are not assigned to users.	Number	Use the detailed diagnosis of this measure to know which machines are not assigned to users.
Resuming machines:	Indicates the number of machines in this group that are in the Resume state currently.	Number	Use the detailed diagnosis of this measure to know which machines are in the Resume state.
Total sessions:	Indicates the total number of user sessions to this delivery group.	Number	
Percentage of assigned machines:	Indicates the percentage of machines that are assigned to users in this delivery group.	Percent	

Use the detailed diagnosis of the *Total machines* measure to know which desktop OS machines are part of a delivery group.

Shows the lists of desktop machines

MACHINE NAME	DNS NAME	IP ADDRESS	OS	VDA VERSION	HOSTED MACHINE NAME	HOSTING SERVER NAME	FAILURE TYPE	FAILURE REASON	FAILURE TIME	IS ASS
Sep 26, 2014 10:47:12										
CITRIX\excalib7001	excalib7001.Citrix.eginnovations.com	192.168.8.74	Windows 7	7.0.0.3018	excalib7001(8.74) (old-8.248)	192.168.10.14	-	-	-	Yes

Figure 2.10: The detailed diagnosis of the Total machines measure

For a list of powered off machines in a delivery group, use the detailed diagnosis of the *Powered off machines* measure.

Shows the lists of powered off machines

MACHINE NAME	DNS NAME	IP ADDRESS	OS	VDA VERSION	HOSTED MACHINE NAME	HOSTING SERVER NAME	FAILURE TYPE	FAILURE REASON	FAILURE TIME	IS ASSIGNE
Sep 26, 2014 06:57:38										
CITRIX\excalib7001	excalib7001.Citrix.eginnovations.com	-	Windows 7	7.0.0.3018	excalib7001(8.74) (old-8.248)	192.168.10.14	-	-	-	Yes

Figure 2.11: The detailed diagnosis of the Powered off machines measure

2.5.2 Failed Machines Test

Using this test, administrator can figure out how many machines of which type are currently in a state of failure. The names of these machines and the precise failure state they are in presently can also be ascertained.

Target of the test : A broker in a Citrix XA/XD Site 7.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for each delivery group configured for the XenDesktop 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** – The port number at which the specified **HOST** listens to. By default, this is 80.
4. **CONTROLLER IP ADDRESS** – Specify the IP address of the delivery controller (i.e., broker) in the site with which the eG agent should communicate for collecting performance metrics.
5. **CONTROLLER PORT** – Specify the port number of the delivery controller (i.e., broker) in the site with which the eG agent should communicate for collecting performance metrics.

6. **USERNAME** and **PASSWORD** – To connect to a delivery controller and pull out metrics from it, the eG agent requires **Farm Administrator** rights. In order to configure the eG agent with **Farm Administrator** privileges, specify the credentials of the **Farm Administrator** in the **USERNAME** and **PASSWORD** text boxes. This user should also be assigned the **Allow log on locally** privilege on the Citrix XA/XD Site 7.x host. The steps for assigning the **Allow log on locally** privilege are explained in the Section **2.1**.
7. **CONFIRM PASSWORD –** Confirm the **PASSWORD** by retyping it here.
8. **FULLY QUALIFIED DOMAIN NAME** – Here, specify the fully-qualified name of the domain to which the specified controller belongs.
9. **SSL** – Indicate whether/not the controller used for metrics collection is SSL-enabled. By default, this flag is set to **Yes**.
10. **REPORT BY MACHINE TYPE** – If you want the results of this test to be grouped by machine type – i.e., grouped into **Desktop OS Machines** and **Server OS Machines** – then set this flag to **Yes**. If not, set this flag to **No**.
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
Machines that failed to start:	Indicates the number of machines in this delivery group that failed to start.	Number	The value of this measure refers to the number of failures that occurred due to a guest machine being unable to start as in disk is detached when attempting to boot or the hosting server reported that the VM could not be booted up. Use the detailed diagnosis of this measure to know which machines failed to start.

Measurement	Description	Measurement Unit	Interpretation
Machines stuck on boot:	Indicates the number of machines that are stuck on boot.	Number	This measure refers to the number of failures that occurred due to the guest operating system being unable to boot up fully. For example, OS BSOD during boot or unable to locate the boot partition. Use the detailed diagnosis of this measure to know which machines were stuck on boot.
Unregistered machines:	Indicates the number of machines in this delivery group that are not registered with the broker.	Number	Machine registration can fail due to loss of network connectivity between the machine and the broker, the clocks on the two being out of sync or the Desktop Service not running on the desktop. Use the detailed diagnosis of this measure to identify the unregistered machines.
Maximum load:	Indicates the number of machines in this delivery group that have violated their maximum load limit.	Number	This measure applies only to Server OS Machines. The value of this measure refers to the number of failures that occurred owing to too many sessions on the machine or because CPU or memory usage of the machines crossed the threshold specified for the delivery group. Use the detailed diagnosis of this measure to identify the loaded machines.

2.5.3 Server OS Machines Test

Server OS Machines are VMs or physical machines based on the Windows Server operating system used for delivering applications or hosted shared desktops to users.

This test auto-discovers the Server OS Machines in the site and reports the session load on, resource usage of, and current state of each machine. This way, administrators can quickly identify machines that are experiencing heavy load and those that are consuming resources abnormally.

Target of the test : A broker in a Citrix XA/XD Site 7.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for each server OS machine running in the XenDesktop 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** – The port number at which the specified **HOST** listens to. By default, this is 80.
4. **CONTROLLER IP ADDRESS** – Specify the IP address of the delivery controller (i.e., broker) in the site with which the eG agent should communicate for collecting performance metrics.
5. **CONTROLLER PORT** – Specify the port number of the delivery controller (i.e., broker) in the site with which the eG agent should communicate for collecting performance metrics.
6. **USERNAME** and **PASSWORD** – To connect to a delivery controller and pull out metrics from it, the eG agent requires **Farm Administrator** rights. In order to configure the eG agent with **Farm Administrator** privileges, specify the credentials of the **Farm Administrator** in the **USERNAME** and **PASSWORD** text boxes. This user should also be assigned the **Allow log on locally** privilege on the Citrix XA/XD Site 7.x host. The steps for assigning the **Allow log on locally** privilege are explained in the Section **2.1**.
7. **CONFIRM PASSWORD** – Confirm the **PASSWORD** by retyping it here.
8. **FULLY QUALIFIED DOMAIN NAME** – Here, specify the fully-qualified name of the domain to which the specified controller belongs.
9. **SSL** – Indicate whether/not the controller used for metrics collection is SSL-enabled. By default, this flag is set to **Yes**.
10. **REPORT BY DELIVERY GROUP** – If you want the results of this test to be grouped by delivery group then set this flag to **Yes**. In this case therefore, the delivery groups containing the server OS machines will be the primary descriptors of this test; expanding them will reveal the secondary descriptors – i.e., the server OS machines in each delivery group. If you want the results of this test to be indexed only by the names of the server OS machines, then set this flag to **No**.
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

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td>Power state:</td><td>Indicates the current power state of this server OS machine.</td><td></td><td>The values this measure can report and their corresponding numeric values are listed in then table below:
<table><tr><th>Measure Value</th><th>Numeric Value</th></tr><tr><td>Unknown</td><td>0</td></tr><tr><td>Unavailable</td><td>1</td></tr><tr><td>Off</td><td>2</td></tr><tr><td>On</td><td>3</td></tr><tr><td>Suspended</td><td>4</td></tr><tr><td>Turning on</td><td>5</td></tr><tr><td>Turning Off</td><td>6</td></tr><tr><td>Suspending</td><td>7</td></tr><tr><td>Resuming</td><td>8</td></tr><tr><td>Unmanaged</td><td>9</td></tr></table>
Using the detailed diagnosis of the Power state measure you can view the complete configuration details of the server OS machine.
Note:
By default, this measure reports the Measure Values in the table above to indicate the power state of a server OS machine. However, in the graph of this measure, the same will be represented using the corresponding numeric equivalents only.</td></tr>
<tr><td>Maintenance mode:</td><td>Indicates whether/not this machine is in the maintenance mode currently.</td><td></td><td>The values this measure can report and their corresponding numeric values are listed in then table below:</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>Off</td><td>0</td></tr>
<tr><td>On</td><td>1</td></tr>
</table>
Note:
By default, this measure reports the Measure Values in the table above to indicate whether/not a server OS machine is in the maintenance mode. However, in the graph of this measure, the same will be represented using the corresponding numeric equivalents only.
</td></tr>
<tr><td>Pending image update:</td><td>Indicates whether/not image updates are pending on this machine.</td><td></td><td>The values this measure can report and their corresponding numeric values are listed in then table below:
<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 Measure Values in the table above to indicate whether/not image updates are pending on this server OS machine. However, in the graph of this measure, the same will be represented using the corresponding numeric equivalents only.
</td></tr>
<tr><td>Is this physical machine?:</td><td>Indicates whether this server OS machine is a physical or virtual machine.</td><td></td><td>The values this measure can report and their corresponding numeric values are listed in then table below:
<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>
</td></tr>
</table>

Measurement	Description	Measurement Unit	Interpretation
			Note: By default, this measure reports the **Measure Value**s in the table above to indicate whether/not a server OS machine is a physical machine. However, in the graph of this measure, the same will be represented using the corresponding numeric equivalents only.
Total sessions:	Indicates the total number of user sessions on this server OS machine.	Number	This is a good indicator of the current session load on a server OS machine. Compare the value of this measure across machines to know which machine is overloaded with sessions.
Load evaluator index:	Indicates the load evaluator index of this machine.	Percent	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. 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 in the site.
CPU:	Indicates the CPU load	Percent	A high value is indicative of excessive

Measurement	Description	Measurement Unit	Interpretation
	evaluator index of this server OS machine.		CPU usage by the machine over time.
Memory:	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:	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 count:	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.

Using the detailed diagnosis of the *Power state* measure you can view the details of the server OS machine such as the IP address, DNS name, OS of the machine, the server hosting the machine, and the current status of that machine.

Shows the list of server machines

MACHINE NAME	DNS NAME	IP ADDRESS	OS	VDA VERSION	HOSTED MACHINE NAME	HOSTING SERVER NAME	FAILURE TYPE	FAILURE REASON	FAILURE TIME	MAINTENANCE MODE
Sep 26, 2014 10:52:35										
CITRIX\CTX-EXCL3	CTX-EXCL3.Citrix.eginnovations.com	192.168.8.126	Windows 2008 R2 Service Pack 1	7.0.0.3018	Win2K8R2-EXCL3 [8.126]	newxenserver61(10.165)	-	-	-	Off

Figure 2.12: The detailed diagnosis of the Power state measure

2.5.4 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 broker in a Citrix XA/XD Site 7.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for every catalog on each broker configured within a site

Configurable parameters for the test

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. **DOMAIN**, **USERNAME** and **PASSWORD** – To connect to a delivery controller in a site and pull out metrics from it, the eG agent requires **Farm Administrator** rights. In order to configure the eG agent with **Farm Administrator** privileges, specify the **DOMAIN** to which the target controller belongs and enter the credentials of a user who has the **Farm Administrator** rights in the **USERNAME** and **PASSWORD** text boxes. This user should also be assigned the **Allow log on locally** privilege on the Citrix XA/XD Site 7.x host. The steps for assigning the **Allow log on locally** privilege are explained in the Section **2.1**.
5. **CONFIRM PASSWORD** – Confirm the **PASSWORD** by retyping it here.
6. **REPORT BY MACHINE TYPE** – If you want the results of this test to be grouped by machine type – i.e., grouped into **Desktop OS Machines** and **Server OS Machines** – then set this flag to **Yes**. If not, 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
Allocation type:	Indicates the allocation type of the machines	Number	This measure can report any one of the following values:

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td>available in this catalog.</td><td></td><td>

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>
<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</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></td><td></td><td>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 values that correspond to the above mentioned 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</td></tr>
</table>

Measurement	Description	Measurement Unit	Interpretation
			measure will be represented using their corresponding numeric equivalents – i.e., 0 or 1.
Entitled machines used in delivery groups:	Indicates the number of assigned machines (to users) in this catalog that are within delivery groups.	Number	
Entitled machines available for delivery groups:	Indicates the number of machines in this catalog that are available to users within delivery groups.	Number	
Machines not entitled available for delivery groups:	Indicates the number of machines within the delivery groups that are not yet assigned to users.	Number	
Machines not entitled used in delivery groups:	Indicates the number of unassigned machines in this catalog within the delivery groups but are still used in the pool.	Number	
Machines used in delivery groups:	Indicates the number of machines in this catalog that are within delivery groups.	Number	
Total machines in catalog:	Indicates the total number of machines in this catalog.	Number	

The detailed diagnosis of the *Allocation type* measure if enabled, lists the catalog to which the machine belongs, the machine type, the number of sessions supported by the machine i.e, either Single session or Multi session, the location used for storing user data, the provisioning type and the scopes associated with the chosen catalog.

Shows the Machine Catalog details

CATALOG	DESCRIPTION	MACHINE TYPE	SESSION SUPPORT	USER DATA	PROVISIONING TYPE	PVS ADDRESS	PVS DOMAIN	SCOPES
Sep 26, 2014 10:49:23								
Sales-Desktop-Catalog	XenDesktop	Desktop OS Machines	Single Session	Personal vDisk	Machine Creation Services	-	-	-

Figure 2.13: The detailed diagnosis of the Allocation type measure

2.6 The Users Layer

Use the tests mapped to this layer to monitor user logons to the broker, assess user load, capture bottlenecks in the logon process, and detect user connection failures.

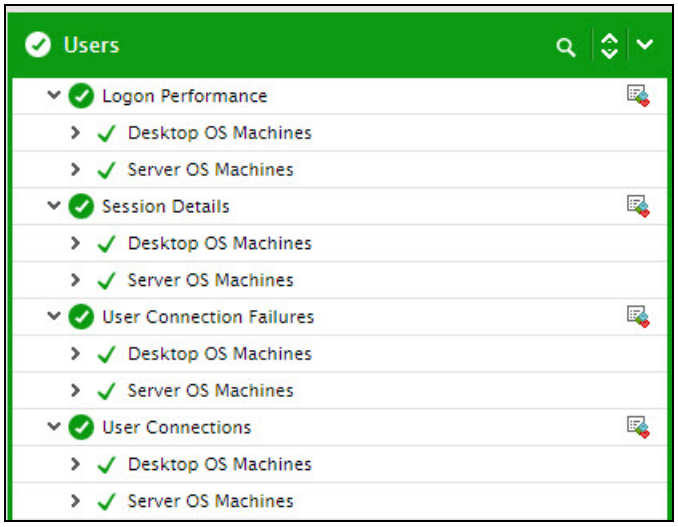

Figure 2.14: The tests mapped to the Users layer

2.6.1 Logon Performance Test

The process of a user logging into a desktop/server OS machine managed by a XenDesktop Broker is complex. First, the user's login credentials are authenticated. Then, the corresponding user profile is identified and loaded. Next, group policies are applied and logon scripts are processed to setup the user environment. Then, a HDX connection is established with the VM, subsequent to which, the VM starts and hands off keyboard and mouse control to the user. In the meantime, additional processing may take place for a user – say, applying system profiles, creating new printers for the user, and so on. A slowdown in any of these steps can significantly delay the logon process for a user and may adversely impact the logins for other users who may be trying to access desktops/applications at the same time. Hence, if a user complains that he/she is unable to access an application/desktop, administrators must be able to rapidly isolate exactly where the logon process is stalling and for which user.

The **Logon Performance** test tracks user connections to each delivery group configured in a site, measures the average time taken for users to access desktops/applications delivered by each group, isolates the group to which user logins are slow, and accurately pinpoints where the login process is bottlenecked. Detailed diagnostics provided by this test point to the precise user who is experiencing the slowness.

Target of the test : A broker in a Citrix XA/XD Site 7.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for each delivery group configured in the Citrix XA/XD Site 7.x

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. **CONTROLLER IP ADDRESS** – Specify the IP address of the delivery controller (i.e., broker) in the site with which the eG agent should communicate for collecting performance metrics.
5. **CONTROLLER PORT** – Specify the port number of the delivery controller (i.e., broker) in the site with which the eG agent should communicate for collecting performance metrics.
6. **USERNAME** and **PASSWORD** – To connect to a delivery controller and pull out metrics from it, the eG agent requires **Farm Administrator** rights. In order to configure the eG agent with **Farm Administrator** privileges, specify the credentials of the **Farm Administrator** in the **USERNAME** and **PASSWORD** text boxes. This user should also be assigned the **Allow log on locally** privilege on the Citrix XA/XD Site 7.x host. The steps for assigning the **Allow log on locally** privilege are explained in the Section **2.1**.
7. **CONFIRM PASSWORD** – Confirm the **PASSWORD** by retyping it here.
8. **FULLY QUALIFIED DOMAIN NAME** – Here, specify the fully-qualified name of the domain to which the specified controller belongs.
9. **SSL** – Indicate whether/not the controller used for metrics collection is SSL-enabled. By default, this flag is set to **Yes**.
10. **REPORT BY MACHINE TYPE** – If you want the results of this test to be grouped by machine type then set this flag to **Yes**. In this case therefore, the machine types (desktop or server OS machines) will be the primary descriptors of this test; expanding them will reveal the secondary descriptors – i.e., the delivery groups containing machines of each type. If you want the results of this test to be indexed only by the names of delivery groups, then set this flag to **No**.
11. **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.
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

Measurement	Description	Measurement Unit	Interpretation
Average logon duration:	Indicates the average time taken for users to login to desktops/applications offered by this delivery group.	Secs	If this measure reports a high value consistently, it could indicate a slowdown in the logon process. You can use the detailed diagnosis of this measure to understand the logon experience of each user to the delivery group, identify that user who took the maximum time to login, and accurately isolate where he/she experienced slowness.
Logons:	Indicates the number of users who recently logged into desktops/applications delivered by this delivery group.	Number	This is a good indicator of the current user load on a delivery group.
Brokering duration:	Indicates time taken to complete the process of brokering sessions to this deliver group.	Secs	A high value indicates that brokering is taking a long time. If the *Average logon duration* is very high, you may want to compare the value of this measure with that of the *Time taken for starting VM, HDX connection duration, Authentication time, GPOs duration, Logon scripts duration, Profile load time, and Interactive session duration* measures to know where exactly the user logon process slowed down – is it during authentication? Is it during brokering?

Measurement	Description	Measurement Unit	Interpretation
			Is it when establishing the HDX connection? Is it when applying GPOs? Is it during logon scripts execution? Is it while loading user profiles? Is it when starting the VM? Or is it when handing over control to the user?
Time taken for starting VM:	Indicates the time taken for starting the machines in this delivery group.	Secs	A high value indicates that machines are taking too long to startup. If the *Average logon duration* is very high, you may want to compare the value of this measure with that of the *Brokering duration, HDX connection duration, Authentication time, GPOs duration, Logon scripts duration, Profile load time, and Interactive session duration* measures to know where exactly the user logon process slowed down – is it during authentication? Is it during brokering? Is it when establishing the HDX connection? Is it when applying GPOs? Is it during logon scripts execution? Is it while loading user profiles? Is it when starting the VM? Or is it when handing over control to the user?
HDX connection duration:	Indicates the time taken to complete the steps required for setting up the HDX connection from the client to the machines in this delivery group.	Secs	A high value indicates that HDX connections are taking time to be established. If the *Average logon duration* is very high, you may want to compare the value of this measure with that of the *Brokering duration, Time taken for starting VM, Authentication time, GPOs duration, Logon scripts duration, Profile load time, and*

Measurement	Description	Measurement Unit	Interpretation
			Interactive session duration measures to know where exactly the user logon process slowed down - is it during authentication? Is it during brokering? Is it when establishing the HDX connection? Is it when applying GPOs? Is it during logon scripts execution? Is it while loading user profiles? Is it when starting the VM? Or is it when handing over control to the user?
Authentication time:	Indicates the time time taken to authenticate remoe sessions to the machines in this delivery group.	Secs	A high value indicates authentication delays. If the *Average logon duration* is very high, you may want to compare the value of this measure with that of the *Brokering duration, Time taken for starting VM, HDX connection duration, GPOs duration, Logon scripts duration, Profile load time, and Interactive session duration* measures to know where exactly the user logon process slowed down – is it during authentication? Is it during brokering? Is it when establishing the HDX connection? Is it when applying GPOs? Is it during logon scripts execution? Is it while loading user profiles? Is it when starting the VM? Or is it when handing over control to the user?
GPOs duration:	Indicates the time taken to apply group policy settings on the machines in this delivery group.	Secs	A high value indicates that GPO application is taking time. If the *Average logon duration* is very high, you may want to compare the value of this measure with that of the

Measurement	Description	Measurement Unit	Interpretation
			Brokering duration, Time taken for starting VM, HDX connection duration, Authentication time, Logon scripts duration, Profile load time, and Interactive session duration measures to know where exactly the user logon process slowed down – is it during authentication? Is it during brokering? Is it when establishing the HDX connection? Is it when applying GPOs? Is it during logon scripts execution? Is it while loading user profiles? Is it when starting the VM? Or is it when handing over control to the user?
Logon scripts duration:	Indicates the time taken for logon scripts to be executed on the machines in this delivery group.	Secs	A high value indicates that logon script execution is taking time. If the *Average logon duration* is very high, you may want to compare the value of this measure with that of the *Brokering duration, Time taken for starting VM, HDX connection duration, Authentication time, GPOs duration, Profile load time, and Interactive session duration* measures to know where exactly the user logon process slowed down – is it during authentication? Is it during brokering? Is it when establishing the HDX connection? Is it when applying GPOs? Is it during logon scripts execution? Is it while loading user profiles? Is it when starting the VM? Or is it when handing over control to the user?
Profile load time:	Indicates the time taken by the logon process to load the profile of the users to this	Secs	A high value indicates that profiles are taking too long to load.

Measurement	Description	Measurement Unit	Interpretation
	delivery group.		If the *Average logon duration* is very high, you may want to compare the value of this measure with that of the *Brokering duration, Time taken for starting VM, HDX connection duration, Authentication time, GPOs duration, Logon scripts duration, and Interactive session duration* measures to know where exactly the user logon process slowed down – is it during authentication? Is it during brokering? Is it when establishing the HDX connection? Is it when applying GPOs? Is it during logon scripts execution? Is it while loading user profiles? Is it when starting the VM? Or is it when handing over control to the user?
Interactive session duration:	Indicates the time taken by the logon process to handoff keyboard and mouse control to the users to this delivery group.	Secs	A high value indicates delays in handing off keyboard and mouse control to users. If the *Average logon duration* is very high, you may want to compare the value of this measure with that of the *Brokering duration, Time taken for starting VM, HDX connection duration, Authentication time, GPOs duration, Logon scripts duration, and Profile load time* measures to know where exactly the user logon process slowed down – is it during authentication? Is it during brokering? Is it when establishing the HDX connection? Is it when applying GPOs? Is it during logon scripts execution? Is it while loading user profiles? Is it when starting the VM? Or is it when handing over control to the user?

Measurement	Description	Measurement Unit	Interpretation
Interactive session duration:	Indicates the time taken by the logon process to handoff keyboard and mouse control to this user.	Secs	A high value indicates delays in handing off keyboard and mouse control to users. If the *Average logon duration* is very high, you may want to compare the value of this measure with that of the *Brokering duration, Time taken for starting VM, HDX connection duration, Authentication time, GPOs duration, Logon scripts duration, and Profile load time* measures to know where exactly the user logon process slowed down – is it during authentication? Is it during brokering? Is it when establishing the HDX connection? Is it when applying GPOs? Is it during logon scripts execution? Is it while loading user profiles? Is it when starting the VM? Or is it when handing over control to the user?

2.6.2 Session Details Test

By tracking sessions to each delivery group configured on a site, administrators can not only assess the load on the delivery groups, but can also quickly identify problematic sessions – these could be sessions that are disconnected, sessions that are in an Unknown state, sessions that are reconnecting for some reason. This is what the **Session Details** test does! This test monitors the user sessions to each delivery group in a site, points administrators to overloaded groups, and also reports the status of sessions to each group, so that problem sessions can be isolated and their problems can be investigated.

Target of the test : A broker in a Citrix XA/XD Site 7.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for each delivery group configured in the Citrix XA/XD Site 7.x

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. **CONTROLLER IP ADDRESS** – Specify the IP address of the delivery controller (i.e., broker) in the site with which the eG agent should communicate for collecting performance metrics.
5. **CONTROLLER PORT** – Specify the port number of the delivery controller (i.e., broker) in the site with which the eG agent should communicate for collecting performance metrics.
6. **USERNAME** and **PASSWORD** – To connect to a delivery controller and pull out metrics from it, the eG agent requires **Farm Administrator** rights. In order to configure the eG agent with **Farm Administrator** privileges, specify the credentials of the **Farm Administrator** in the **USERNAME** and **PASSWORD** text boxes. This user should also be assigned the **Allow log on locally** privilege on the Citrix XA/XD Site 7.x host. The steps for assigning the **Allow log on locally** privilege are explained in the Section **2.1**.
7. **CONFIRM PASSWORD** – Confirm the **PASSWORD** by retyping it here.
8. **FULLY QUALIFIED DOMAIN NAME** – Here, specify the fully-qualified name of the domain to which the specified controller belongs.
9. **SSL** – Indicate whether/not the controller used for metrics collection is SSL-enabled. By default, this flag is set to **Yes**.
10. **REPORT BY MACHINE TYPE** – If you want the results of this test to be grouped by machine type then set this flag to **Yes**. In this case therefore, the machine types (desktop or server OS machines) will be the primary descriptors of this test; expanding them will reveal the secondary descriptors – i.e., the delivery groups containing machines of each type. If you want the results of this test to be indexed only by the names of delivery groups, then set this flag to **No**.
11. **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**.
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

Measurement	Description	Measurement Unit	Interpretation
Active sessions:	Indicates the number of user sessions that are currently active on this delivery group.	Number	This is a good indicator of the current session load on a delivery group. A consistent zero value however could indicate a connection issue. You can compare the value of this measure across delivery groups to kow which delivery group is handling the maximum number of sessions currently. To determine the details of the currently active sessions, use the detailed diagnosis of this measure.
Connected sessions:	Indicates the number of sessions that are currently connected to this delivery group.	Number	Use the detailed diagnosis of this measure to view the details of connected sessions.
Disconnected sessions:	Indicates the number of sessions that are currently disconnected from this delivery group.	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 that are reconnecting with this delivery group soon after a disconnect.	Number	
Preparing sessions:	Indicates the number of sessions to this delivery group that are currently in the Preparing state.	Number	
Non- brokered sessions:	Indicates the number of user sessions that are not	Number	

Measurement	Description	Measurement Unit	Interpretation
	brokered by the machines managed by this delivery group.		
Unknown sessions:	Indicates the number of sessions to this delivery group that are currently in Unknown state.	Number	
Other sessions:	Indicates the number of sessions to this delivery group that are currently in Other state.	Number	
Pending sessions:	Indicates the number of sessions to this delivery group that are currently pending.	Number	

2.6.3 User Connection Failures

If a user complains that his/her connections to a desktop/application failed, then adinistrators must be able to quickly detect the failure and accurately zero-in on the reason for the failure, so that the problem can be fixed and the user connection can be restored. The **User Connection Failures** test helps administrators do just that! This test monitors the user connections to each delivery group in a site, promptly detects connection failures, and accurately indicates what caused the failure – is it due to a problem at the client side? is it owing to configuration errors? is it because of machine failures? is it due to the exhaustion of delivery group capacity? Or is it due to the absence of a license?

Target of the test : A Citrix XenDesktop Director

Agent deploying the test : An internal agent

Outputs of the test : One set of results for each delivery group configured in the XenDesktop 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** – The port number at which the specified **HOST** listens to. By default, this is 80.

4. **CONTROLLER IP ADDRESS** – Specify the IP address of the delivery controller (i.e., broker) in the site with which the eG agent should communicate for collecting performance metrics.
5. **CONTROLLER PORT** – Specify the port number of the delivery controller (i.e., broker) in the site with which the eG agent should communicate for collecting performance metrics.
6. **USERNAME** and **PASSWORD** – To connect to a delivery controller and pull out metrics from it, the eG agent requires **Farm Administrator** rights. In order to configure the eG agent with **Farm Administrator** privileges, specify the credentials of the **Farm Administrator** in the **USERNAME** and **PASSWORD** text boxes. This user should also be assigned the **Allow log on locally** privilege on the Citrix XA/XD Site 7.x host. The steps for assigning the **Allow log on locally** privilege are explained in the Section **2.1**.
7. **CONFIRM PASSWORD** – Confirm the **PASSWORD** by retyping it here.
8. **FULLY QUALIFIED DOMAIN NAME** – Here, specify the fully-qualified name of the domain to which the specified controller belongs.
9. **SSL** – Indicate whether/not the controller used for metrics collection is SSL-enabled. By default, this flag is set to **Yes**.
10. **REPORT BY MACHINE TYPE** – If you want the results of this test to be grouped by machine type then set this flag to **Yes**. In this case therefore, the machine types (desktop or server OS machines) will be the primary descriptors of this test; expanding them will reveal the secondary descriptors – i.e., the delivery groups containing machines of each type. If you want the results of this test to be indexed only by the names of delivery groups, then set this flag to **No**.
11. **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**.
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

Measurement	Description	Measurement Unit	Interpretation
Client connection failures:	Indicates the number of connections to this delivery group that failed due to a problem at the client side.	Number	The value of this measure indicates the number of connection failures that occurred due to the inability of the client side to complete the session connection; for example, connection timed out, server was not reachable.
Configuration errors:	Indicates the number of connections to this delivery group that failed due to configuration errors.	Number	Connection failures can also occur when administrators change the configuration of the broker; for instance, a failure may occur when administrators put a delivery group or a machine in maintenance mode.
Machine failures:	Indicates the number of connections to this delivery group that failed due to machine failures.	Number	This refers to connections that failed because the machines that need to launch the sessions itself failed. For probable reasons, refer to the measures of the **Failed Machines** test.
Unavailable capacity:	Indicates the number of connections to this delivery group that failed because the configured capacity of the machines was consumed.	Number	This refers to failures that occurred due to the configured capacity of a particular delivery group having been completely consumed. For example, too many users logged into a Server Desktop OS delivery group or a user accessing a Pooled Random delivery group once all the machines in the delivery group are already assigned to other users.
Unavailable licenses:	Indicates the number of connections to this delivery group that failed because of the absence of a license.	Number	These are failures that occur due to the inability of the delivery controller to acquire a license from the license server to launch a session.

2.6.4 User Connections Test

This test reports the number of users who recently connected with the machines/applications in each delivery group configured in the broker site. Sudden spikes in user connections to a delivery group can thus be identified.

Target of the test : A Citrix XenDesktop Director

Agent deploying the test : An internal agent

Outputs of the test : One set of results for each delivery group configured in the XenDesktop 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** – The port number at which the specified **HOST** listens to. By default, this is 80.
4. **CONTROLLER IP ADDRESS** – Specify the IP address of the delivery controller (i.e., broker) in the site with which the eG agent should communicate for collecting performance metrics.
5. **CONTROLLER PORT** – Specify the port number of the delivery controller (i.e., broker) in the site with which the eG agent should communicate for collecting performance metrics.
6. **USERNAME** and **PASSWORD** – To connect to a delivery controller and pull out metrics from it, the eG agent requires **Farm Administrator** rights. In order to configure the eG agent with **Farm Administrator** privileges, specify the credentials of the **Farm Administrator** in the **USERNAME** and **PASSWORD** text boxes. This user should also be assigned the **Allow log on locally** privilege on the Citrix XA/XD Site 7.x host. The steps for assigning the **Allow log on locally** privilege are explained in the Section **2.1**.
7. **CONFIRM PASSWORD** – Confirm the **PASSWORD** by retyping it here.
8. **FULLY QUALIFIED DOMAIN NAME** – Here, specify the fully-qualified name of the domain to which the specified controller belongs.
9. **SSL** – Indicate whether/not the controller used for metrics collection is SSL-enabled. By default, this flag is set to **Yes**.
10. **REPORT BY MACHINE TYPE** – If you want the results of this test to be grouped by machine type then set this flag to **Yes**. In this case therefore, the machine types (desktop or server OS machines) will be the primary descriptors of this test; expanding them will reveal the secondary descriptors – i.e., the delivery groups containing machines of each type. If you want the results of this test to be indexed only by the names of delivery groups, then set this flag to **No**.
11. **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**.

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

Measurement	Description	Measurement Unit	Interpretation
New connections:	Indicates the number of new connections to this delivery group since the last measurement period.	Number	Use the detailed diagnosis of this measure to view the details of each new connection.

2.6.5 User Experience by Delivery Groups Test

The Citrix Excalibur environment is a shared environment in which multiple users may connect to a Citrix XenDesktop Site and access a wide variety of applications. When server resources are shared, excessive resource utilization by a single user could impact the performance for other users. Therefore, continuous monitoring of the activities of each and every user on the server is critical. Towards this end, the **User Experience by Delivery Groups** test assesses the traffic between the user terminal and the server, and also monitors the resources taken up by a user's session on the server. The results of this test can be used in troubleshooting and proactive monitoring. For example, when a user reports a performance problem, an administrator can quickly check the bandwidth usage of the user's session, the CPU/memory/disk usage of this user's session as well as the resource usage of other user sessions. The administrator also has access to details on what processes/applications the user is accessing and their individual resource usage. This information can be used to spot any offending processes/ applications.

Target of the test : A Citrix XA/XD Site 7.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for each user to the XenDesktop broker in the site

Configurable parameters for the test

1. **TEST PERIOD** - How often this test needs to be executed.

2. **HOST** - The host name of the server for which the test is to be configured.
3. **PORT** – The port number at which the specified **HOST** listens to. By default, this is 1494.
4. **SHOW PUBLISHED APPS** - Using this flag, you can indicate whether the test should monitor published applications alone or all applications running on the server. By default, this flag is set to **No**, indicating that all applications will be monitored by default. To monitor only published applications, you need to set this flag to Yes. **However, prior to changing the flag status to 'Yes', you need to make sure that a 'Citrix XenDesktop Broker' component is also managed by the eG Enterprise system and is reporting metrics**.
5. **SHOW PUBLISHED DESKTOPS** - By default, this flag is set to **No**. If this flag is set to **Yes**, then the detailed diagnosis of this test will list the resource-intensive processes/applications accessed by a user along with the exact published desktop that has been used by the user to access the application. **Note that, in the detailed diagnosis, the 'host name' of the monitored server will be displayed as the 'published desktop name'**.
6. **REPORT BY DOMAIN NAME** - By default, this flag is set to **Yes**. This implies that by default, the detailed diagnosis of this test will display the domainname\username of each user who accessed an application on the server. This way, administrators will be able to quickly determine which user logged into the server from which domain. If you want the detailed diagnosis to display only the username of these users, set this flag to **No**.
7. **ENABLE BROWSER MONITORING** - By default, this flag is set to **No**, indicating that the eG agent does not monitor browser activity on the XenDesktop Site. If this flag is set to **Yes**, then, whenever one/more IE (Internet Explorer) browser instances on the XenDesktop Site server are accessed, the detailed diagnosis of the User sessions measure will additionally reveal the URL being accessed via each IE instance and the resources consumed by every URL. Armed with this information, administrators can identify the web sites that are responsible for excessive resource usage by an IE instance.
8. **COLLECT EXTENDED METRICS** - By default, this parameter is set to **No**, indicating that the test will report only a standard set of user experience metrics. To enable the test to collect additional metrics per user, set this flag to **Yes**.
9. **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 NT/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**. **On the other hand, when monitoring systems that are operating on any other flavor of Windows (say, Windows 2003/XP/2008/7/Vista/12), the USEWMI flag should always be set to 'Yes'**.
10. **SHOW ALL DESKTOP PROCESSES** - Using this flag, you can indicate whether the test should report top resource-intensive processes alone or all processes running in the background when the user accesses an application. By default, this flag is set to **No**, indicating that this test will report only top three resource-intensive processes e.g. CPU, Memory and IO Reads processes from the desktop OS processes. This helps the administrator optimize the database. To report all the processes, you need to set this flag to **Yes**.
11. **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**.

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

Measurement	Description	Measurement Unit	Interpretation
Average CPU usage user's sessions:	The CPU utilization for a session is the percentage of time that all of the threads/processes of a user session used the processor to execute instructions. If a user is connected via multiple sessions, the value reported is the sum of all cpu utilizations across all the sessions.	Percent	This value indicates the percentage of Cpu resources that are used by a specific user. Excessive CPU usage by a user can impact performance for other users. Check the detailed diagnosis to view the offending processes/applications.
Average handles used by user's sessions:	Indicates the total number of handles being currently held by all processes of a user.	Number	A consistent increase in the handle count over a period of time is indicative of malfunctioning of programs. Compare this value across users to see which user is using a lot of handles. Check detailed diagnosis for further information.
Total audio bandwidth input:	Indicates the bandwidth used while transmitting	Kbps	Comparing these values across users

Measurement	Description	Measurement Unit	Interpretation
	sound/audio to this user.		will reveal which user is sending/receiving bandwidth- intensive sound/audio files over the ICA channel. To minimize bandwidth consumption, you may want to consider disabling client audio mapping.
Total audio bandwidth output:	Indicates the bandwidth used while receiving sound/audio from this user.	Kbps	
Total input bandwidth:	Indicates the average bandwidth used for client to server communications for all the sessions of a user.	Kbps	
Total output bandwidth:	Indicates the average bandwidth used for server to client communications for all the sessions of a user.	Kbps	
Total COM bandwidth input:	Indicates the bandwidth used when sending data to this user's COM port.	Kbps	Comparing these values across users will reveal which user's COM port is sending/receiving bandwidth- intensive data over the ICA channel. **These measures will be reported only if the COLLECT EXTENDED METRICS flag is set to 'Yes'.**
Total COM bandwidth output:	Indicates the bandwidth used when receiving data from this user's COM port.	Kbps	
Total input compression:	Indicates the average compression ratio for client to server traffic for all the sessions of a user.	Number	
Total output compression:	Indicates the average compression ratio for server to client traffic for all the sessions of a user.	Number	
Total drive bandwidth input:	Indicates the bandwidth used when this user	Kbps	Comparing the values of these measures across users will reveal

Measurement	Description	Measurement Unit	Interpretation
	performs file operations on the mapped drive on the virtual desktop.		which user is performing bandwidth-intensive file operations over the ICA channel. If bandwidth consumption is too high, you may want to consider disabling client drive mapping on the client device. Client drive mapping allows users logged on to a virtual desktop from a client device to access their local drives transparently from the ICA session. Alternatively, you can conserve bandwidth by even refraining from accessing large files with client drive mapping over the ICA connection. **These measures will be reported only if the COLLECT EXTENDED METRICS flag is set to 'Yes'**.
Total drive bandwidth output:	Indicates the bandwidth used when the virtual desktop performs file operations on the client's drive.	Kbps	
Total HDX media stream for flash data bandwidth input:	Indicates the bandwidth used from this user to virtual desktop for flash data traffic.	Kbps	Comparing the values of these measures across users will reveal which user has been transmitting/receiving bandwidth-intensive flash data.
Total HDX media stream for flash data bandwidth output:	Indicates the bandwidth used from the virtual desktop to this user for flash data traffic.	Kbps	
Total PN bandwidth input:	Indicates the bandwidth used from this user to virtual desktop by Program Neighborhood to obtain application set details.	Kbps	Comparing the values of these measures across users will reveal which user has been transmitting/receiving bandwidth-intensive PN traffic. **These measures will be reported only if the COLLECT EXTENDED METRICS flag is set to 'Yes'.**
Total PN bandwidth output:	Indicates the bandwidth, used from the virtual desktop to this user by Program Neighborhood to obtain application set details.	Kbps	

Measurement	Description	Measurement Unit	Interpretation
Average I/O reads for user's sessions:	Indicates the rate of I/O reads done by all processes being run by a user.	Kbps	These metrics measure the collective I/O activity (which includes file, network and device I/O's) generated by all the processes being executed by a user. When viewed along with the system I/O metrics reported by the DiskActivityTest, these measures help you determine the network I/O. Comparison across users helps identify the user who is running the most I/O-intensive processes. Check the detailed diagnosis for the offending processes/applications.
Average I/O writes for user's sessions:	Indicates the rate of I/O writes done by all processes being run by a user.	Kbps	
Average screen refresh latency:	Indicates the average client latency for a user. The value reported is the average of the latencies for all the current sessions of a user.	Secs	**These measures will be reported only if the COLLECT EXTENDED METRICS flag is set to 'Yes'**.
Average screen refresh latency - deviation:	The latency deviation represents the difference between the minimum and maximum measured latency values for a session. The value reported is the average of the latency deviations for all the current sessions of a user.	Secs	Ideally, the deviation in latencies over a session should be minimum so as to provide a consistent experience for the user. **These measures will be reported only if the COLLECT EXTENDED METRICS flag is set to 'Yes'**.
Average screen refresh latency - last:	Represents the average client latency for the last request from a user. The latency is measured by the Citrix XenDesktop Apps server based on packets sent to and from each client during a session - this includes network delay plus server side	Secs	A consistently high latency may be indicative of performance degradations with the Citrix XenDesktop Apps servers. Possible reasons for an increase in latency could be increased network delays, network congestion, server slow- down, too many simultaneous users on the server etc. Typically latencies on a erver will be below 5 secs.

Measurement	Description	Measurement Unit	Interpretation
	processingdelays. The value reported is the average of the last latencies for all the current sessions of a user.		**These measures will be reported only if the COLLECT EXTENDED METRICS flag is set to 'Yes'.**
Average memory usage for user's sessions:	This value represents the ratio of the resident set size of the memory utilized by the user to the physical memory of the host system, expressed as a percentage. If a user is connected via multiple sessions, the value reported is the sum of all memory utilizations across all the sessions.	Percent	This value indicates the percentage of memory resources that are used up by a specific user. By comparing this value across users, an administrator can identify the most heavy users of the Citrix XenDesktop Apps server. Check the detailed diagnosis to view the offending processes/applications.
Total user sessions:	Indicates the current number of sessions for a particular user.	Number	A value of 0 indicates that the user is not currently connected to the Citrix XenDesktop Apps server. Use the detailed diagnosis of this measure to know the details of the sessions.
Total input line speed:	Indicates the average line speed from the client to the server for all the sessions of a user.	Kbps	
Total output line speed:	Indicates the average line speed from the server to the client for all the sessions of a user.	Kbps	
Total printer bandwidth input:	Indicates the bandwidth used when this user prints to a desktop printer over the ICA channel.	Kbps	Comparing the values of these measures across users will reveal which user is issuing bandwidth-intensive print commands over the ICA channel. If bandwidth consumption is

Measurement	Description	Measurement Unit	Interpretation
			too high, you may want to consider disabling printing. Alternatively, you can avoid printing large documents over the ICA connection.
Total printer bandwidth output:	Indicates the bandwidth used when the desktop responds to print jobs issued by this user.	Kbps	
Total speed screen data channel bandwidth input:	Indicates the bandwidth used from this user to the virtual desktop for data channel traffic.	Kbps	Comparing the values of these measures across users will reveal which user has been transmitting/receiving bandwidth-intensive data channel traffic. **These measures will be reported only if the COLLECT EXTENDED METRICS flag is set to 'Yes'.**
Total speed screen data channel bandwidth output:	Indicates the bandwidth used from virtual desktop to this user for data channel traffic.	Kbps	
Total HDX media stream for flash v2 data bandwidth input:	Indicates the bandwidth used from this user to virtual desktop for flash v2 data traffic.	Kbps	Comparing the values of these measures across users will reveal which user has been transmitting/receiving bandwidth-intensive flash v2 data. **These measures will be reported only if the COLLECT EXTENDED METRICS flag is set to 'Yes'**.
Total HDX media stream for flash v2 data bandwidth output:	Indicates the bandwidth used from the virtual desktop to this user for flash v2 data traffic.	Kbps	
Average page faults for user's sessions:	Indicates the rate of page faults seen by all processes being run by a user.	Faults/Sec	Page Faults occur in the threads executing in a process. A page fault occurs when a thread refers to a virtual memory page that is not in its working set in main memory. If the page is on the standby list and hence already in main memory, or if the page is in use by another process with whom the page is shared, then the page fault will not cause the page to be fetched from disk. Excessive page faults could result in decreased performance. Compare values across users to figure out which

Measurement	Description	Measurement Unit	Interpretation
			user is causing most page faults.
Average virtual memory of user's sessions:	Indicates the total virtual memory being used by all processes being run by a user.	MB	Comparison across users reveals the user who is being a drain on the virtual memory space.
Average CPU time used by user's sessions:	Indicates the percentage of time, across all processors, this user hogged the CPU.	Percent	The *Average CPU usage user's sessions* measure averages out the total CPU usage of a user on the basis of the number of processors. For instance, if your Citrix XenDesktop Apps server is using an 8- core processor and the total CPU usage of a user across all his/her sessions amounts to 80%, then the value of the *Average CPU usage user's sessions* measure for that user will be 10 % (80/8 processors = 10). This accurately denotes the extent of CPU usage in an environment where load is uniformly balanced across multiple processors. However, in environments where load is not well- balanced, the *Average CPU usage user's sessions* measure may not be an accurate indicator of CPU usage per user. For instance, if a single processor is used nearly 80% of the time by a user, and other 7 processors in the 8-core processor environment are idle, the Average CPU usage user's sessions measure will still report CPU usage as 10%. This may cause administrators to miss out on the fact that the user is actually hogging a particular processor! In such environments therefore, its best to use the this measure! By reporting the total CPU usage of a user across all his/her

Measurement	Description	Measurement Unit	Interpretation
			sessions and across all the processors the target Citrix XenDesktop Apps server supports, this measure serves as the true indicator of the level of CPU usage by a user in dynamic environments. For instance, in the example above, the *Average CPU time used by user's sessions* of the user will be 80% (and not 10%, as in the case of the CPU usage for user's processes measure). A high value or a consistent increase in the value of this measure is hence serious and demands immediate attention. In such situations, use the detailed diagnosis of the *Average CPU usage user's sessions* measure to know what CPU-intensive activities are being performed by the user.
Average output bandwidth usage:	Indicates the percentage HDX bandwidth consumption of this user.	Percent	Compare the value of this measure across users to know which user is consuming the maximum HDX bandwidth.
Average input bandwidth usage for user's sessions:	Indicates the percentage HDX bandwidth consumed by client to server traffic of this user.	Percent	
Total thinWire bandwidth input:	Indicates the bandwidth used from client to server for ThinWire traffic.	Kbps	Typically, ICA traffic is comprised of many small packets, as well as a some large packets. Large packets are commonly generated for initial session screen paints and printing jobs, whereas the ongoing user session is principally comprised of many small packets. For the most part, these small packets are the highest priority ICA data called Thinwire. Thinwire incorporates mouse movements and keystrokes.

Measurement	Description	Measurement Unit	Interpretation
			Compare the value of these measures across users to know which user's keystrokes and mouse movements are generating bandwidth-intensive traffic. **These measures will be reported only if the COLLECT EXTENDED METRICS flag is set to 'Yes'**.
Total thinWire bandwidth output:	Indicates the bandwidth used from server to client for ThinWire traffic.	Kbps	
Total seamless bandwidth input:	Indicates the bandwidth used from client to server for published applications that are not embedded in a session window.	Kbps	Compare the value of these measures across users to know which user is accessing bandwidth- intensive applications that are not in a session window. **These measures will be reported only if the COLLECT EXTENDED METRICS flag is set to 'Yes'**.
Total seamless bandwidth output:	Indicates the bandwidth used from server to client for published applications that are not embedded in a session window.	Kbps	
Total speed screen multimedia acceleration bandwidth input:	Indicates the bandwidth used from this user to virtual desktop for multimedia traffic.	Kbps	Comparing the values of these measures across users will reveal which user has been transmitting/receiving bandwidth-intensive multimedia traffic.
Total speed screen multimedia acceleration bandwidth output:	Indicates the bandwidth used from the virtual desktop to this user for multimedia traffic.	Kbps	
Average frame rate for user's sessions:	Indicates the rate at which the frames are transmitted from the server to the client.	Frames/sec	This measure should be maintanined in a permissible range. A sudden rise or fall of this measure could be a cause of concern.
Total resource shares:	Indicates the total number of resource shares used by this user.	Number	By comparing the value of this measure across users, you can identify the user who is hogging the resources.

Measurement	Description	Measurement Unit	Interpretation
			This measure will be reported only if the COLLECT EXTENDED METRICS flag is set to 'Yes'.
Average framehawk frame rate for user's sessions:	Indicates the rate at which frames are processed by the Framehawk virtual channel, if it is enabled for this user session.	Frames/sec	The Framehawk virtual channel optimizes the delivery of virtual desktops and applications to users on broadband wireless connections, when high packet loss or congestion occurs. **Note:** This measure will report the value 0 if Framehawk is not enabled for a user or if the device from which the user is accessing the application does not support Framehawk.
Average framehawk network bandwidth for user's sessions:	Indicates the bandwidth consumption of this user session when the Framehawk virtual delivery channel is used.	Kbps	This is a good measure of the effectiveness of Framehawk in optimizing the bandwidth usage over the virtual delivery channel. A low value is desired for this measure. **Note:** This measure will report the value 0 if Framehawk is not enabled for a user or if the device from which the user is accessing the application does not support Framehawk.
Average framehawk latency for user's sessions:	Indicates the latency experienced by this user session when the Framehawk virtual delivery channel is used.	Secs	This measure will report the value 0 if Framehawk is not enabled for a user or if the device from which the user is accessing the application does not support Framehawk.
Average framehawk network loss:	Indicates the percentage of packet loss experienced by this user session when the Framehawk virtual delivery channel is used.	Percent	This measure will report the value 0 if Framehawk is not enabled for a user or if the device from which the user is accessing the application does not support Framehawk.

Measurement	Description	Measurement Unit	Interpretation
Average client network latency for user's sessions:	Indicates the latency experienced by this user when transmitting/receiving data over the ICA channel.	Secs	A low value is a sign of the good health of the ICA channel.

2.6.6 User Logon Performance Test

The **Logon Performance** test monitors the user logon process from a delivery group perspective; in other words, it monitors user logins to the desktops/applications in a delivery group, measures the 'aggregate' duration of the login across all users to that group, and thus points to bottlenecks in the user logon process to that group.

The **User Logon Performance** test on the other hand, provides the user-perspective to logon monitoring. In other words, this test tracks each user who logs into a desktop or accesses an application via the XenDesktop broker, reports in real-time the logon experience of that user, and pinpoints where exactly that user's logon slowed down. When a user complaints of delays in accessing his/her virtual desktop, this test will lead administrators straight to what is causing the delay. Detailed diagnositics provided by this test reveal which machines/applications a user is accessing and which delivery group these machines/applications belong to.

Target of the test : A broker in a Citrix XA/XD Site 7.x

Agent deploying the test : An internal agent

Outputs of the test : One set of results for each user to the XenDesktop broker in the 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. **CONTROLLER IP ADDRESS** – Specify the IP address of the delivery controller (i.e., broker) in the site with which the eG agent should communicate for collecting performance metrics.
5. **CONTROLLER PORT** – Specify the port number of the delivery controller (i.e., broker) in the site with which the eG agent should communicate for collecting performance metrics.
6. **USERNAME** and **PASSWORD** – To connect to a delivery controller and pull out metrics from it, the eG agent requires **Farm Administrator** rights. In order to configure the eG agent with **Farm Administrator** privileges, specify the credentials of the **Farm Administrator** in the **USERNAME** and **PASSWORD** text boxes. This user should also be assigned the **Allow log on locally** privilege on the Citrix XA/XD Site 7.x host. The steps for assigning the **Allow log on locally** privilege are explained in

the Section **2.1**.

7. **CONFIRM PASSWORD** – Confirm the **PASSWORD** by retyping it here.
8. **FULLY QUALIFIED DOMAIN NAME** – Here, specify the fully-qualified name of the domain to which the specified controller belongs.
9. **SS**l – Indicate whether/not the controller used for metrics collection is SSL-enabled. By default, this flag is set to **Yes**.
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
Average logon duration:	Indicates the average time taken for this user to login to desktops/access applications.	Secs	If this measure reports a high value consistently, it could indicate a slowdown in the logon process. Compare the value of this measure across users to know which user's logon is taking the longest.
Logons:	Indicates the number of times this user has logged in since the last measurement period	Number	
Brokering duration:	Indicates time taken by this	Secs	A high value indicates that brokering is

Measurement	Description	Measurement Unit	Interpretation
	user to complete the process of brokering sessions.		taking a long time. If the *Average logon duration* is very high, you may want to compare the value of this measure with that of the *Time taken for starting VM, HDX connection duration, Authentication time, GPOs duration, Logon scripts duration, Profile load time, and Interactive session duration* measures to know where exactly the user logon process slowed down – is it during authentication? Is it during brokering? Is it when establishing the HDX connection? Is it when applying GPOs? Is it during logon scripts execution? Is it while loading user profiles? Is it when starting the VM? Or is it when handing over control to the user?
Time taken for starting VM:	Indicates the time taken by the broker to start the machines accessed by this user.	Secs	A high value indicates that machines are taking too long to startup. If the *Average logon duration* is very high, you may want to compare the value of this measure with that of the *Brokering duration, HDX connection duration, Authentication time, GPOs duration, Logon scripts duration, Profile load time, and Interactive session duration* measures to know where exactly the user logon process slowed down – is it during authentication? Is it during brokering? Is it when establishing the HDX connection? Is it when applying GPOs? Is it during logon scripts execution? Is it while loading user profiles? Is it when starting the VM? Or is it when handing over control to the user?

Measurement	Description	Measurement Unit	Interpretation
HDX connection duration:	Indicates the time taken by the broker to complete the steps required for setting up the HDX connection from this user to the machines accessed by the user.	Secs	A high value indicates that HDX connections are taking time to be established. If the *Average logon duration* is very high, you may want to compare the value of this measure with that of the *Brokering duration, Time taken for starting VM, Authentication time, GPOs duration, Logon scripts duration, Profile load time, and Interactive session duration* measures to know where exactly the user logon process slowed down – is it during authentication? Is it during brokering? Is it when establishing the HDX connection? Is it when applying GPOs? Is it during logon scripts execution? Is it while loading user profiles? Is it when starting the VM? Or is it when handing over control to the user?
Authentication time:	Indicates the time taken by the broker to authenticate this user's sessions.	Secs	A high value indicates authentication delays. If the *Average logon duration* is very high, you may want to compare the value of this measure with that of the *Brokering duration, Time taken for starting VM, HDX connection duration, GPOs duration, Logon scripts duration, Profile load time, and Interactive session duration* measures to know where exactly the user logon process slowed down – is it during authentication? Is it during brokering? Is it when establishing the HDX connection? Is it when applying GPOs? Is it during logon scripts execution? Is it while loading user profiles? Is it when starting the VM? Or is it when handing

Measurement	Description	Measurement Unit	Interpretation
			over control to the user?
GPOs duration:	Indicates the time taken to apply group policy settings on the machines accessed by this user.	Secs	A high value indicates that GPO application is taking time. If the *Average logon duration* is very high, you may want to compare the value of this measure with that of the *Brokering duration, Time taken for starting VM, HDX connection duration, Authentication time, Logon scripts duration, Profile load time, and Interactive session duration* measures to know where exactly the user logon process slowed down – is it during authentication? Is it during brokering? Is it when establishing the HDX connection? Is it when applying GPOs? Is it during logon scripts execution? Is it while loading user profiles? Is it when starting the VM? Or is it when handing over control to the user?
Logon scripts duration:	Indicates the time taken for logon scripts to be executed on the machines accessed by this user.	Secs	A high value indicates that logon script execution is taking time. If the *Average logon duration* is very high, you may want to compare the value of this measure with that of the *Brokering duration, Time taken for starting VM, HDX connection duration, Authentication time, GPOs duration, Profile load time, and Interactive session duration* measures to know where exactly the user logon process slowed down – is it during authentication? Is it during brokering? Is it when establishing the HDX connection? Is it when applying GPOs? Is it during logon scripts execution? Is it while loading user profiles? Is it when

Measurement	Description	Measurement Unit	Interpretation
			starting the VM? Or is it when handing over control to the user?
Profile load time:	Indicates the time taken by the logon process to load the profile of this user.	Secs	A high value indicates that profiles are taking too long to load. If the *Average logon duration* is very high, you may want to compare the value of this measure with that of the *Brokering duration, Time taken for starting VM, HDX connection duration, Authentication time, GPOs duration, Logon scripts duration, and Interactive session duration* measures to know where exactly the user logon process slowed down – is it during authentication? Is it during brokering? Is it when establishing the HDX connection? Is it when applying GPOs? Is it during logon scripts execution? Is it while loading user profiles? Is it when starting the VM? Or is it when handing over control to the user?

3

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 XA/XD Site 7.x**. 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.