Monitoring Citrix StoreFront

eG Innovations Product Documentation

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Total Performance Visibility

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Chapter 1: Introduction

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

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

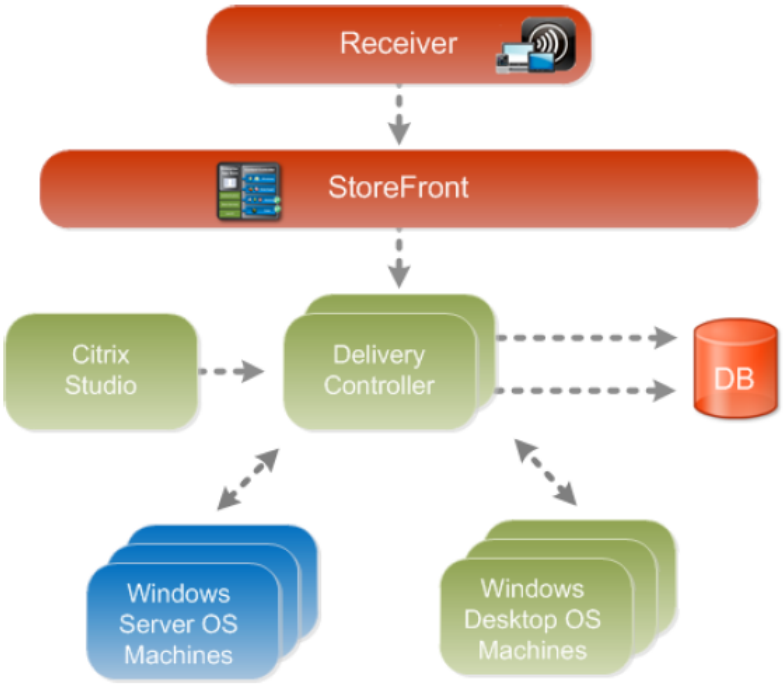

Figure 1.1: The Citrix XenDesktop 7 architecture

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

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

the resources allocated to and the resource usage of hypervisors and the Desktop OS machines operating on them, eG Enterprise offers a specialized monitoring model per hypervisor (such as Citrix XenServer, VMware vSphere, Microsoft Hyper-V, etc.).

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

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

This document deep dives into the Citrix Storefront monitoring model that eG Enterprise offers.

Chapter 2: Administering the eG Manager to work with the Citrix StoreFront server

1. Log into the eG administrative interface.
2. eG Enterprise cannot automatically discover a Citrix StoreFront server. You need to manually add the server using the Add/Modify Components page (see Figure 2.1) that appears when the Infrastructure -> Components -> Add/Modify menu sequence is followed. Remember that components manually added are managed automatically.

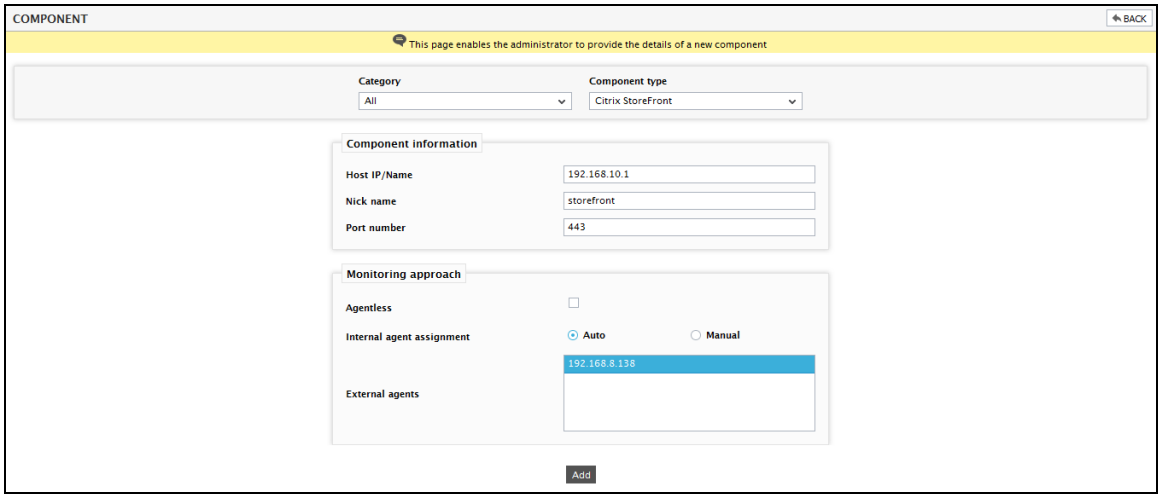

Figure 2.1: Adding the Citrix StoreFront component

3. Specify the **Host IP/Name** and **Nick name** for the Citrix StoreFront component (see Figure 2.1). Then, click on the **Add** button to register the changes. All the tests pertaining to the Citrix Storefront server will be configured automatically.
4. Finally, sign out of the eG administrative interface

Chapter 3: Monitoring Citrix StoreFront

Citrix StoreFront, which is the successor to Citrix Web Interface, authenticates users to XenDesktop sites, XenApp farms, App Controller (SaaS Apps), and VDI-in-a-Box enumerating and aggregating available desktops and applications into stores that users access through Citrix Receiver for Android, iOS, Linux, Windows, Win8/RT or Receiver for Web sites. StoreFront enables next generation features such as:

- Unified StoreFront for XenApp and XenDesktop resources that can also deliver SaaS & Native Mobile applications (through App Controller).
- Simplified Account Provisioning, which enables users to connect to assigned desktops and applications by simply entering their email or server address, or by opening a Provisioning File in Receiver.
- Access from any Receiver with a consistent user experience, including automatic fallback to Receiver for HTML5 on Receiver for Web sites if a native client isn't available locally and can't be installed.
- Synchronization of resource subscriptions across all platforms and devices (Follow-me Apps & Data).
- Cross-farm aggregation and de-duplication, that aggregates and delivers a unique set of applications from multiple farms across different sites.
- Farm-Based Optimal HDX Connection Routing, which enables the use of the nearest NetScaler Gateway for HDX traffic routing independent of the NetScaler Gateway used for initial authentication.

The architecture of the Citrix StoreFront is explained in Figure 3.1.

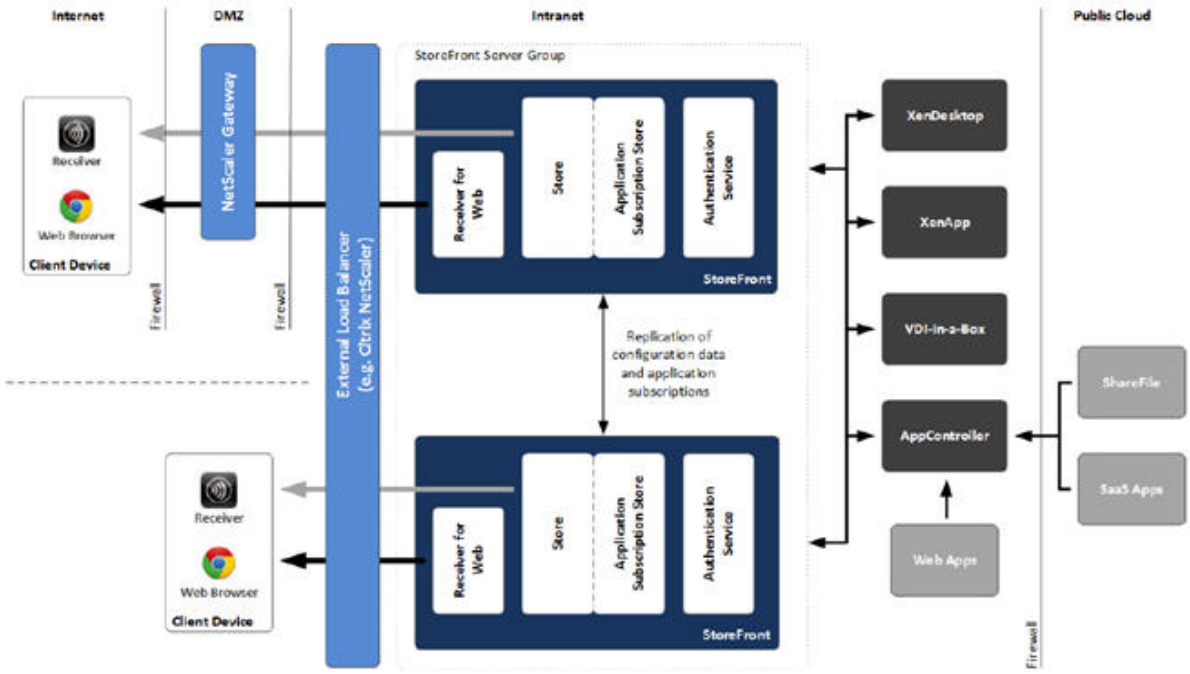

Figure 3.1: The Citrix StoreFront architecture

StoreFront consists of the following components:

- **Authentication service:** This service, which is an integral part of StoreFront, authenticates users to XenDesktop sites, XenApp farms, and App Controller (for SaaS apps). The authentication service ensures that users only need to log on to StoreFront/Receiver once.
- **Store:** The store retrieves user credentials from the authentication service to authenticate users to the components providing the resources. The store also enumerates and aggregates the resources currently available from XenDesktop sites, XenApp farms, and App Controller (SaaS Apps). Users access the store through Citrix Receiver or a Receiver for Web site.
- **Application Subscription Store (Data Store):** This store saves and indexes the application or desktop subscriptions of the users on a per-StoreFront Store basis. In contrast to older versions of StoreFront, where an external Microsoft SQL database was required, the new Application Subscription Store uses the built-in Microsoft Windows Extensible Storage Engine to store details of users' app subscriptions locally on StoreFront servers. When joining a StoreFront server to a Server Group the replication of data between all members is configured automatically.
- **Receiver for Web site:** This site enables users to access stores through a webpage. Furthermore, this site can verify the version of Receiver installed locally on the endpoint and guide the user through an upgrade or installation procedure if required. In scenarios where

Receiver cannot be locally Receiver for HTML5 can be enabled for the Receiver for Web sites so that users can access resources directly within HTML5-compatible web browsers.

- **Desktop Appliance site:** Desktop Appliance sites provide users of non-domain desktops with an experience similar to that of users with domain-joined desktops. The web browsers on desktop appliances are configured to start in full-screen mode displaying the logon screen for a Desktop Appliance site. When a user logs on to a site, by default, the first desktop (in alphabetical order) available to the user in the store for which the site is configured starts automatically. Desktop Appliance sites are only created by default when StoreFront is installed and configured as part of a XenDesktop installation.
- **XenApp Services site:** Users with older Citrix clients that cannot be upgraded can access stores by configuring their clients with the XenApp Services URL for a store. This site can also be used from domain-joined desktop appliances and repurposed PCs running the Citrix Desktop Lock.
- **NetScaler Gateway:** Citrix NetScaler Gateway is a physical or virtual appliance, which provides secure remote access to internal resources. The appliance is typically located within the DMZ and exposed to the Internet. When a user connects to NetScaler Gateway they will need to authenticate before any access to internal resources is granted. The access can be controlled by the admin by means of granular application-level policies and action controls.

As already mentioned, the Citrix StoreFront model of eG Enterprise monitors the health of the StoreFront and the user authentication.

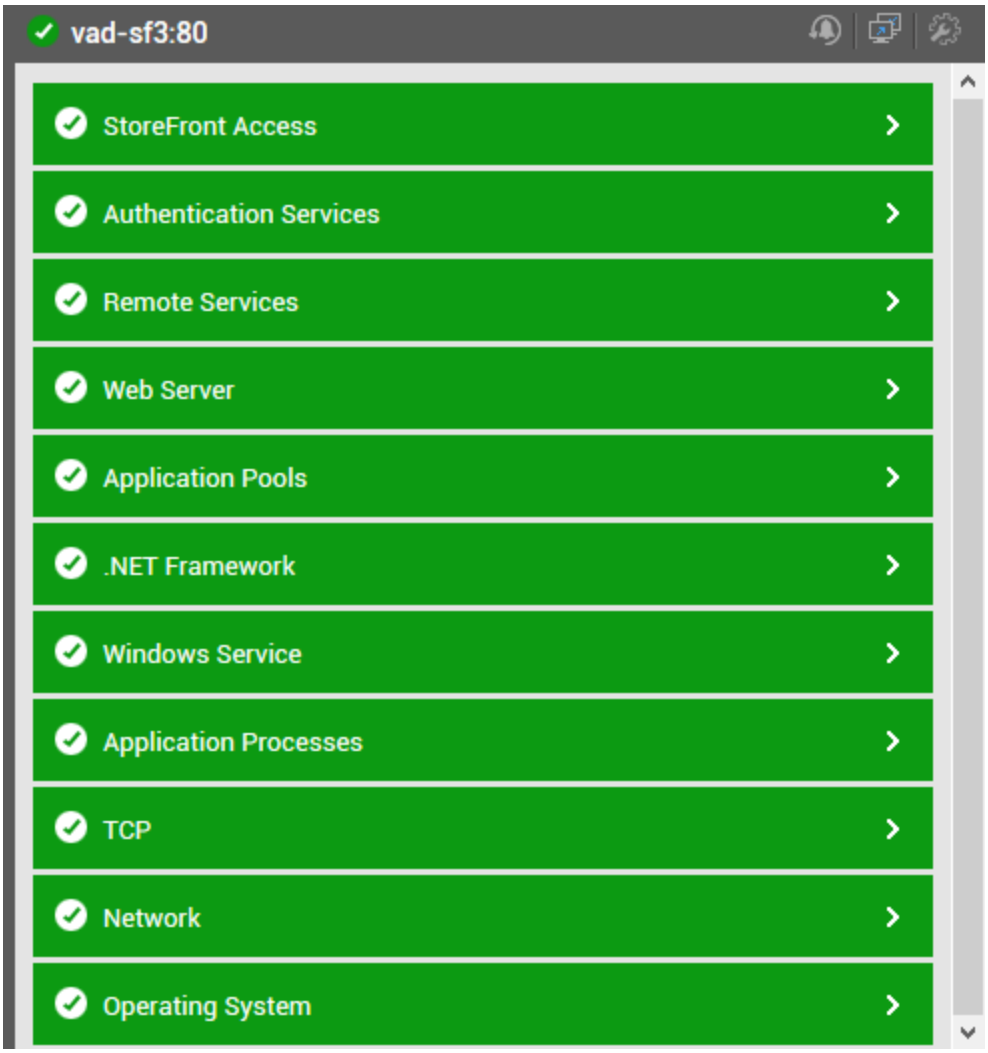

Figure 3.2: The layer model of the Citrix StoreFront

Each layer of Figure 3.2 above is mapped to a series of tests that periodically monitors the Citrix StoreFront server and checks on the following:

- How well the resources were accessed?
- The time taken to access the resources;
- How well the resources were accessed using the ICA protocol?;
- How well the resources were accessed using the RADE (Rapid Application Delivery) process?;
- The rate at which the users were authenticated based on their chosen language preference;
- The time taken to authenticate the users;
- The rate at which the password change requests from the users were processed?

- The time taken to change the password upon user requests;
- How well the authentication store stores the user information, retrieves the information and deletes the user information?;
- How well the resources and sessions were accessed using the Citrix Dazzle?;
- What is the rate at which the user subscriptions were added, deleted, modified, enabled etc?;
- The time taken to retrieve the user subscriptions from the authentication store;
- How well the users are authenticated to access the controller through the Web Application Delivery service?
- How well the Citrix StoreFront is accessed through the XML service?

The **Operating System**, **Network**, **TCP**, **Application Processes and Windows Service** layers of Citrix StoreFront server are similar to that of a Windows server model. The tests mapped to these layers have been dealt with in the *Monitoring Unix and Windows Servers* document. The tests pertaining to the **.NET Framework, Application Pools and Web Server** layers have been dealt with in the *Monitoring Microsoft IIS Web Server* document. Here, we will focus only on the remaining layers in the upcoming sections.

3.1 The Remote Services Layer

This layer tracks the time taken to change the password in the store, delays noticed in explicit authentication calls and change password calls, pass- through authentication attempts made by StoreFront using Kerberos etc.

Figure 3.3: The tests mapped to the Remote Services layer

3.1.1 Delegated Explicit Authentications Test

The StoreFront authentication service authenticates users to Microsoft Active Directory, ensuring that users do not need to log on again to access their desktops and applications. StoreFront supports a number of different authentication methods for users accessing stores. In the Explicit Authentication method, users enter their credentials and are authenticated when they access their stores. Any delay in explicit authentication can scar the logon experience of a user.

Moreover, desktop Receivers and Receiver for Web site users logging on with domain credentials can be allowed to change their passwords. Receiver for Web supports password changes on expiration, as well as elective password changes. All desktop Receivers support password change through NetScaler Gateway on expiration only. If a user who is allowed to change a password, attempts to do so, and that attempt takes a long time, then once again, logon experience of that user suffers.

This is why, explicit authentication calls and change password calls should be monitored, and Citrix administrators notified of delays, promptly. This is exactly what the **Delegated Explicit Authentications** test does! This test monitors the StoreFront authentication service, tracks the explicit authentication and change password calls made via the service, and reports the average time taken by these calls. In the process, the test captures and reports authentication delays.

Target of the test : Citrix StoreFront Server

Agent deploying the test : An internal/remote agent

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

Configurable parameters for the test

Parameters	Description
Test period	This indicates how often should the test be executed.
Host	The host for which the test is to be configured.
Port	The port number at which the specified host listens to. By default, this is *443*.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Authenticate calls	Indicates the number of	Number	

Measurement	Description	Measurement Unit	Interpretation
	explicit authentication calls made since the last measurement period.		
Authenticate average time	Indicates the average time taken to log a user on to Receiver for Web or the Store using Citrix client.	Millisecs	A consistent rise in the value of this measure could indicate an authentication bottleneck.
Change password calls	Indicates the count of change password calls made since the last measurement period.	Number	
Change password average time	Indicates the average time taken to change user passwords.	Millisecs	A delay in password change can occur due to one of the following reasons: • **Disk space constraint:** If you enable Receiver for Web site users to change their passwords at any time, ensure that there is sufficient disk space on your StoreFront servers to store profiles for all your users. This is because, to check whether a user's password is about to expire, StoreFront creates a local profile for that user on the server. In the absence of adequate disk space, StoreFront will not be able to store user profiles locally, thereby delaying password change. • **Poor connectivity with domain controller:** StoreFront must be able to contact the domain controller to change users' passwords. A latent network connection between

Measurement	Description	Measurement Unit	Interpretation
			StoreFront and the domain controller can therefore delay a password change.

3.1.2 Delegated Kerberos Authentications Test

Citrix Receiver for Windows supports Kerberos for domain pass-through authentication for deployments that use smart cards.

When Kerberos authentication is enabled, Kerberos authenticates without passwords for Citrix Receiver for Windows, thus preventing Trojan horse-style attacks on the user device to gain access to passwords. Users can log on to the user device with any authentication method; for example, a biometric authenticator such as a fingerprint reader, and still access published resources without further authentication.

Citrix Receiver for Windows handles pass-through authentication with Kerberos as follows when Citrix Receiver for Windows, StoreFront, XenDesktop and XenApp are configured for smart card authentication and a user logs on with a smart card:

1. The Citrix Receiver for Windows Single Sign-on service captures the smart card PIN.
2. Citrix Receiver for Windows uses Kerberos to authenticate the user to StoreFront. StoreFront then provides Citrix Receiver for Windows with information about available virtual desktops and apps.
3. The HDX engine (previously referred to as the ICA client) passes the smart card PIN to XenDesktop or XenApp to log the user on to the Windows session. XenDesktop or XenApp then deliver the requested resources.

Any delay in authentication using Kerberos is bound to deny users timely access to published resources; in the long run, this will negatively impact the logon experience of users - particularly smart card users. To avoid this, administrators should keep a close watch on pass-through authentication attempts that use Kerberos and proactively detect slowness in authentication. This is what the **Delegated Kerberos Authentications** test does.

This test monitors pass-through authentication attempts made by StoreFront using Kerberos and reports the average time taken for authenticating using Kerberos. Slowness in authentication can thus be captured and the reasons for the same investigated.

Target of the test : Citrix StoreFront Server

Agent deploying the test : An internal/remote agent

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

Configurable parameters for the test

Parameters	Description
Test period	This indicates how often should the test be executed.
Host	The host for which the test is to be configured.
Port	The port number at which the specified host listens to. By default, this is 443.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Authenticate calls	Indicates the number of authentication calls made using Kerberos since the last measurement period.	Number	
Authenticate average time	Indicates the average time taken for pass-through authentication using Kerberos.	Millisecs	A consistent rise in the value of this measure could indicate a bottleneck in Kerberos authentication.

3.1.3 Delivery Controller Communications Test

XML communications between StoreFront servers and Delivery Controllers involve a majority of the processing time. This test tracks the number of calls and latency during communication between a Citrix StoreFront server and the different Citrix Delivery Controllers it communicates with.

Target of the test : Citrix StoreFront Server

Agent deploying the test : An internal/remote agent

Outputs of the test : One set of results for each Citrix Delivery Controller to which the target Citrix Storefront server communicates with.

Configurable parameters for the test

Parameters	Description
Test period	This indicates how often should the test be executed.
Host	The host for which the test is to be configured.
Port	The port number at which the specified host listens to. By default, this is *443*.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Network traffic calls	Indicates the calls made from the Citrix StoreFront server to this Citrix Delivery Controller.	Calls/sec	Comparing the calls across Delivery Controllers helps determine which Citrix Delivery Controller is being contacted the most by the Cirix StoreFront server. The Citrix Storefront server will only fetch the status for the application from the Citrix Delivery Controller that the application belongs.
Network traffic error calls	Indicates the rate at which the errors were detected during the calls made from the Citrix StoreFront server to this Citrix Delivery Controller.	Calls/sec	

3.1.4 NetScaler Gateways Test

This test auto-discovers the Citrix Netscaler gateways that are integrated with the Citrix StoreFront server and reports the availability of each Citrix NetScaler gateway.

Target of the test : Citrix StoreFront Server

Agent deploying the test : An internal/remote agent

Outputs of the test : One set of results for the each store configured on the Citrix Storefront monitored.

Configurable parameters for the test

Parameters	Description
Test period	This indicates how often should the test be executed.
Host	The host for which the test is to be configured.
Port	The port number at which the specified host listens to. By default, this is 443.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Availability	Indicates whether/not this gateway to the Citrix StoreFront server is available.		The values that this measure can take and their corresponding numeric values are as follows: Measure Value / Numeric Value Not available / 0 Available / 100 **Note:** By default, this measure reports the **Measure Value**s listed above to indicate the availability of this gateway. The graph of this measure however, represents the same using the numeric equivalents only.

3.2 The Authentication Services Layer

This layer tracks the rate the rate at which the users are authenticated based on their language preference and the rate at which the change password requests from users are processed.

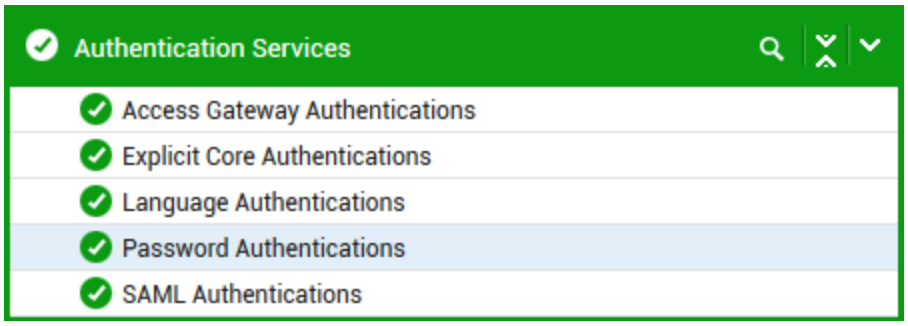

Figure 3.4: The tests mapped to the Authentication Services layer

3.2.1 Explicit Core Authentications Test

The StoreFront authentication service authenticates users to Microsoft Active Directory, ensuring that users do not need to log on again to access their desktops and applications. StoreFront supports a number of different authentication methods for users accessing stores. In the Explicit Authentication method, users enter their credentials and are authenticated when they access their stores. Any delay in explicit authentication can scar the logon experience of a user.

Moreover, desktop Receivers and Receiver for Web site users logging on with domain credentials can be allowed to change their passwords. Receiver for Web supports password changes on expiration, as well as elective password changes. All desktop Receivers support password change through NetScaler Gateway on expiration only. If a user who is allowed to change a password, attempts to do so, and that attempt takes a long time, then once again, logon experience of that user suffers.

This is why, explicit authentication calls and change password calls should be monitored, and Citrix administrators notified of delays, promptly. This is exactly what the **Explicit Core Authentications** test does! This test monitors the StoreFront authentication service, tracks the explicit authentication and change password calls made via the service, and reports the average time taken by these calls. In the process, the test captures and reports authentication delays.

Target of the test : Citrix StoreFront Server

Agent deploying the test : An internal/remote agent

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

Configurable parameters for the test

Parameters	Description
Test period	This indicates how often should the test be executed.
Host	The host for which the test is to be configured.
Port	The port number at which the specified host listens to. By default, this is *443*.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Authenticate calls	Indicates the number of explicit authentication calls made since the last measurement period.	Number	
Authenticate average time	Indicates the average time taken for explicit authentication.	Millisecs	A consistent rise in the value of this measure could indicate an authentication bottleneck.
Change password calls	Indicates the count of change password calls made since the last measurement period.	Number	
Change password average time	Indicates the average time taken to change user passwords.	Millisecs	A delay in password change can occur due to one of the following reasons: • **Disk space constraint:** If you enable Receiver for Web site users to change their passwords at any time, ensure that there is sufficient disk space on your StoreFront servers to store profiles for all your users. This is because, to check whether a user's password is about to expire, StoreFront creates a local profile for that user on the server. In the absence of adequate disk

Measurement	Description	Measurement Unit	Interpretation
			space, StoreFront will not be able to store user profiles locally, thereby delaying password change. • **Poor connectivity with domain controller:** StoreFront must be able to contact the domain controller to change users' passwords. A latent nnetwork connection between StoreFront and the domain controller can therefore delay a password change.

3.2.2 Language Authentications Test

In large virtualized environments, at any given point of time, thousands of users from different zones of the world may be trying to access the published applications and virtual desktops. In such a situation, language plays a major role when a user tries to login through the Citrix Receiver. Based on the language preference of the users, the **Language Authentications** test helps you to determine the rate at which the users are authenticated and how long it took for the Citrix Storefront to authenticate the users. In addition, this test helps you to identify the rate at which the change password requests have been entertained and the average time taken to change the password.

Target of the test : Citrix StoreFront Server

Agent deploying the test : An internal/remote agent

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

Configurable parameters for the test

Parameters	Description
Test Period	This indicates how often should the test be executed.
Host	The host for which the test is to be configured.
Port	The port number at which the specified host listens to. By default, this is *443*.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Authenticate calls	Indicates the rate at which users are authenticated by this Citrix StoreFront based on their chosen language preference.	Calls/sec	A high value is desired for this measure.
Authenticate average time	Indicates the average time taken by this Citrix StoreFront server to authenticate the users.	Secs	A low value is desired for this measure. A gradual increase in the value of this measure is an indication of the unavailability of the database that is required for authentication or a performance bottleneck.
Change password calls	Indicates the rate at which the password change request from the users are processed by this Citrix StoreFront server.	Calls/sec	
Change password average time	Indicates the average time taken by this Citrix StoreFront server into process the password change request from users.	Secs	

3.2.3 Password Authentications Test

When a user tries to login to access the virtual machines or published applications using their login credentials from the Citrix Receiver, the Citrix Credential Wallet Service of the Citrix Storefront server helps in authenticating the password entered by the user with the password that is already stored in the authentication store. Using the **Password Authentications** test, administrators can easily analyze the rate at which the user information is authenticated by the Citrix Wallet Service and the rate at which the user requests are retrieved and serviced to the users. Additionally, you can identify how well the user requests are deleted after being serviced by the Citrix Wallet service. This test is a perfect choice for monitoring the user authentication and the load on the virtualized environment!

Target of the test : Citrix StoreFront Server

Agent deploying the test : An internal/remote agent

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

Configurable parameters for the test

Parameters	Description
Test Period	This indicates how often should the test be executed.
Host	The host for which the test is to be configured.
Port	The port number at which the specified host listens to. By default, this is 443.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Store entry calls	Indicates the rate at which the authentication store stores the entry information i.e., the user requests.	Calls/sec	
Retrieve entry calls	Indicates the rate at which the user information is retrieved from the authentication store by the Citrix Credential Wallet Service upon user requests.	Calls/sec	
Delete entry calls	Indicates the rate at which the user requests are deleted after the request is serviced by the Citrix Credential Wallet Service.	Calls/sec	

3.3 The Storefront Access Layer

This layer tracks the rate at which the resources were accessed from the Citrix StoreFront, the details pertaining to the user subscriptions, the time taken to change the password in the store, the rate at which the applications/resources were accessed through the Citrix Dazzle etc.

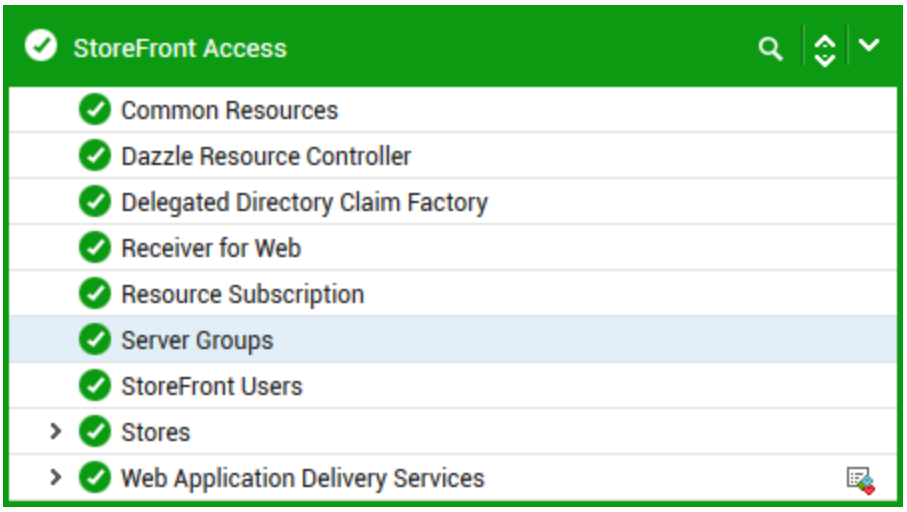

Figure 3.5: The tests mapped to the Storefront Access layer

3.3.1 Common Resources Test

Using this test, you can easily identify the rate at which the resources were accessed from the store, the resources were accessed using ICA protocol and RADE (Rapid Application Delivery) process. In addition, the time taken for accessing the resources using the ICA protocol and the RADE process can also be identified easily.

Target of the test : Citrix StoreFront Server

Agent deploying the test : An internal/remote agent

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

Configurable parameters for the test

Parameters	Description
Test Period	This indicates how often should the test be executed.
Host	The host for which the test is to be configured.
Port	The port number at which the specified host listens to. By default, this is *443*.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
All resources calls	Indicates the rate at which	Calls/sec	

Measurement	Description	Measurement Unit	Interpretation
	the resources were accessed from the store of this server.		
ICA launch calls	Indicates the rate at which the resources were accessed using ICA protocol from the store of this server.	Calls/sec	
ICA launch average time	Indicates the average time taken to access the resources using the ICA protocol from the store of this server.	Secs	
Rade launch calls	Indicates the rate at which the resources were accessed using the RADE process from the store of this server.	Calls/sec	
Rade launch average time	Indicates the average time taken to access the resources using the RADE process from the store of this server.	Secs	

3.3.2 Dazzle Resource Controller Test

Citrix Dazzle is a plug-in for Citrix Receiver that allows users to subscribe to only those available published resources that they choose.

This test helps the administrators to analyze the rate at which the image responses were received for the resources accessed through the Citrix dazzle and the rate at which the resources were actually accessed. In addition, you could analyze the session related information of the resources, the whole body calls and the cache calls that were updated upon user requests.

Target of the test : Citrix StoreFront Server

Agent deploying the test : An internal/remote agent

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

Configurable parameters for the test

Parameters	Description
Test period	This indicates how often should the test be executed.
Host	The host for which the test is to be configured.
Port	The port number at which the specified host listens to. By default, this is *443*.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Image response whole body calls	Indicates the rate of image responses received for the resources accessed through the Citrix dazzle.	Calls/sec	
List convert resources calls	Indicates the rate at which the resources were accessed through the Citrix dazzle.	Calls/sec	
List sessions whole body calls	Indicates the rate at which the sessions were accessed through the Citrix dazzle.	Calls/sec	
List whole body calls	Indicates the rate of whole body calls through the Citrix dazzle.	Calls/sec	
Update resources image cache calls	Indicates the rate at which the cache calls are updated upon user requests for image resources.	Calls/Sec	

3.3.3 Resource Subscription Test

In order to identify the load on the virtualized environment i.e., to identify the details of the user subscriptions, use the **Resource Subscription** test.

This test helps the administrators to identify the rate at which the user subscriptions are added, disposed, enabled, retrieved, removed, modified etc. Additionally, administrators may get to know the time taken to retrieve the user subscriptions from the store and the time taken to modify the user subscriptions.

Target of the test : Citrix StoreFront Server

Agent deploying the test : An internal/remote agent

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

Configurable parameters for the test

Parameters	Description
Test period	This indicates how often should the test be executed.
Host	The host for which the test is to be configured.
Port	The port number at which the specified host listens to. By default, this is *443*.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Add subscriptions calls	Indicates the rate at which the user subscriptions were added to the store of this server.	Calls/sec	
Dispose calls	Indicates the rate at which the user subscriptions were disposed from the store of this server.	Calls/sec	
Enabled calls	Indicates the rate at which the user subscriptions were enabled on this server.	Calls/sec	
Get subscriptions calls	Indicates the rate at which the subscriptions were retrieved from the store of this server.	Calls/sec	
Get subscriptions	Represents the time it	Secs	

Measurement	Description	Measurement Unit	Interpretation
average time	takes for a user's resource subscription to gather when using Citrix Receiver and logging on or refreshing apps or logging on to Receiver for Web.		
Remove subscriptions calls	Indicates the rate at which the subscriptions were removed from the store.	Calls/sec	
Remove subscriptions average time	Indicates the average time taken to remove the subscriptions from the store.	Secs	
Save changes calls	Indicates the rate at which the changes made to the user subscriptions were saved on the store.	Calls/sec	
Update subscription calls	Indicates the rate at which the user subscriptions were updated on the store.	Calls/sec	

3.3.4 Web Application Delivery Services Test

The Citrix Self service plugin is used to customize the applications that are frequently used by the users in the Citrix Receiver dashboard, once the users are authenticated on the Citrix Storefront.

This test reports the rate at which the users are authenticated to access the controller while accessing the applications through the Citrix Self service plugin and the time taken for authenticating the users to access the controller.

Target of the test : Citrix StoreFront Server

Agent deploying the test : An internal/remote agent

Outputs of the test : One set of results for the web application delivery service that is to be monitored.

Configurable parameters for the test

Parameters	Description
Test Period	This indicates how often should the test be executed.
Host	The host for which the test is to be configured.
Port	The port number at which the specified host listens to. By default, this is *443*.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Controller action calls	Indicates the rate at which the users accessing through the Citrix Self service plugin are authenticated to access the controller.	Calls/sec	
Controller action average time	Indicates the average time taken for authenticating the users accessing the controller through the Citrix Self service plugin.	Secs	

3.3.5 Citrix Delivery Service Log Test

This test periodically scans the Citrix Delivery Service logs for configured patterns of errors/warnings and promptly captures and reports error/warning messages that match the specified patterns.

Target of the test : Citrix StoreFront

Agent deploying the test : A remote agent

Outputs of the test : One set of results for the Filter configured.

Configurable parameters for the test

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

Parameters	Description
Host	The host for which the test is to be configured.
Port	Refers to the port used by the EventLog Service. Here it is *null*.
LogType	Refers to the type of event logs to be monitored. The default value is **application**.
Policy Based Filter	Using this page, administrators can configure the event sources, event IDs, and event descriptions to be monitored by this test. In order to enable administrators to easily and accurately provide this specification, this page provides the following options: • Manually specify the event sources, IDs, and descriptions in the Filter text area, or, • Select a specification from the predefined filter policies listed in the Filter box For explicit, manual specification of the filter conditions, select the **No** option against the Policy Based Filter field. This is the default selection. To choose from the list of pre-configured filter policies, or to create a new filter policy and then associate the same with the test, select the **Yes** option against the Policy Based Filter field.
Filter	If the Policy Based Filter flag is set to No, then a Filter text area will appear, wherein you will have to specify the event sources, event IDs, and event descriptions to be monitored. This specification should be of the following format: *{Displayname}:{event_sources_to_be_included}:{event_sources_to_be_excluded}:{event_IDs_to_be_included}:{event_IDs_to_be_excluded}:{event_descriptions_to_be_included}:{event_descriptions_to_be_excluded}*. For example, assume that the FILTER text area takes the value, OS_events:all:Browse,Print:all:none:all:none. Here: a. *OS_events* is the display name that will appear as a descriptor of the test in the monitor UI; b. *all* indicates that all the event sources need to be considered while monitoring. To monitor specific event sources, provide the source names as a comma-separated list. To ensure that none of the event sources are monitored, specify *none*. c. Next, to ensure that specific event sources are excluded from monitoring, provide a comma-separated list of source names. Accordingly, in our example, *Browse* and *Print* have been excluded from monitoring. Alternatively, you can use *all* to indicate that all the event sources have to be excluded from monitoring, or *none* to denote that none of the event sources need be excluded. d. In the same manner, you can provide a comma-separated list of event IDs that

Parameters	Description
	require monitoring. The *all* in our example represents that all the event IDs need to be considered while monitoring. e. Similarly, the *none* (following *all* in our example) is indicative of the fact that none of the event IDs need to be excluded from monitoring. On the other hand, if you want to instruct the eG Enterprise system to ignore a few event IDs during monitoring, then provide the IDs as a comma-separated list. Likewise, specifying *all* makes sure that all the event IDs are excluded from monitoring. f. The *all* which follows implies that all events, regardless of description, need to be included for monitoring. To exclude all events, use *none*. On the other hand, if you provide a comma-separated list of event descriptions, then the events with the specified descriptions will alone be monitored. Event descriptions can be of any of the following forms - *desc**, or *desc*, or **desc**,or *desc**, or *desc1*desc2*, etc. *desc* here refers to any string that forms part of the description. A leading '*' signifies any number of leading characters, while a trailing '*' signifies any number of trailing characters. g. In the same way, you can also provide a comma-separated list of event descriptions to be excluded from monitoring. Here again, the specification can be of any of the following forms: *desc**, or *desc*, or **desc**,or *desc**, or *desc1*desc2*, etc. *desc* here refers to any string that forms part of the description. A leading '*' signifies any number of leading characters, while a trailing '*' signifies any number of trailing characters. In our example however, none is specified, indicating that no event descriptions are to be excluded from monitoring. If you use *all* instead, it would mean that all event descriptions are to be excluded from monitoring. By default, the Filter parameter contains the value: *all:all:none:all:none:all:none*. Multiple filters are to be separated by semi-colons (;). **Note:** The event sources and event IDs specified here should be exactly the same as that which appears in the Event Viewer window. On the other hand, if the Policy Based Filter flag is set to **Yes**, then a Filter list box will appear, displaying the filter policies that pre-exist in the eG Enterprise system. A filter

Parameters	Description
	policy typically comprises of a specific set of event sources, event IDs, and event descriptions to be monitored. This specification is built into the policy in the following format: *{Policyname}:{event_sources_to_be_included}:{event_sources_to_be_excluded}:{event_IDs_to_be_included}:{event_IDs_to_be_excluded}:{event_descriptions_to_be_included}:{event_descriptions_to_be_excluded}* To monitor a specific combination of event sources, event IDs, and event descriptions, you can choose the corresponding filter policy from the Filter list box. Multiple filter policies can be so selected. Alternatively, you can modify any of the existing policies to suit your needs, or create a new filter policy. To facilitate this, a **Click here** link appears just above the test configuration section, once the **Yes** option is chosen against Policy Based Filter. Clicking on the **Click here** link leads you to a page where you can modify the existing policies or create a new one. The changed policy or the new policy can then be associated with the test by selecting the policy name from the Filter list box in this page.
UseWMI	The eG agent can either use **WMI** to extract event log statistics or directly parse the event logs using event log APIs. If the UseWMI flag is **Yes**, then **WMI** is used. If not, the event log APIs are used. This option is provided because on some Windows 2000 systems (especially ones with service pack 3 or lower), the use of WMI access to event logs can cause the CPU usage of the **WinMgmt** process to shoot up. On such systems, set the UseWMI parameter value to **No**.
Stateless Alerts	Typically, the eG manager generates email alerts only when the state of a specific measurement changes. A state change typically occurs only when the threshold of a measure is violated a configured number of times within a specified time window. While this ensured that the eG manager raised alarms only when the problem was severe enough, in some cases, it may cause one/more problems to go unnoticed, just because they did not result in a state change. For example, take the case of the EventLog test. When this test captures an error event for the very first time, the eG manager will send out a **Critical** email alert with the details of the error event to configured recipients. Now, the next time the test runs, if a different error event is captured, the eG manager will keep the state of the measure as **Critical**, but will not send out the details of this error event to the user; thus, the second issue will remain hidden from the user. To make sure that administrators do not miss/overlook critical issues, the eG Enterprise monitoring solution provides the **stateless alerting** capability. To enable this capability for this test, set the Stateless Alerts flag to **Yes**. This will ensure that email alerts are generated for this test, regardless of whether or not the state of the measures reported by this test changes.

Parameters	Description
Events During Restart	By default, this flag is set to **Yes**. This ensures that whenever the agent is stopped and later started, the events that might have occurred during the period of non-availability of the agent are included in the number of events reported by the agent. Setting the flag to **No** ensures that the agent, when restarted, ignores the events that occurred during the time it was not available.
Events during restart	By default, this flag is set to **Yes**. This ensures that whenever the agent is stopped and later started, the events that might have occurred during the period of non-availability of the agent are included in the number of events reported by the agent. Setting the flag to **No** ensures that the agent, when restarted, ignores the events that occurred during the time it was not available.
DDforInformation	eG Enterprise also provides you with options to restrict the amount of storage required for event log tests. Towards this end, the DDforInformation and DDforWarning flags have been made available in this page. By default, both these flags are set to **Yes**, indicating that by default, the test generates detailed diagnostic measures for information events and warning events. If you do not want the test to generate and store detailed measures for information events, set the DDforInformation flag to **No**.
DDforWarning	To ensure that the test does not generate and store detailed measures for warning events, set the DDforWarning flag to **No**.
DD Frequency	Refers to the frequency with which detailed diagnosis measures are to be generated for this test. The default is *1:1*. This indicates that, by default, detailed measures will be generated every time this test runs, and also every time the test detects a problem. You can modify this frequency, if you so desire. Also, if you intend to disable the detailed diagnosis capability for this test, you can do so by specifying *none* against DD frequency.
Detailed Diagnosis	To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the **On** option. To disable the capability, click on the **Off** option. The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled: • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

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

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

3.3.6 Server Groups Test

StoreFront can be configured either on a single server or as a multiple server deployment where two/more servers are grouped under a server group. Server groups not only provide additional capacity, but also greater availability.

To know the number and names of servers in a server group, use the **Server Groups** test.

Target of the test : Citrix StoreFront Server

Agent deploying the test : An internal/remote agent

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

Configurable parameters for the test

Parameters	Description
Test Period	This indicates how often should the test be executed.
Host	The host for which the test is to be configured.
Port	The port number at which the specified host listens to. By default, this is 443.
DD Frequency	Refers to the frequency with which detailed diagnosis measures are to be generated for this test. The default is *1:1*. This indicates that, by default, detailed measures will be generated every time this test runs, and also every time the test detects a problem. You can modify this frequency, if you so desire. Also, if you intend to disable the detailed diagnosis capability for this test, you can do so by specifying *none* against DD frequency.
Detailed Diagnosis	To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the **On** option. To disable the capability, click on the **Off** option. The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled: • 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
Number of servers	Indicates the number of servers in the server group.	Number	Use the detailed diagnosis of this measure to know which servers are part of the server group.

3.3.7 Server Details Test

In a Storefront server group, configuration information and details of users' application subscriptions are stored on and synchronized between all the servers in that group. This means that if a StoreFront server becomes unavailable for any reason, users can continue to access their stores using the remaining servers. Meanwhile, the configuration and subscription data on the failed server are automatically updated when it reconnects to the server group.

If a server in a group is unable to synchronize its data with other members of the group or is taking too long to do so, Storefront wil not be able to deliver on its promise of high availability. Administrators should hence periodically check whether the StoreFront server being monitored is in sync with other servers in that group, and if not, figure out what is causing the non-sync – is it because the server is taking an abnormally long time to synchronize its data with other group members? The **Server Details** test helps administrators find answers to this question! This test promptly captures any data non-sync that may exist between a monitored server and the server group to which it belongs and also reveals if it is owing to latencies in synchronization.

Target of the test : Citrix StoreFront Server

Agent deploying the test : An internal/remote agent

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

Configurable parameters for the test

Parameters	Description
Test period	This indicates how often should the test be executed.
Host	The host for which the test is to be configured.
Port	The port number at which the specified host listens to. By default, this is *443*.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Synchronization status	Indicates whether/not the contents are in sync with all Storefront servers in the group.		The values that this measure can take and their corresponding numeric values are as follows:

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td></td><td></td><td>
<table>
<tr><th>Measure Value</th><th>Numeric Value</th></tr>
<tr><td>Sync not done</td><td>0</td></tr>
<tr><td>Sync com-pleted</td><td>100</td></tr>
</table>
Note:
By default, this measure reports the Measure Values listed above to indicate the synchronization state. The graph of this measure however, represemts the same using numeric equivalents only.
</td></tr>
<tr><td>Synchronization duration</td><td>Indicates the time taken for synchronization.</td><td>Secs</td><td>A high value or a consistent increase in the value of this measure is a cause for concern, as it indicates synchronization delays.</td></tr>
</table>

3.3.8 Stores Test

StoreFront stores enumerate and aggregate desktops and applications from XenDesktop sites, XenApp farms, and AppController, making these resources available to users. You can create as many stores as you need; for example, you might want to create a store for a particular group of users or to aggregate a specific set of resources.

If users complain that they are unable to access a store, administrators should be able to instantly figure what is causing the inaccessibility – is it because the store is unavailable? or is because of the store's poor responsiveness to user requests? This is where the **Stores** test helps! This test auto-discovers the stores configured on the Storefront server and reports the availability and responsiveness of each store, so that unavailable and unresponsive stores can be accurately isolated.

Target of the test : Citrix StoreFront Server

Agent deploying the test : An internal/remote agent

Outputs of the test : One set of results for the each store configured on the Citrix Storefront monitored.

Configurable parameters for the test

Parameters	Description
Test Period	This indicates how often should the test be executed.
Host	The host for which the test is to be configured.
Port	The port number at which the specified host listens to. By default, this is *443*.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Availability	Indicates whether/not this store is available.		The values that this measure can take and their corresponding numeric values are as follows: Measure Value: Not available — Numeric Value: 0 Measure Value: Available — Numeric Value: 100 **Note:** By default, this measure reports the **Measure Value**s listed above to indicate the availability of a store. The graph of this measure however, represents the same using the numeric equivalents only.
Response time	Indicates the time taken by this store to respond to user requests.	Secs	A high value or a consistent increase in the value of this measure is a cause for concern, as it indicates poor responsiveness.

3.3.9 StoreFront Users Test

In large Citrix environments, for a Citrix user to login to the virtual environment without any delays, administrators may often have to check the accessibility of the Citrix StoreFront server, ensure if the user is able to connect to the Citrix StoreFront server and figure out if the user has actually logged in without any difficulty. While the **StoreFront Logon Status** test helps administrators to check if the

user is able to connect to the Citrix StoreFront server or not, the **StoreFront Users** test helps administrators determine the number of users logged into to the Citrix environment through the Citrix StoreFront server. This way, administrators can keep track on the number of users who are actually logged into the Citrix environment.

This test reports the number of users logged in through the Citrix StoreFront server.

Note:

This test will report the measures only if the audit logon events option has been enabled in the security policy.

Target of the test : Citrix StoreFront Server

Agent deploying the test : An internal/remote agent

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

Configurable parameters for the test

Parameters	Description
Test period	This indicates how often should the test be executed.
Host	The host for which the test is to be configured.
Port	The port number at which the specified host listens to. By default, this is 443.
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
Number of logon users	Indicates the number of users logged in through this Citrix StoreFront server.	Number	

3.3.10 StoreFront Logon Status Test

Frequent login failures and inexplicable delays when accessing the Citrix StoreFront server can have an adverse impact on a user's experience with Citrix StoreFront. To capture such failures/delays proactively and isolate their root-cause, administrators can use the **StoreFront Logon Status** test. At configured intervals, this test emulates a user logging into the Citrix StoreFront server. In the process, the test reveals whether/not a user is able to connect to the Citrix StoreFront server and also reports the time taken for logging in to the Citrix StoreFront server. This way, login failures and unusual slowness in logging in can be captured.

Target of the test : Citrix StoreFront Server

Agent deploying the test : An internal/remote agent

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

Configurable parameters for the test

Parameters	Description
Test Period	This indicates how often should the test be executed.
Host	The host for which the test is to be configured.
Port	The port number at which the specified host listens to. By default, this is 443.
StoreFront Version	Choose the version of the target Citrix StoreFront server that is to be monitored.
Login URL	Specify the URL of the target Citrix StoreFront server being accessed in this text box. For instance, you can specify the URL in the following format: *http://192.168.9.17/citrix/store.*
User name and Password	Specify the credentials of a Citrix StoreFront user here.

Parameters	Description
Confirm Password	Confirm the Password by retyping it here.
SSL	Indicate whether/not the target Citrix StoreFront server is SSL-enabled. By default, this flag is set to **Yes**.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Login status	Indicates whether/not the user could connect to the Citrix StoreFront server.		The values that this measure can take and their corresponding numeric values are as follows: **Measure Value** / **Numeric Value** Success – 1 Failure – 0 **Note:** By default, this measure reports the **Measure Value**s listed above to indicate the login state of the Citrix StoreFront server. The graph of this measure however, represents the same using numeric equivalents only.
Time taken to login	Indicates the time taken to login to the Citrix StoreFront server.	Seconds	A low value is desired for this measure. A high value or a consistent increase in the value of this measure is a cause for concern, as it indicates login delays.

3.3.11 Delegated Directory Claim Factory Test

A claim is a statement that one subject makes about itself or another subject. For example, the statement can be about a name, identity, key, group, privilege, or capability. Claims are issued by a provider, and they are given one or more values and then packaged in security tokens that are issued by a security token service (STS).

Users accessing StoreFront via the NetScaler Gateway can login using a passcode. This passcode is generated by a security token (i.e., claim), which is issued by a claims provider such as ADFS

(Active Directory Federation Service server). Once the NetScaler Gateway validates the claim using Active Directory, the user request is transmitted to the trusted StoreFront server. StoreFront then contacts the Federated Authentication Service (FAS) to assert the claimed user identity. If FAS asserts the user identity, then it grants a ticket that allows a single XenApp or XenDesktop session to authenticate with a certificate for that session.

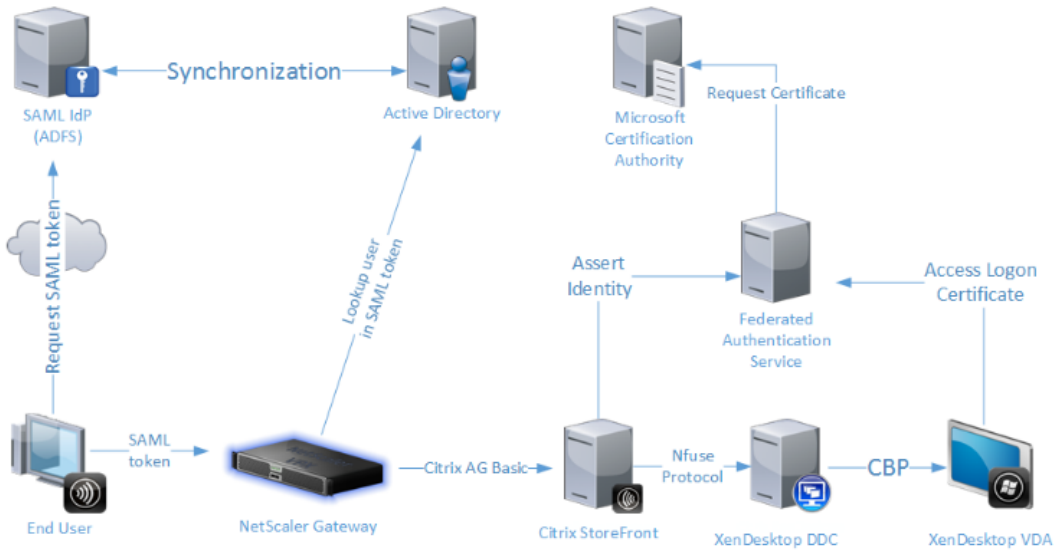

Figure 3.6: Federated Authentication Service integrating with a Microsoft Certification Authority and providing support services to StoreFront and XenApp and XenDesktop Virtual Delivery Agents (VDAs)

If this claims-based authentication process takes too long, users logging into their stores via the NetScaler Gateway may be denied timely access to their stores. This can adversely impact user experience with StoreFront. To avoid this, administrators can periodically run the **Delegated Directory Claim Factory** test. This test tracks the claims-based authentication process and alerts administrators to probable delays in the process. This enables administrators to investigate and diagnose the reasons for the delay and promptly initiate measures to pre-empt it.

Target of the test: A Citrix StoreFront server

Agent deploying the test : An internal/remote agent

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

Configurable parameters for the test

Parameters	Description
Test period	This indicates how often should the test be executed.

Parameters	Description
Host	The host for which the test is to be configured.
Port	The port number at which the specified HOST listens to. By default, this is 443.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Create claim calls	Indicates the number of claim- based logins attempted since the last measurement period.	Number	
Create claim average time	Indicates the average time taken to authenticate the claim-based logins.	Millisecs	A consistent rise in the value of this measure could indicate an authentication delay.

3.3.12 Receiver for Web Test

Users with compatible web browsers can access StoreFront stores by browsing to Receiver for Web sites. By default, users also require a compatible version of Citrix Receiver to access their desktops and applications. However, you can configure your Receiver for Web sites to enable users with HTML5-compatible browsers to access their resources without installing Citrix Receiver. When you create a new store, a Receiver for Web site is created for the store by default.

The typical logon process via Receiver for Web sites is detailed below:

1. User clicks to launch application. The request is forwarded to a Delivery Controller
2. Delivery Controller queries SQL to determine the best worker server to host session.
3. Delivery Controller sends the connection information to StoreFront.
4. StoreFront creates a launch.ica file, and sends file to end-user device.
5. Receiver for Web HTML5 or Receiver client launches ICA file on end-user device, makes connection request to worker server, and executes application.

At the Receiver-end, a delay in ICA file launch, or a slow login attempt, or a delay in getting the launch status or list of resources, can adversely impact the logon process. If users logging in using

Receiver for Web complain of logon slowness, then, you can use the **Receiver for Web** test to determine the average time user logons took for performing each of the aforesaid tasks on the Receiver for Web. This way, you can accurately isolate the source of the slowness at the Receiver-end.

Target of the test : Citrix StoreFront Server

Agent deploying the test : An internal/remote agent

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

Configurable parameters for the test

Parameters	Description
Test period	This indicates how often should the test be executed.
Host	The host for which the test is to be configured.
Port	The port number at which the specified host listens to. By default, this is 443.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Get ICA file calls	Indicates the number of times since the last measurement period an end-user device received a generated ICA file when a user requests to launch an application via Receiver for Web.	Number	
Get ICA file average time	Indicates the average time an end-user device took to receive a generated ICA file when a user requests to launch an application via Receiver for Web.	Seconds	When users logging into Receiver for Web complain of logon slowness, you can compare the value of this measure with the other time-related metrics reported by this test to accurately pinpoint the root-cause of the slowness - is the login slow? is there a delay in launching an ICA file on an end-user device? are icons launched slowly? or is there slowness when

Measurement	Description	Measurement Unit	Interpretation
			getting the launch status or list of resources?
Get icon calls	Indicates the number of time since the last measurement period icons were launched in response to user requests to launch an application via Receiver for Web.	Number	
Get icon average time	Indicates the average time taken to launch icons.	Seconds	When users logging into Receiver for Web complain of logon slowness, you can compare the value of this measure with the other time-related metrics reported by this test to accurately pinpoint the root-cause of the slowness - is the login slow? is there a delay in launching an ICA file on an end-user device? are icons launched slowly? or is there slowness when getting the launch status or list of resources?
Get launch status calls	Indicates the number of times since the last measurement period the launch status of ICA files on the end-user devices, was determined.	Number	
Get launch status average time	Indicates the average time taken to determine the launch status of ICA files on the end-user devices.	Seconds	When users logging into Receiver for Web complain of logon slowness, you can compare the value of this measure with the other time-related metrics reported by this test to accurately pinpoint the root-cause of the slowness - is the login slow? is there a delay in launching an ICA file on an end-user device? are icons launched slowly? or is there slowness when getting the launch status or list of

Measurement	Description	Measurement Unit	Interpretation
			resources?
List resource calls	Indicates the number of times since the last measurement period resources were listed on XenDesktop or XenApp in response to user requests to launch an application via Receiver for Web.	Number	
List resource calls average time	Indicates the average time taken to list resources in response to user requests to launch an application via Receiver for Web.	Seconds	When users logging into Receiver for Web complain of logon slowness, you can compare the value of this measure with the other time-related metrics reported by this test to accurately pinpoint the root-cause of the slowness - is the login slow? is there a delay in launching an ICA file on an end-user device? are icons launched slowly? or is there slowness when getting the launch status or list of resources?
Login attempts calls	Indicates the number of attempts made since the last measurement period to login to Receiver for Web.	Number	
Login attempts average time	Indicates the average time taken to login to Receiver for Web.	Seconds	When users logging into Receiver for Web complain of logon slowness, you can compare the value of this measure with the other time-related metrics reported by this test to accurately pinpoint the root-cause of the slowness - is the login slow? is there a delay in launching an ICA file on an end-user device? are icons launched slowly? or is there slowness when getting the launch status or list of resources?

3.3.13 StoreFront Resource Availability Test

Using this test administrators can measure the logon experience of users connecting via Citrix StoreFront. This test emulates accesses to specific resources such as applications/desktops published on StoreFront. In the process, the availability, authentication, and enumeration of each application and/or desktop is reported. These metrics offer insights into certain key factors that may influence a StoreFront user's logon experience. This includes the availability and responsiveness of the StoreFront home configuration, the authentication method, the availability of the ICA file and the time taken to download it, and more! These statistics help Citrix administrators to track the complete journey of a Citrix StoreFront user through the Citrix application/desktop delivery landscape and accurately isolate bottlenecks prior to launching the application/desktop.

Target of the test : Citrix StoreFront Server

Agent deploying the test : An internal/remote agent

Outputs of the test : One set of results for every published application and/or virtual desktop

Configurable parameters for the test

Parameters	Description
Test Period	This indicates how often should the test be executed.
Host	The host for which the test is to be configured.
Port	The port number at which the specified host listens to. By default, this is 443.
StoreFront URL	Specify the URL of the target Citrix StoreFront server being accessed in this text box. For instance, you can specify the URL in the following format: *http://192.168.9.17/citrix/store.*
Published resource Names	Here, provide a comma-separated list of Published resources to be launched. The resource can be an application / desktop. When providing application/desktop names, make sure you provide the same name using which the applications/desktops are displayed in the StoreFront web console. Also, make sure that the User you specify is authorized to launch all the applications/desktops configured in the comma-separated list of Published resources.
Domain, User name, Password and Confirm Password	To enable you to log into a Citrix farm via StoreFront and launch a resource, provide the Domain, User Name and Password of a user who has the right to launch all the resources specified against Published Resource Names parameter. Then, confirm the Password by retyping it in the Confirm Password text box.
Web request	Indicate the duration (in seconds) for which this test should wait for a response from the

Parameters	Description
Timeout	StoreFront for the web request. By default, this is set to 30 seconds.
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
StoreFront URL availability	Indicates whether/not the URL specified against the **StoreFront URL** parameter is available when attempting to launch this application/desktop.	Percent	The value 100 for this measure indicates that the StoreFront is available to launch the resource, and the value 0 indicates that the StoreFront is unavaialble. If this measure reports the value 0, then no other measures will be reported for that resource.
StoreFront URL response time	Indicates the time taken to receive response from the StoreFront URL, when attempting to launch this application/desktop.	Seconds	If the *Total response time* for a resource exceeds its threshold, compare the value of this measure with that of the other response time values reported by the test to know where the bottleneck lies.
StoreFront home configuration availability	Indicates whether/not the home page of the StoreFront web console is available for access when attempting to launch this application/desktop.	Percent	The value 100 for this measure indicates that the StoreFront home page is accessible to launch the resource, and the value 0 indicates that the home page is not accessible.

Measurement	Description	Measurement Unit	Interpretation
StoreFront home configuration response time	Indicates the time taken to access the home page of the StoreFront web console.	Seconds	If the *Total response time* for a resource exceeds its threshold, compare the value of this measure with that of the other response time values reported by the test to know where the bottleneck lies.
Authentication method availability	Indicates whether/not any authentication method is available to login to the StoreFront web console when attempting to launch this application/desktop.	Percent	The value 100 for this measure indicates that login was successful, and the value 0 indicates that login failed.
Authentication method response time	Indicates the time taken by any authentication method to respond to a login request to the StoreFront web console when attempting to launch this application/desktop.	Seconds	Ideally, the value of this measure should be low.
Explicit authentication method availability	Indicates whether/not the explicit authentication method is enabled for the user to launch this application/desktop.	Percent	The value 100 for this measure indicates that login was successful, and the value 0 indicates that login failed.
Explicit authentication method response time	Indicates the time taken by any explicit authentication method to respond to a login request to the StoreFront web console when attempting to launch this application/desktop.	Seconds	Ideally, the value of this measure should be low.
Login availability	Indicates whether/not the user logged into the StoreFront successfully,	Percent	The value 100 for this measure indicates that login was successful, and the value 0 indicates that login

Measurement	Description	Measurement Unit	Interpretation
	when attempting to launch this application/desktop.		failed.
Login response time	Indicates the time taken by the user to login to StoreFront, when attempting to launch this application/desktop.	Seconds	Ideally, the value of this measure should be low.
Resource availability	Indicates whether this application/desktop is available to launch or not.	Percent	
Resource response time	Indicates the time taken by this application/desktop to respond when the user is trying to launch this application/desktop.	Seconds	
ICA file download availability	Indicates whether the ICA file is available to launch this application/desktop or not.	Percent	When launching an application/desktop from the StoreFront, users are prompted to save or download the launch *.ica* file. The ICA files contain configuration information about the application/desktop. Therefore, the application/desktop will be launched only if the ICA file is downloaded successfully. The value 100 for this measure indicates that the ICA is downloaded successfully, and the value 0 indicates that the home page is not accessible. The value 100 is preferred for this measure indicating that the ICA file was downloaded successfully. If the value is reported for this measure indicates that ICA file download failed.

Measurement	Description	Measurement Unit	Interpretation
ICA file download response time	Indicates the time taken to download the ICA file when the user is trying to launch this application/desktop.	Seconds	
Total response time	Indicates the total time taken to receive response when the user is attempting to launch this application/desktop.	Seconds	

About eG Innovations

eG Innovations provides intelligent performance management solutions that automate and dramatically accelerate the discovery, diagnosis, and resolution of IT performance issues in on-premises, cloud and hybrid environments. Where traditional monitoring tools often fail to provide insight into the performance drivers of business services and user experience, eG Innovations provides total performance visibility across every layer and every tier of the IT infrastructure that supports the business service chain. From desktops to applications, from servers to network and storage, from virtualization to cloud, eG Innovations helps companies proactively discover, instantly diagnose, and rapidly resolve even the most challenging performance and user experience issues.

eG Innovations is dedicated to helping businesses across the globe transform IT service delivery into a competitive advantage and a center for productivity, growth and profit. Many of the world's largest businesses use eG Enterprise to enhance IT service performance, increase operational efficiency, ensure IT effectiveness and deliver on the ROI promise of transformational IT investments across physical, virtual and cloud environments.

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