Monitoring the Citrix App Controller

eG Enterprise v6

Restricted Rights Legend

Trademarks

Copyright

Table of Contents

Table of Figures

1

Introduction

Citrix XenMobile is an enterprise mobility management solution that provides administrators with mobile device management (MDM), mobile application management (MAM) and online file-sharing capabilities. To deliver these services to end-users, the XenMobile software suite includes a wide range of components – the Citrix Netscaler that authenticates remote user sessions to the app store and ensures secure access, the XenMobile App Controller that stores the applications and data sources that can be accessed by users, Citrix ShareFile that enables efficient data sharing and synchronization across users, and the XenMobile MDM (a.k.a the XenMobile Device Manager) that protects the corporate network from mobile threats by applying configured mobile usage policies on devices and detecting non-conformances.

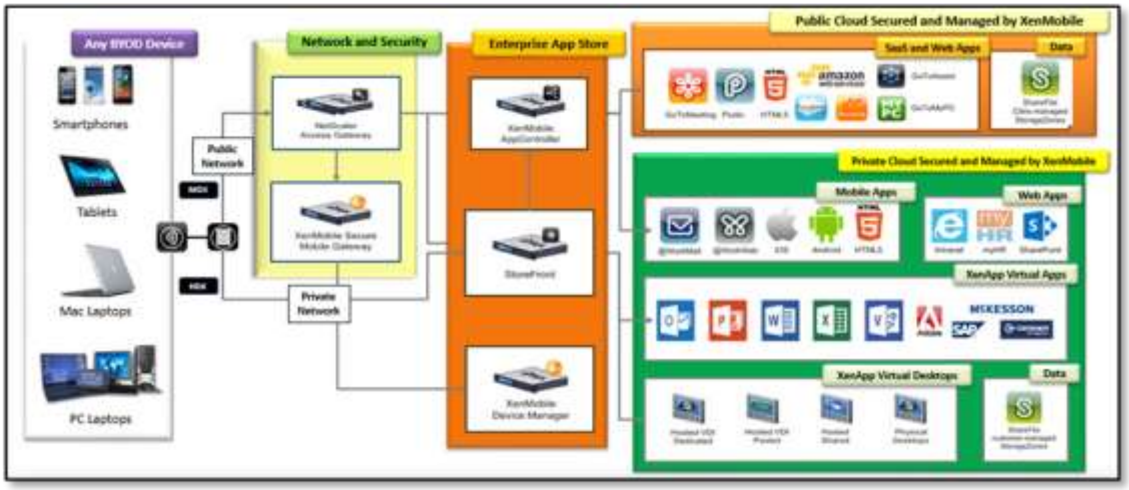


Figure 1: The Citrix XenMobile Architecture

eG Enterprise Suite provides specialized monitors for each of the core components of the Citrix XenMobile service – namely, the Citrix XenMobile MDM, the Citrix ShareFile, the Citrix AppController, and the Citrix Storage zones. These out-of-the-box monitors periodically check and report the availability, responsiveness, and overall health of each of these components, and thus reveals how the Citrix XenMobile service as a whole is performing.

This document details how eG monitors the Citrix AppController and what metrics it collects from it.

2

Monitoring Citrix App Controller

Citrix App Controller delivers access to web, SaaS, Android, and iOS apps, as well as integrated ShareFile data and documents. Users access their applications through Citrix Receiver, Receiver for Web or Worx Home.

With App Controller, you can provide the following benefits for each application type:

- **SaaS applications.** Active Directory-based user identity creation and management, with SAML-based single sign-on (SSO).
- **Intranet web applications.** HTTP form-based SSO by using password storage.
- **iOS and Android apps.** Unified store to which you can install MDX apps for iOS and Android devices, and security management for MDX policies, encompassing WorxMail and WorxWeb. You can wrap iOS and Android apps with the MDX Toolkit to create MDX apps.
- **ShareFile access.** Delivery of files by configuring ShareFile settings and the ShareFile application that provides seamless SAML SSO, and Active Directory-based ShareFile service user account management.

Any issue that threatens the availability or overall health of the AppController will impact user access to all the aforesaid applications. For instance, if the network connection to the App Controller is flaky or broken, users will not be able to access SaaS, mobile applications, or ShareFile; as a result, user productivity will suffer. Similarly, the inaccessibility of App Controller's web-based management console and the use of expired certificates to establish a connection with a mobile app can also slowdown/suspend user access. What can further weaken a user's experience with a mobile app are the application-level policies and device-level securities configured on App Controller for the individual applications.

Therefore, to assure mobile device users of a high-quality experience with their applications, administrators should closely monitor the availability of the App Controller, track user logins to App Controller and the applications these users typically access, study the current policy settings for applications, and proactively detect abnormalities and areas that require fine-tuning. This is exactly where the *Citrix AppController* monitoring model that eG Enterprise provides helps!

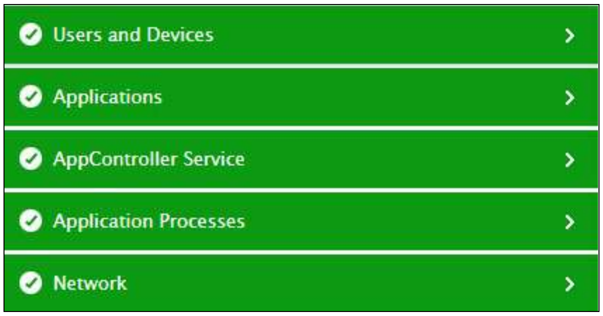


Figure 2.1: The layer model of a Citrix AppController

Each layer of this model is mapped to tests that use either/both of the following mechanisms to pull out performance statistics related to the health and operations of the AppController:

- The eG tests connect to the AppController's management console to pull out a wide range of metrics, and/or;
- The eG tests parse a Syslog file created on the remote Syslog server used by the ApController for collecting metrics.

To use these mechanisms, the following pre-requisites need to be fulfilled:

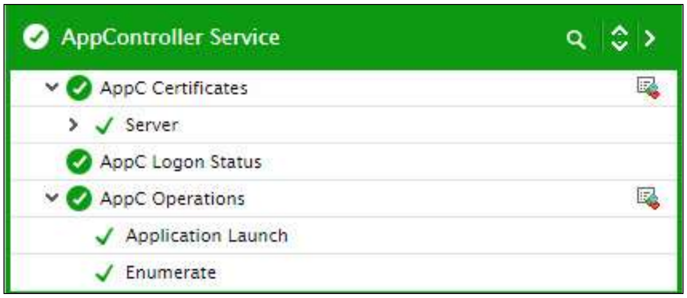
- The eG agent should be deployed on the Syslog server that hosts the Syslog file used for metrics collection.
- The eG agent has to be configured with the credentials of a user to AppController who is vested with 'Administrator' privileges.

Using the metrics so collected, administrators can ascertain the following:

- Is the AppController management console accessible? If so, how quickly are users able to connect to the console?
- Is any SSL certificate installed on the AppController nearing expiry? If so, which one is it?
- Are there any issues logging into AppController?
- What is the current session load on the AppController? Which devices are currently connected to the AppController?
- Which are the popular applications on the AppController, on the basis of the number of launches? Which is the receiver that is used most often for accessing applications on the AppController?
- Have any applications been configured to not run on jail broken or rooted devices? Which applications are these?
- Which applications block the use of the camera, microphone, and SMS composition?

The sections that follow will take you on a layer-by-layer tour of the *Citrix AppController* monitoring model. However, since the tests associated with the **Network** layer layer have been already dealt with in detail in the *Monitoring Unix and Windows Servers* document this chapter will focus on the other layers only.

2.1 The AppController Service Layer



AppController Service

AppC Certificates

Server

AppC Logon Status

AppC Operations

Application Launch

Enumerate

Figure 2.2: The tests mapped to the AppController Service layer

2.1.1 AppC Certificates Test

In App Controller, certificates are used to create secure connections and authenticate users.

To establish a secure connection, a server certificate is required at one end of the connection. A root certificate of the Certificate Authority (CA) that issued the server certificate is required at the other end.

- **Server certificate**. A *server certificate* certifies the identity of a server. App Controller requires this type of digital certificate.

- **Root certificate.** A *root certificate* identifies the CA that signed the server certificate. The root certificate belongs to the CA. The user device requires this type of digital certificate to verify the server certificate.

You can configure certificate chains, which contain intermediate certificates, between the server certificate and the root certificate. Both root certificates and intermediate certificates are referred to as *trusted certificates*.

App Controller requires root and server certificates to communicate in the following ways:

- Between App Controller and the App Controller management console

- Between applications and App Controller

- Between App Controller and StoreFront

If an active certificate (be it a server, root, or an intermediate certificate) suddenly expires, applications will no longer be able to communicate with AppController and vice-versa. To avoid this, administrators should proactively identify certificates nearing expiry and renew the certificates. This is where the **AppC Certificates** test helps. This test captures the expiry date of all active certificates, computes how long each active certificate will remain valid, and proactively alerts administrators if any certificate is nearing expiry.

Purpose	Captures the expiry date of all active certificates, computes how long each active certificate will remain valid, and proactively alerts administrators if any certificate is nearing expiry
Target of the test	Citrix ShareFile

Agent deploying the test	A remote agent		
Configurable parameters for the test	1. **TEST PERIOD** - How often should the test be executed 2. **HOST -** The host for which the test is to be configured. 3. **PORT** – The port at which the **HOST** listens. By default, this is *NULL*. 4. **REPORT ONLY ACTIVE CERTIFICATES** – By default, this flag is set to **Yes**, indicating that this test reports the validity of active certificates only. To ensure that the test reports the validity of all certificates, set this flag to **No**. 5. **USERNAME** and **PASSWORD** – To pull out metrics, this test needs to login to the AppController's management console as a user with **Administrator** rights to AppController. For this purpose, you need to configure this test with the **USERNAME** and **PASSWORD** of a user with **Administrator** rights to the AppController. 6. **CONFIRM PASSWORD** – Confirm the **PASSWORD** by retyping it here. 7. **SSL** – Indicate whether/not AppController is SSL-enabled. By default, this flag is set to **Yes**. 8. **DETAILED DIAGNOSIS** - To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the **On** option. To disable the capability, click on the **Off** option. The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled: • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.		
Outputs of the test	One set of results for every active SSL certificate installed on the AppController		
Measurements made by the	**Measurement**	**Measurement Unit**	**Interpretation**

<table>
<tr><td><b>test</b></td><td><b>Status:</b>
Indicates the current status of this SSL certificate.</td><td></td><td>The values that this measure reports and their corresponding numeric values are listed in the table below:
<table>
<tr><th>Measure Value</th><th>Numeric Value</th></tr>
<tr><td>Active</td><td>1</td></tr>
<tr><td>Expired</td><td>0</td></tr>
</table>
<b>Note:</b>
By default, this measure reports the <b>Measure Values</b> discussed in the table above. However, in the graph of this measure, the status of the certificate is indicated using the numeric equivalents only.</td></tr>
<tr><td></td><td><b>Valid upto:</b>
Indicates how long this certificate will remain valid.</td><td>Days</td><td>A high value is desired for this measure. A very low value indicates that the certificate is about to expire very soon. You may want to consider renewing the certificate before this eventuality strikes.
Use the detailed diagnosis of this measure to know the exact date on which the certificate will expire.</td></tr>
</table>

2.1.2 AppC Logon Status Test

Frequent login failures and inexplicable delays when accessing the AppController can have an adverse impact on a user's experience with AppController. To capture such failures/delays proactively and isolate their root-cause, administrators can use the **AppC Logon Status** test. At configured intervals, this test emulates a user logging into AppController. In the process, the test captures every step of the user login and reports the time taken at each step. This way, unusual slowness in logging in can be captured and where the login process was delayed can be determined – when connecting to the AppController? Or when authenticating?

Purpose	At configured intervals, this test emulates a user logging into AppController. In the process, the test captures every step of the user login and reports the time taken at each step. This way, unusual slowness in logging in can be captured and where the login process was delayed can be determined – when connecting to the AppController? Or when authenticating?
Target of the test	Citrix AppController
Agent deploying the test	A remote agent

<table>
<tr><td><b>Configurable parameters for the test</b></td><td colspan="3">1. <b>TEST PERIOD</b> - How often should the test be executed
2. <b>HOST -</b> The host for which the test is to be configured.
3. <b>PORT</b> – The port at which the <b>HOST</b> listens. By default, this is <i>NULL</i>.
4. <b>USERNAME</b> and <b>PASSWORD</b> – To pull out metrics, this test needs to login to the AppController’s management console as a user with <b>Administrator</b> rights to AppController. For this purpose, you need to configure this test with the <b>USERNAME</b> and <b>PASSWORD</b> of a user with <b>Administrator</b> rights to the AppController.
5. <b>CONFIRM PASSWORD</b> – Confirm the <b>PASSWORD</b> by retyping it here.
6. <b>SSL</b> – Indicate whether/not AppController is SSL-enabled. By default, this flag is set to <b>Yes</b>.</td></tr>
<tr><td><b>Outputs of the test</b></td><td colspan="3">One set of results for the AppController monitored</td></tr>
<tr><td><b>Measurements made by the test</b></td><td><b>Measurement</b></td><td><b>Measurement Unit</b></td><td><b>Interpretation</b></td></tr>
<tr><td></td><td><b>Connection status:</b>
Indicates whether/not the user could connect to the AppController.</td><td></td><td>The values that this measure reports and their corresponding numeric values are listed in the table below:
<table>
<tr><th>Measure Value</th><th>Numeric Value</th></tr>
<tr><td>Success</td><td>1</td></tr>
<tr><td>Failed</td><td>0</td></tr>
</table>
<b>Note:</b>
By default, this measure reports the <b>Measure Values</b> discussed in the table above. However, in the graph of this measure, the status of the connection is indicated using the numeric equivalents only.</td></tr>
<tr><td></td><td><b>Time taken to connect:</b>
Indicates the time taken to connect to the AppController.</td><td>Secs</td><td>A low value is desired for this measure. A high value indicates a connection bottleneck.</td></tr>
</table>

<table>
<tr><td></td><td><b>Authentication status:</b>
Indicates whether/not the login credentials of the user were successfully authenticated.</td><td></td><td>The values that this measure reports and their corresponding numeric values are listed in the table below:
<table><tr><th>Measure Value</th><th>Numeric Value</th></tr><tr><td>Success</td><td>1</td></tr><tr><td>Failed</td><td>0</td></tr></table>
<b>Note:</b>
By default, this measure reports the <b>Measure Values</b> discussed in the table above. However, in the graph of this measure, the status of the authentication is indicated using the numeric equivalents only.</td></tr>
<tr><td></td><td><b>Time taken to authenticate:</b>
Indicates the time taken to authenticate the user login.</td><td>Secs</td><td>A high value for this measure could indicate an authentication delay.</td></tr>
<tr><td></td><td><b>Time taken to login:</b>
Indicates the total time taken to login.</td><td>Secs</td><td>A high value indicates a login delay. In this case, you can compare the value of the <i>Time taken to connect</i> and <i>Time taken to authenticate</i> measures to know where the login was bottlenecked.</td></tr>
</table>

2.1.3 AppC Operations Test

If a user complains that his/her transactions with the AppController are failing, administrators may first want to know which steps of the user interactions are failing often. The **AppC Operations** test provides administrators with this useful information. This test scans the AppController Syslog file for the type of operations users performed on AppController. For every operation so discovered, this test then reports the number of times that operation succeeded and the number of times it failed. This way, the test highlights those operations that failed very often and caused the user experience with the AppController to suffer.

For this test to run and report metrics, the AppController should be configured to create a Syslog file in a remote Syslog server, where the details and status of all user interactions with the AppController will be logged. To configure the Syslog server where this Syslog file should be created, do the following:

- Connect to the AppController management console using the URL: **Error! Hyperlink reference not valid.**>
- Login to the AppController as an *administrator*.
- Figure 2.3 will then appear. Click the **Settings** option in Figure 2.3.

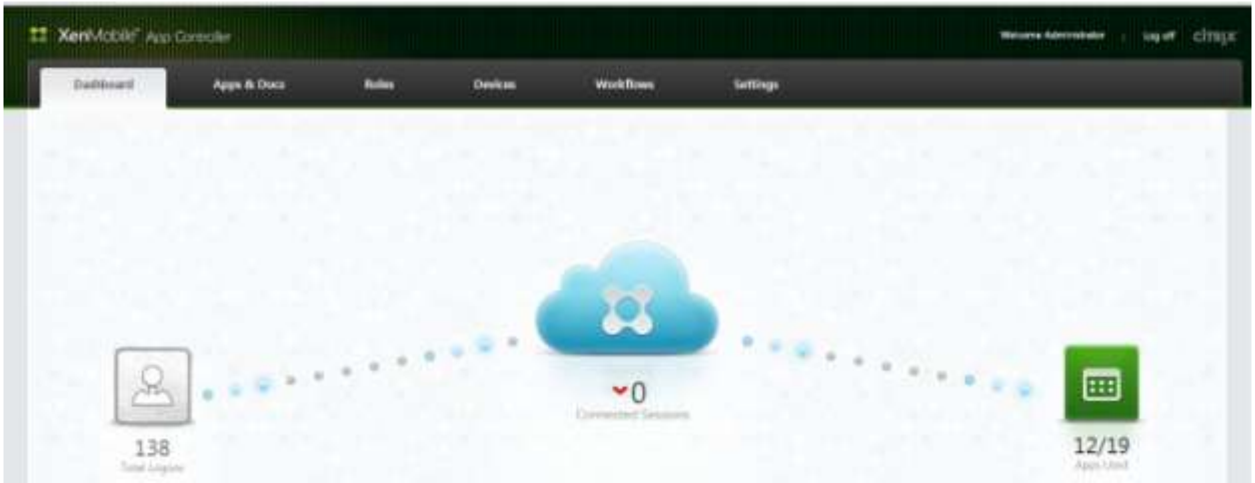
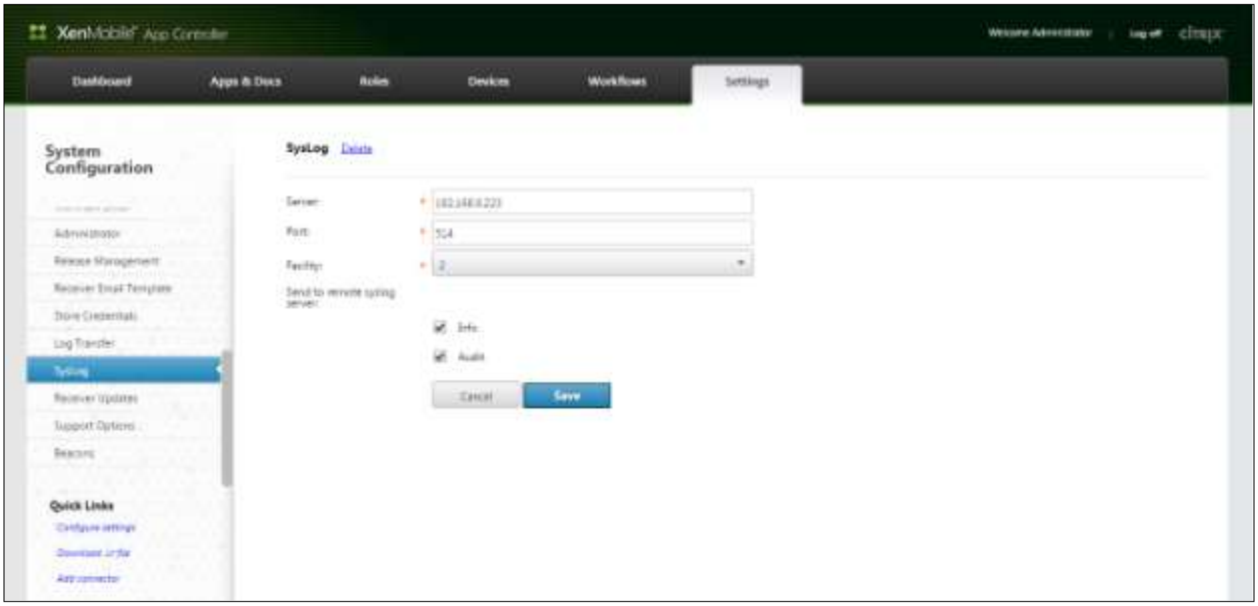


Figure 2.3: The AppController management console

- Next, scroll down the **System Configuration** panel of Figure 2.4 until the **Syslog** option becomes visible. Then, click the **Syslog** option. This will bring up a **Syslog** page in the right panel, where you can configure a remote Syslog server and enable Syslog file creation on the server.



Server: * 192.168.8.223

Port: * 514

Facility: * 2

Send to remote syslog server:

☑ Info

☑ Audit

Figure 2. 4: Configuring the Syslog server where the Syslog file is to be created

- To configure a new Syslog server, enter the IP address of the Syslog server in the **Server** text box of Figure 2.4.

- Enter the **Port** at which the Syslog server listens.

- Let the **Facility** remain at *2*.

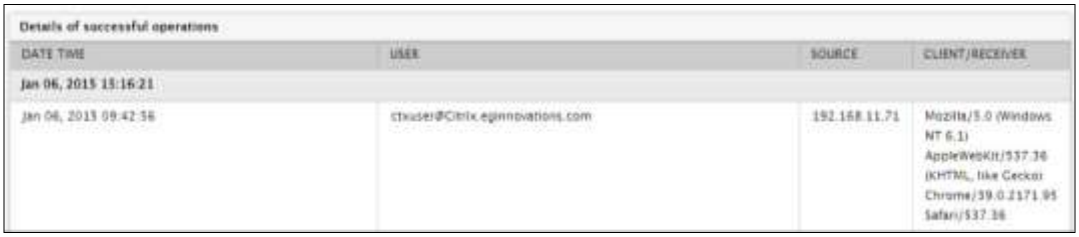
- Then, indicate what details should be logged in the Syslog file that will be created in the specified Syslog server. For the eG tests to work, at least the **Audit** check box should be selected.

- Click the **Save** button in Figure 2.4 to register the changes.

<table>
<tr><td><b>Purpose</b></td><td colspan="3">Scans the Syslog file for the type of operations users performed on AppController. For every operation so discovered, this test then reports the number of times that operation succeeded and the number of times it failed. This way, the test highlights those operations that failed very often, resulting in a poor user experience with the AppController.</td></tr>
<tr><td><b>Target of the test</b></td><td colspan="3">Citrix AppController</td></tr>
<tr><td><b>Agent deploying the test</b></td><td colspan="3">A remote agent</td></tr>
<tr><td><b>Configurable parameters for the test</b></td><td colspan="3">1. <b>TEST PERIOD</b> - How often should the test be executed
2. <b>HOST -</b> The host for which the test is to be configured.
3. <b>PORT</b> – The port at which the <b>HOST</b> listens. By default, this is <i>NULL</i>.
4. <b>LOG FILE PATH</b> – This test reports metrics by parsing a Syslog file. Specify the full path to the Syslog file here. To know how to configure the Syslog server where the AppController will be creating this file, refer to page 8 of this document.
5. <b>SSL</b> – Indicate whether/not AppController is SSL-enabled. By default, this flag is set to <b>Yes</b>.
6. <b>DETAILED DIAGNOSIS</b> - 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 <b>On</b> option. To disable the capability, click on the <b>Off</b> 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.</td></tr>
<tr><td><b>Outputs of the test</b></td><td colspan="3">One set of results for every operation users performed on the AppController</td></tr>
<tr><td><b>Measurements made by the test</b></td><td><b>Measurement</b></td><td><b>Measurement Unit</b></td><td><b>Interpretation</b></td></tr>
<tr><td></td><td><b>Successful operations:</b>
Indicates the number of times this operation succeeded.</td><td>Number</td><td>A high value is desired for this measure.
Use the detailed diagnosis of this measure to view the names of the users who succeeded in performing an operation, when they performed the operation, and the client/receiver each user used for this purpose.</td></tr>
</table>

	Failed operations: Indicates the number of times this operation failed.	Number	A very low value is desired for this measure. Use the detailed diagnosis of this measure to view the names of the users who failed to perform a particular operation, when they tried to perform that operation, and the client/receiver each user used for this purpose.

The detailed diagnosis of the *Successful operations* measure reveals the names of the users who succeeded in performing an operation, when they performed the operation, and the client/receiver each user used for this purpose.



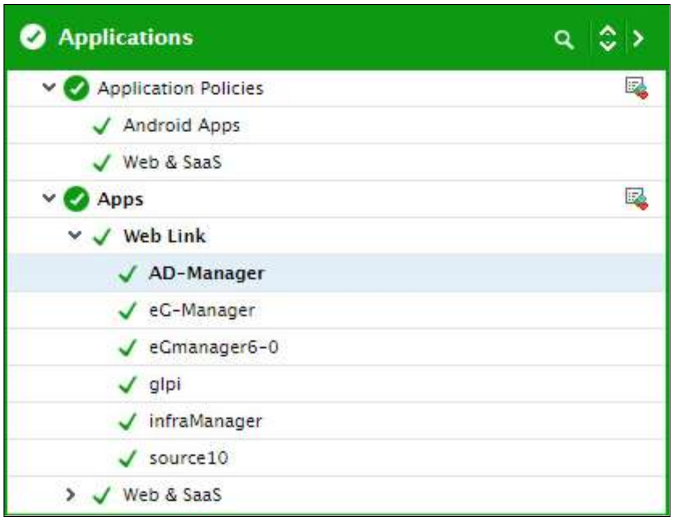
Details of successful operations

DATE TIME	USER	SOURCE	CLIENT/RECEIVER
Jan 06, 2015 15:16:21			
Jan 06, 2015 09:42:56	ctxuser@Citrix.eginnovations.com	192.168.11.71	Mozilla/5.0 (Windows NT 6.1) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/39.0.2171.95 Safari/537.36

Figure 2.5: The detailed diagnosis of the Successful operations measure

2.2 The Applications Layer

Using the tests mapped to this layer, application launches can be audited and the effectiveness of application policies can be measured.



Applications

- Application Policies
  - Android Apps
  - Web & SaaS
- Apps
  - Web Link
    - AD-Manager
    - eG-Manager
    - eGmanager6-0
    - glpi
    - infraManager
    - source10
  - Web & SaaS

Figure 2.6: The tests mapped to the Applications layer

2.2.1 Application Policies Test

You can set policies for mobile apps in the App Controller management console. Application policies for Android or iOS apps fall into the following three main categories:

- **Information security**. These policies are designed to protect app data and documents. The policies dictate how information can be exchanged between apps. You can configure settings for the app to allow or prevent user access to such operations as printing, email, text messaging, and use of the device camera.

- **Application access**. These policies determine the logon requirements users must meet in order to open an app. You can configure authentication methods, settings to prevent apps from running on a jailbroken, or rooted, device, network connection requirements, and conditions for locking or erasing app data.

- **Network**. These policies determine the network settings for traffic to and from the app. You can configure the following settings: allow unrestricted access to the internal network, redirect traffic through XenMobile App Edition by using a VPN tunnel specific to each app, or block all traffic from accessing the internal network.

Application policies for Web & SaaS apps on the other hand, fall into the following categories:

- **Device security:** This policy prevents jail broken or rooted devices from accessing apps.
- **Network:** These policies determine the network settings for communicating with the app.

Periodically, administrators will have to review these policies, identify the applications on which these policies have been configured, and decide whether the restrictions imposed by the policies on the applications should continue, should be made stronger, or can be lifted. The **Application Policies** test helps administrators in this exercise. For each category of applications delivered by the AppController, this test reports the number of applications (of that type/category) on which certain key usage policies have been enforced. Detailed metrics collected by this test also reveal the names of these applications. Using this information, administrators can quickly identify where policy changes may have to be effected.

Purpose	For each category of applications delivered by the AppController, this test reports the number of applications (of that type/category) on which certain key usage policies have been enforced
Target of the test	Citrix AppController
Agent deploying the test	A remote agent
Configurable parameters for the test	1. **TEST PERIOD** - How often should the test be executed 2. **HOST -** The host for which the test is to be configured. 3. **PORT** – The port at which the **HOST** listens. By default, this is *NULL*. 4. **USERNAME** and **PASSWORD** – To pull out metrics, this test needs to login to the AppController's management console as a user with **Administrator** rights to AppController. For this purpose, you need to configure this test with the **USERNAME** and **PASSWORD** of a user with **Administrator** rights to the AppController. 5. **CONFIRM PASSWORD** – Confirm the **PASSWORD** by retyping it here. 6. **SSL** – Indicate whether/not AppController is SSL-enabled. By default, this flag is set to **Yes**.

Outputs of the test	One set of results for each category of applications delivered by the AppController monitored		
Measurements made by the test	**Measurement**	**Measurement Unit**	**Interpretation**
	Application blocking jailbroken or rooted devices: Indicates the number of applications of this type that have been configured to not run on jailbroken or rooted devices.	Number	Use the detailed diagnosis of this measure to identify those applications that will not run on jailbroken or rooted devices.
	Device pin or password required applications: Indicates the number of applications of this type that can be accessed only when a device pin or a password is provided.	Number	Use the detailed diagnosis of this measure to identify those applications that support password- or pin-protected access.
	Camera blocking applications: Indicates the number of applications of this type that prevent the use of the camera.	Number	Use the detailed diagnosis of this measure to identify those applications that block camera usage.
	Microphone blocking applications: Indicates the number of applications of this type that do not allow the use of a microphone.	Number	Use the detailed diagnosis of this measure to identify those applications that disallow microphone usage.
	Location services blocking applications: Indicates the count of applications of this type that prevent the use of location services (eg., GPS or network).	Number	Use the detailed diagnosis of this measure to know which applications prevent the use of location services.
	“SMS Compose” blocking applications: Indicates the number of applications of this type that block SMS (compose).	Number	Use the detailed diagnosis of this measure to know which applications block SMS.

	"Screen Capture" blocking applications: Indicates the number of applications of this type that prevent a user-initiated screen capture when running.	Number	Use the detailed diagnosis of this measure to know which applications block screen capture operations.
	Device sensors blocking applications: Indicates the number of applications of this type that do not permit the use of device sensors, like accelerometer, motion sensor, or gyroscope.	Number	Use the detailed diagnosis of this measure to know which applications do not allow the use of device sensors.
	Application logs blocking applications: Indicates the number of applications of this type that block application logs.	Number	Use the detailed diagnosis of this measure to know which applications do not allow the logging of application events.
	Full VPN tunnel enabled applications: Indicates the number of applications of this type that use an application-specific VPN tunnel through Netscaler Gateway for accessing the internal network.	Number	Use the detailed diagnosis of this measure to know which applications use a VPN tunnel to access the internal network.
	"Access limits for public files" applications: Indicates the number of applications of this type that have been configured with 'Access limits for public files'.	Number	In the App Controller management console, administrators can set the **Access limits for public files** policy for an application. This contains a comma-separated list. Each entry is a regular expression path followed by (NA), (RO), or (RW). Files matching the path are limited to No Access, Read Only, or Read Write access. The list is processed in order and the first matching path is used to set the access limit. This policy is enforced only when the **Public file encryption** policy is enabled (changed from the **Disable** option to the **SecurityGroup** or **Application** option). This policy is applicable only to existing, unencrypted public files and specifies when these files are encrypted. Use the detailed diagnosis of this measure to know for which applications access limits have been configured for public files.

	Wifi require applications: Indicates the number of applications of this type that have been set to run only when the device is connected to a Wifi network.	Number	Use the detailed diagnosis of this measure to know which applications require a Wifi connection for execution.
	"Network access" blocking applications: Indicates the number of applications of this type that have block all network access for the device they run on.	Number	Use the detailed diagnosis of this measure to know which applications block network access for the devices they run on.

2.2.2 Apps Test

This test auto-discovers the applications configured on the AppController and reports the number of successful and failed launches per application.

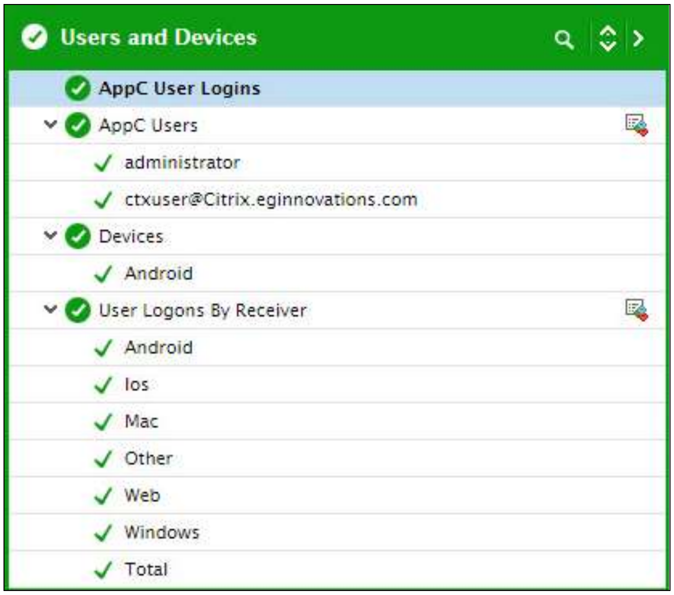
For this test to run and report metrics, the AppController should be configured to create a Syslog file in a remote Syslog server, where the details and status of all user interactions with the AppController will be logged. To know how to configure a remote Syslog server for the use of the AppController, refer to Page 8 of this document.

Purpose	Auto-discovers the applications configured on the AppController and reports the number of successful and failed launches per application
Target of the test	Citrix AppController
Agent deploying the test	A remote agent

Configurable parameters for the test	1. **TEST PERIOD** - How often should the test be executed 2. **HOST -** The host for which the test is to be configured. 3. **PORT** – The port at which the **HOST** listens. By default, this is *NULL*. 4. **LOG FILE PATH** – This test reports metrics by parsing a Syslog file. Specify the full path to the Syslog file here. To know how to configure the Syslog server where the AppController will be creating this file, refer to page 8 of this document. 5. **USERNAME** and **PASSWORD** – To discover the applications configured on the AppController, this test needs to login to the AppController's management console as a user with **Administrator** rights to AppController. For this purpose, you need to configure this test with the **USERNAME** and **PASSWORD** of a user with **Administrator** rights to the AppController. 6. **CONFIRM PASSWORD** – Confirm the **PASSWORD** by retyping it here. 7. **SSL** – Indicate whether/not AppController is SSL-enabled. By default, this flag is set to **Yes**. 8. **DETAILED DIAGNOSIS** - To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the **On** option. To disable the capability, click on the **Off** option. The option to selectively enable/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled: • The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.		
Outputs of the test	One set of results each application configured on the AppController		
Measurements made by the test	**Measurement**	**Measurement Unit**	**Interpretation**
	Number of successful application launches: Indicates the number of times this application was launched successfully during the last measurement period.	Number	Use the detailed diagnosis of this measure to view the names of the users who successfully launched the application, when they launched, and the client/receiver each user used.
	Number of failed application launches: Indicates the number of times this application was launched unsuccessfully during the last measurement period.	Number	Compare the value of this measure acros applications to know which application failed very often. Use the detailed diagnosis of this measure to view the names of the users for whom application launches failed, when they attempted to launch, and the client/receiver that was used for the attempt.

2.3 The User and Devices Layer

The tests mapped to this layer track user logins to the AppController, measures the logon duration per user, and pinpoints the root-cause of logon slowness. In addition, this layer also keeps an eye on the devices connected to the AppController, and points to those devices that have been locked/erased.



✓ Users and Devices

- ✓ AppC User Logins
- ✓ AppC Users
  - ✓ administrator
  - ✓ ctxuser@Citrix.eginnovations.com
- ✓ Devices
  - ✓ Android
- ✓ User Logons By Receiver
  - ✓ Android
  - ✓ Ios
  - ✓ Mac
  - ✓ Other
  - ✓ Web
  - ✓ Windows
  - ✓ Total

Figure 2. 7: The tests mapped to the User and Devices layer

2.3.1 AppC User Logins Test

By tracking user sessions to the AppController, the **AppC User Logins** test helps administrators gauge the workload of the AppController and quickly capture failed login attempts.

For this test to run and report metrics, the AppController should be configured to create a Syslog file in a remote Syslog server, where the details and status of all user interactions with the AppController will be logged. To know how to configure a remote Syslog server for the use of the AppController, refer to Page 8 of this document.

Purpose	By tracking user sessions to the AppController, the **AppC User Logins** test helps administrators gauge the workload of the AppController and quickly capture failed login attempts.
Target of the test	Citrix AppController
Agent deploying the test	A remote agent

Configurable parameters for the test	1. **TEST PERIOD** - How often should the test be executed 2. **HOST -** The host for which the test is to be configured. 3. **PORT** – The port at which the **HOST** listens. By default, this is *NULL*. 4. **LOG FILE PATH** – This test reports metrics by parsing a Syslog file. Specify the full path to the Syslog file here. To know how to configure the Syslog server where the AppController will be creating this file, refer to page 8 of this document. 5. **SSL** – Indicate whether/not AppController is SSL-enabled. By default, this flag is set to **Yes**.		
Outputs of the test	One set of results for the AppController		
Measurements made by the test	**Measurement**	**Measurement Unit**	**Interpretation**
	Connected sessions: Indicates the total number of users currently connected to the AppController.	Number	This is a good indicator of the current session load on the AppController.
	New logins: Indicates the number of users who logged in during the last measurement period.	Number	
	Percentage of new logins: Indicates the percentage of users who logged in recently.	Percent	
	Session logouts: Indicates the number of sessions that logged out during the last measurement period.	Number	A sudden increase in the value of this measure could warrant closer scrutiny.
	Failed logins: Indicates the number of logins that failed.	Number	A low value is desired for this measure.

2.3.2 AppC Users Test

To assess a user's experience with the AppController, administrators must track a user's sessions on the AppController and audit the quality of the application launches attempted by that user. The **AppC Users** test does exactly this! This test auto-discovers the users who are currently logged into the AppController, and for each user, reports the open sessions for that user and the number of successful and failed application launches per user. This way, the test points to those users with the maximum number of failed application launches. Such users naturally are the ones with a poor quality experience with the AppController.

For this test to run and report metrics, the AppController should be configured to create a Syslog file in a remote Syslog server, where the details and status of all user interactions with the AppController will be logged. To know how to configure a remote Syslog server for the use of the AppController, refer to Page 8 of this document.

Purpose	Auto-discovers the users who are currently logged into the AppController, and for each user, reports the open sessions for that user and the number of successful and failed application launches per user		
Target of the test	Citrix AppController		
Agent deploying the test	A remote agent		
Configurable parameters for the test	1. **TEST PERIOD** - How often should the test be executed 2. **HOST -** The host for which the test is to be configured. 3. **PORT** – The port at which the **HOST** listens. By default, this is *NULL*. 4. **LOG FILE PATH** – This test reports metrics by parsing a Syslog file. Specify the full path to the Syslog file here. To know how to configure the Syslog server where the AppController will be creating this file, refer to page 8 of this document. 5. **SHOW OTHER USERS** – The test discovers the users who are currently logged into the AppController by reading the entries in the *User* column of the specified syslog file. Sometimes, this column may have a few blank entries. By default, this test ignores these blank entries. This is why, the **SHOW OTHER USERS** flag is set to **No** by default. If you set this flag to **Yes**, then the test will report metrics for these blank entries as well. In this case, the test will additionally report a set of metrics for an **Others** descriptor. Each measure of the **Others** descriptor will report a value that is an aggregate of the values recorded for the blank entries in the Syslog file. 6. **SSL** – Indicate whether/not AppController is SSL-enabled. By default, this flag is set to **Yes**. 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.		
Outputs of the test	One set of results for each user to the AppController		
Measurements made by the	**Measurement**	**Measurement Unit**	**Interpretation**

test	**User sessions:** Indicates the number of open sessions for this user currently.	Number	This is a good indicator of the session load imposed by a particular user on the AppController. In the event of a session overload, you can compare the value of this measure across users to know which user has contributed to the overload. Use the detailed diagnosis of this measure to know which applications are being accessed by a user and which client/receiver that user is using to launch the application.
	Successful application launches: Indicates the number of successful application launches for this user.	Number	Use the detailed diagnosis of this measure to know which applications were successfully launched by a user and which client/receiver that user used to launch each application.
	Failed application launches: Indicates the number of application launches that failed for this user.	Percent	Use the detailed diagnosis of this measure to know which applications a user could not launch and which client/receiver that user used to launch each application.

2.3.3 Devices Test

Tracking the devices connected to the AppController will not only indicate the current device load on the AppController, but will also shed light on the current device status. Based on this status information, administrators can determine whether/not device status needs to be changed. This is exactly what the **Devices** test enables administrators to perform. This test reports the number of devices currently connected to AppController and also reveals the number and names of the connected devices that are locked and/or erased. If a user complains that he/she is unable to access some applications, then administrators can use this information to quickly determine whether the user device is indeed 'authorized' to access the applications or have been locked out or erased. Using the same information, administrators can also determine whether the user device is now 'safe' for use and can hence be unlocked or need not be erased.

Purpose	Reports the number of devices currently connected to AppController and also reveals the number and names of the connected devices that are locked and/or erased
Target of the test	Citrix AppController
Agent deploying the test	A remote agent

<table>
<tr><td><b>Configurable parameters for the test</b></td><td colspan="3">1. <b>TEST PERIOD</b> - How often should the test be executed
2. <b>HOST -</b> The host for which the test is to be configured.
3. <b>PORT</b> – The port at which the <b>HOST</b> listens. By default, this is <i>NULL</i>.
4. <b>USERNAME</b> and <b>PASSWORD</b> – To pull out metrics, this test needs to login to the AppController’s management console as a user with <b>Administrator</b> rights to AppController. For this purpose, you need to configure this test with the <b>USERNAME</b> and <b>PASSWORD</b> of a user with <b>Administrator</b> rights to the AppController.
5. <b>CONFIRM PASSWORD</b> – Confirm the <b>PASSWORD</b> by retyping it here.
6. <b>SSL</b> – Indicate whether/not AppController is SSL-enabled. By default, this flag is set to <b>Yes</b>.
7. <b>DETAILED DIAGNOSIS</b> - 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 <b>On</b> option. To disable the capability, click on the <b>Off</b> 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.</td></tr>
<tr><td><b>Outputs of the test</b></td><td colspan="3">One set of results for the AppController monitored</td></tr>
<tr><td><b>Measurements made by the test</b></td><td><b>Measurement</b></td><td><b>Measurement Unit</b></td><td><b>Interpretation</b></td></tr>
<tr><td></td><td><b>Total devices:</b>
Indicates the total number of devices currently connected to the AppController.</td><td>Number</td><td>This is a good indicator of the current device load on the AppController.</td></tr>
<tr><td></td><td><b>Locked devices:</b>
Indicates the number of devices connected to AppController that are locked.</td><td>Number</td><td>If users lose an iOS or Android device, you can lock applications on the device that App Controller delivers, which prevents unauthorized access to the applications. Once the device is found, you can unlock the applications on that device.
Use the detailed diagnosis of this measure to identify the devices on which applications have been locked.</td></tr>
</table>

	Erased devices: Indicates the number of devices connected to AppController that have been erased.	Number	If users lose an iOS or Android device and do not locate the device in a specified period of time, or if the user leaves the organization, you can erase application data and ShareFile documents from the user device. If you determine that the device is safe, you can stop erasing the data and documents on the device. Use the detailed diagnosis of this measure to identify the devices on which application data and ShareFile documents have been erased.

2.3.4 User Logons by Receiver Test

To know which receiver is used by most of the users connecting to AppController, take the help of the **User Logons by Receiver** test. For every receiver connecting to the AppController, this test reports the total number of users currently logged in via that receiver; a quick comparison of user logons across receivers will point you to the most popular receiver.

Purpose	For every receiver connecting to the AppController, this test reports the total number of users currently logged in via that receiver; a quick comparison of user logons across receivers will point you to the most popular receiver		
Target of the test	Citrix AppController		
Agent deploying the test	A remote agent		
Configurable parameters for the test	1. **TEST PERIOD** - How often should the test be executed 2. **HOST -** The host for which the test is to be configured. 3. **PORT** – The port at which the **HOST** listens. By default, this is *NULL*. 4. **USERNAME** and **PASSWORD** – To pull out metrics, this test needs to login to the AppController's management console as a user with **Administrator** rights to AppController. For this purpose, you need to configure this test with the **USERNAME** and **PASSWORD** of a user with **Administrator** rights to the AppController. 5. **CONFIRM PASSWORD** – Confirm the **PASSWORD** by retyping it here. 6. **SSL** – Indicate whether/not AppController is SSL-enabled. By default, this flag is set to **Yes**.		
Outputs of the test	One set of results each receiver connecting to the AppController		
Measurements made by the	**Measurement**	**Measurement Unit**	**Interpretation**

test	**Number of users currently on:** Indicates the number of users currently logged into AppController via this receiver.	Number	Compare the value of this measure across receivers to know which receiver was used by most of the users logged in currently.
	Local users: Indicates the number of users from the internal network who logged into AppController via this receiver.	Number	
	External users: Indicates the number of users who used this receiver to log into AppController from outside the internal network (for example, users who connect from the Internet or from remote locations).	Number	

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 AppController**. 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.