



Monitoring Citrix License Server

eG Innovations Product Documentation

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Chapter 2: Introduction

Every Citrix Access Suite product environment must have at least one shared or dedicated license server. Citrix Access Suite products seek permission from this license server to run. The first time a user connects to a Citrix Access Suite product (for example, the user starts a published application), the product requests a license from the license server. When the license server grants a license request, the Citrix Access Suite product reserves a license for its use. Reserving licenses for this purpose is known as *checking out licenses*. When the user logs off from the product server, the product returns the license to the license server. This process is known as *checking in licenses*. Citrix Access Suite products use a continuously open connection to the license server to check out licenses. Every time a Citrix Access Suite product starts, it opens a connection to the license server by checking out the *startup license*. The startup license is a Citrix system file that enables Citrix Access Suite products to maintain a connection to the license server. The following figure shows that each product on a server forms its own constant connection to the license server.

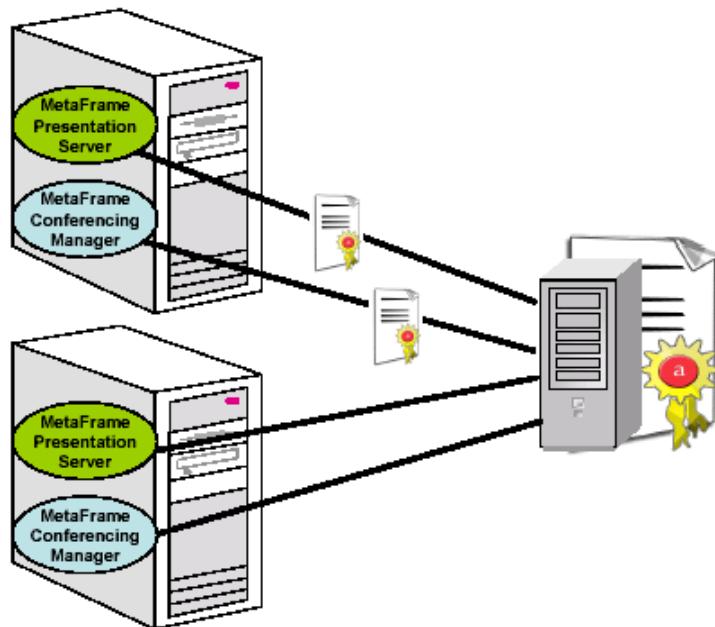


Figure 2.1: Each product making a continuous connection to the license server

Each product on a server makes a continuous connection to the license server. The license server can support up to 2000 continuous connections. If connections to the license server fail, then naturally, it would result in the user being denied access to a critical Citrix Access Suite product; if the failure persists or occurs frequently, then the user is bound to be dissatisfied with the quality of the service. In order to avoid such situations, connection and operational issues of the license server

should be detected and resolved at the earliest, so that users have no cause for complaints. Continuous monitoring of the connections to the License server, and thorough monitoring of the key functions performed by the server can alone ensure service continuity. This where eG Enterprise helps administrators!

Chapter 3: How to Monitor Citrix License Server Using eG Enterprise?

eG Enterprise can monitor the Citrix license Server in both agent based and agentless manner. To monitor the server in an agentless manner, you need to deploy an eG agent on a remote Windows host in the environment. To start monitoring the server, first you have to manage the Citrix License server component using the eG administrative interface. The steps for achieving this have been explained in the following section.

3.1 Managing the Citrix License server

1. Log into the eG administrative interface.
2. If a Citrix license server is already discovered, then directly proceed towards managing it using the **COMPONENTS - MANAGE/UNMANAGE** page (Infrastructure -> Components -> Manage/Unmanage). However, if it is yet to be discovered, then run discovery (Infrastructure -> Components -> Discovery) to get it discovered or add the license server manually using the **COMPONENTS** page (Infrastructure -> Components -> Add/Modify). Remember that components manually added are managed automatically. Discovered components, however, are managed using the **COMPONENTS - MANAGE/UNMANAGE** page. Figure 3.1 and Figure 3.2 clearly illustrate the process of managing a Citrix License server.

Figure 3.1: Selecting the Citrix License server to be managed

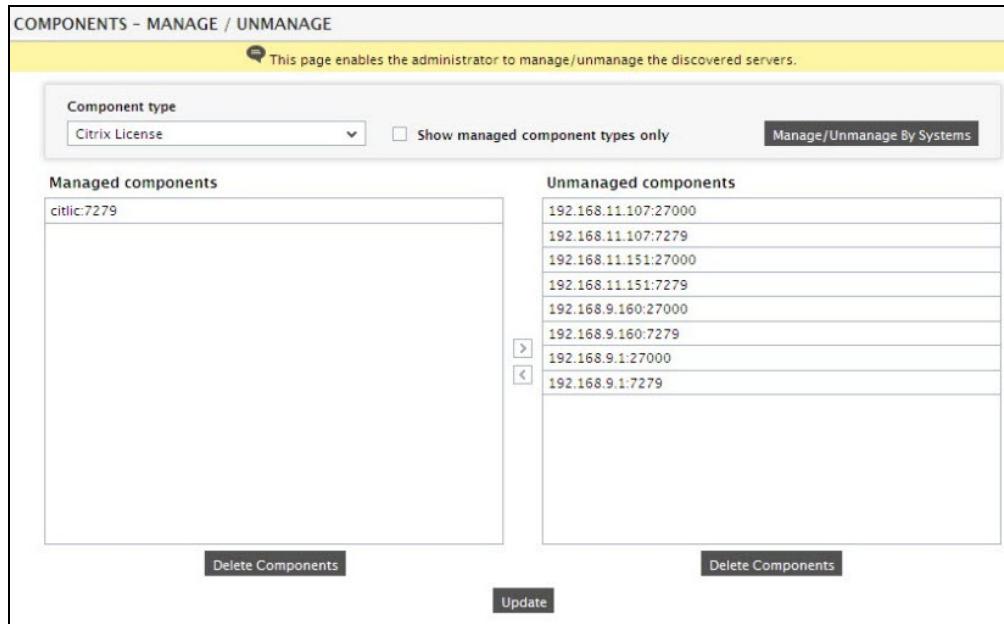


Figure 3.2: Managing the Citrix License server

3. Next, sign out of the eG administrative interface.

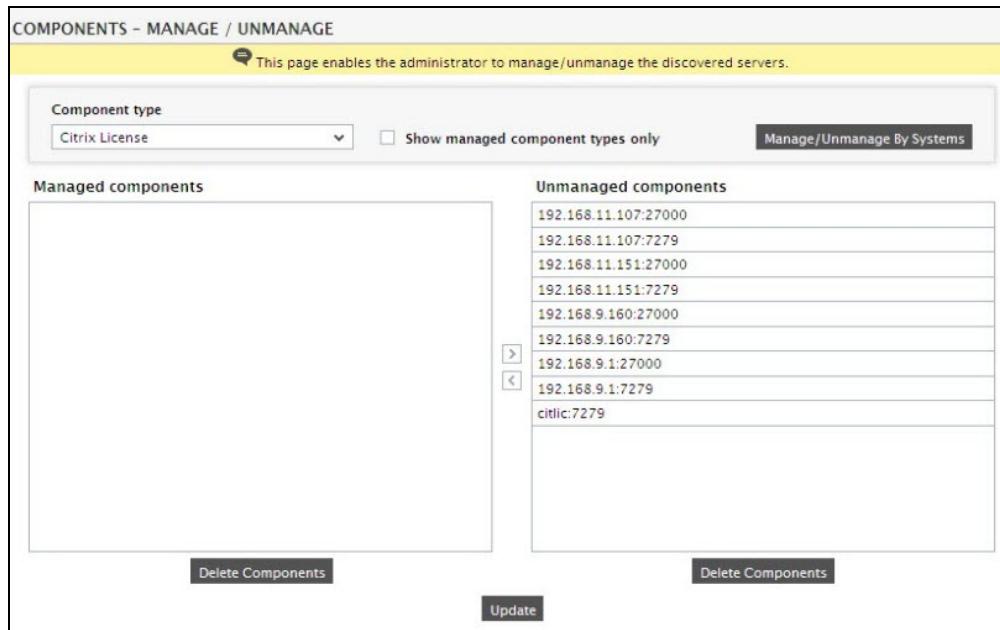
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3.2 Managing the Citrix License server

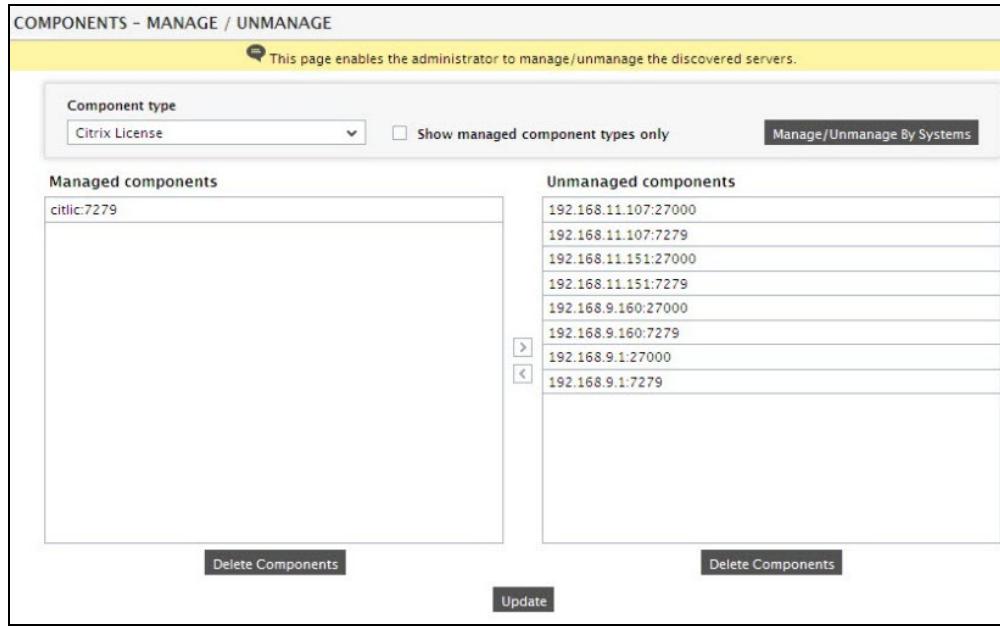
1. Log into the eG administrative interface.
2. If a Citrix license server is already discovered, then directly proceed towards managing it using the **COMPONENTS - MANAGE/UNMANAGE** page (Infrastructure -> Components -> Manage/Unmanage). However, if it is yet to be discovered, then run discovery (Infrastructure -> Components -> Discovery) to get it discovered or add the license server manually using the **COMPONENTS** page (Infrastructure -> Components -> Add/Modify). Remember that components manually added are managed automatically. Discovered components, however,

are managed using the **COMPONENTS - MANAGE/UNMANAGE** page. Figure 3.3 and Figure 3.4 clearly illustrate the process of managing a Citrix License server.



The screenshot shows the 'COMPONENTS - MANAGE / UNMANAGE' page. At the top, a yellow banner reads: 'This page enables the administrator to manage/unmanage the discovered servers.' Below this, the 'Component type' dropdown is set to 'Citrix License'. A checkbox 'Show managed component types only' is unchecked. A 'Manage/Unmanage By Systems' button is present. The interface is divided into two sections: 'Managed components' and 'Unmanaged components'. The 'Managed components' section contains a single entry: 'citlic:7279'. The 'Unmanaged components' section lists several IP addresses and ports: 192.168.11.107:27000, 192.168.11.107:7279, 192.168.11.151:27000, 192.168.11.151:7279, 192.168.9.160:27000, 192.168.9.160:7279, 192.168.9.1:27000, 192.168.9.1:7279, and 'citlic:7279'. Navigation arrows between the lists are visible. At the bottom are 'Delete Components' and 'Update' buttons.

Figure 3.3: Selecting the Citrix License server to be managed



The screenshot shows the same 'COMPONENTS - MANAGE / UNMANAGE' page. The 'Managed components' section now contains the entry 'citlic:7279'. The 'Unmanaged components' section remains the same as in Figure 3.3. The 'Delete Components' and 'Update' buttons are at the bottom.

Figure 3.4: Managing the Citrix License server

3. Next, sign out of the eG administrative interface.

Chapter 3: Monitoring Citrix License Servers

To provide such complete monitoring, eG Enterprise embeds an exclusive *Citrix License* monitoring model (see Figure 3.5).

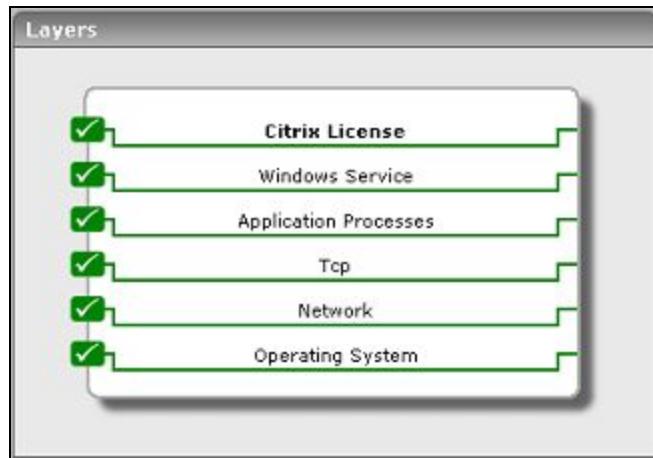


Figure 3.5: The layer model of a Citrix license server

Every layer of this model is mapped to a wide variety of tests that keep a constant check on every operational aspect of the License server and report its status. The sections to come will discuss the **Citrix License** layer only, as the remaining layers have already been dealt with in the *Monitoring Unix and Windows Servers* document.

3.3 The Citrix License Layer

To ascertain future license requirements and to detect license abuse, it is essential to closely follow the current license usage of the Access Suite. The tests mapped to the **Citrix License** layer enable this.

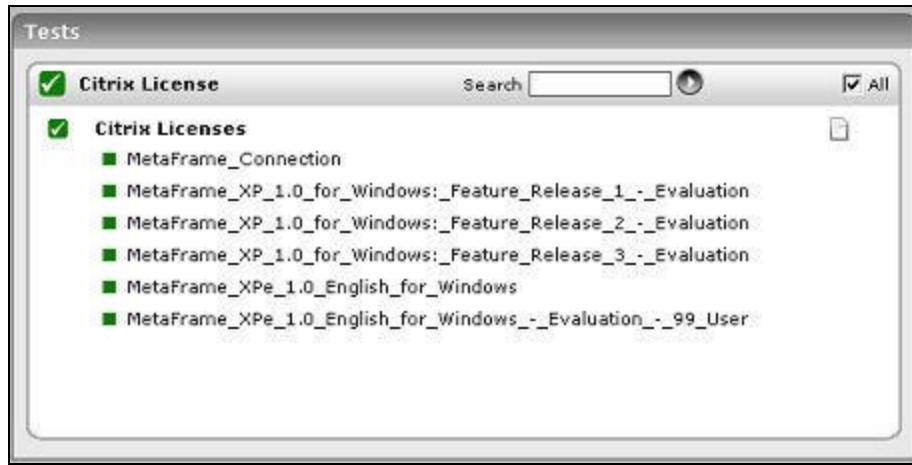


Figure 3.6: Tests associated with the Citrix License layer

3.3.1 Citrix Licenses Test

This test reports statistics pertaining to the license usage of the Citrix Access Suite.

Target of the test : A Citrix License Server

Agent deploying the test : An internal agent

Outputs of the test : One set of results is reported for every Citrix license type being managed by the monitored Citrix License server .

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed. Since the Citrix Licenses test is a resource-intensive test, it is recommended that you run the test less frequently. Accordingly, the Test Period for this test has been, by default, set to 10 minutes.
Host	The host for which the test is to be configured.
Port	Refers to the port used by the Citrix License server.
CitrixHome	Provide the full path to the install directory of the Citrix License server being monitored. By default, 'none' will be displayed here. In such a case, eG will auto-discover the install directory. Alternatively, you can explicitly specify the exact location of the install directory here. For example, <code>c:\progra~1\CitrixLicense</code> .
Reread License	If this flag is set to Yes , then the eG agent will check for changes in license status everytime the test runs. If this flag is set to No , then the eG agent will not check for

Parameter	Description
Report Util By OverDraft	<p>license changes.</p> <p>This parameter is applicable only when the user/device, per user, and per device licenses are installed in the environment. Typically, license overdraft is included in all user/device, per user, and per device licenses. When you purchase any of the licenses of above-mentioned types, you receive 10% of purchased licenses as overdraft from Citrix. For example, if you purchase 1000 user/device licenses, you will get a total of 1100 user/device licenses i.e. sum of the purchased licenses and additional 10% of purchased licenses. In such environments, the eG agent computes the utilization and availability of the licenses of above-mentioned types based on the licenses with overdraft. For this purpose, this parameter is set to Yes, by default. The availability and utilization percentage of the licenses are calculated using the following formulae:</p> <p>Licenses available = (Licenses with overdraft) - (Licenses in use)</p> <p>License utilization = (Licenses in use / Licenses with overdraft) * 100</p> <p>Let's say for an example that you have purchased 1000 user/device licenses. In this case, the usage and available count of licenses are computed as follows:</p> <p>Licenses Installed (i.e. purchased licenses): 1000</p> <p>Overdraft licenses = 10% of purchased licenses = 100 (10% of 1000)</p> <p>Licenses with overdraft = Purchased licenses + Overdraft licenses = 1100</p> <p>Number of licenses used = 600</p> <p>Licenses available = (Licenses with overdraft) - (Licenses in use) = 1100 - 600 = 500</p> <p>License utilization = (Licenses in use / Licenses with overdraft) * 100 = (600/1100) * 100 = 54.54%</p> <p>Note that, you will be allowed to use the overdraft licenses only after you allocate all the purchased and evaluation licenses to users/devices.</p> <p>On the other hand, if you want to calculate the license usage only for the licenses that you purchased, then set this flag to No. In this case, the utilization and availability will be calculated as follows for the above-discussed example:</p> <p>Licenses available = (Licenses installed) - (Licenses in use) = 1000 - 600 = 400</p> <p>License utilization = (Licenses in use / Licenses installed) * 100 = (600/1000) * 100 = 60 %</p>
Detailed Diagnosis	To make diagnosis more efficient and accurate, the eG Enterprise suite embeds an

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

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation						
Licenses installed	Indicates the number of licenses of this type installed.	Number							
Licenses in use	Indicates the number of licenses of this type currently being used.	Number	If this measure is equal to Licenses installed, then it indicates that all the licenses have been utilized. The detailed diagnosis of this measure will reveal the details of the used licenses.						
Available licenses	Indicates the number of licenses of this type that are available for use.	Number							
License utilization	Indicates the percentage of licenses of this type currently being used.	Percent	If this value is 100, then it indicates that all the licenses have been used up.						
Is license expired?	Indicates whether/not the license of this type is expired.		<p>The values that this measure reports and their corresponding numeric values are:</p> <table border="1"> <thead> <tr> <th>Measure Value</th> <th>Numeric Value</th> </tr> </thead> <tbody> <tr> <td>No</td> <td>0</td> </tr> <tr> <td>Yes</td> <td>1</td> </tr> </tbody> </table>	Measure Value	Numeric Value	No	0	Yes	1
Measure Value	Numeric Value								
No	0								
Yes	1								

Measurement	Description	Measurement Unit	Interpretation						
			<p>Note:</p> <p>By default, this measure reports the values <i>Yes</i> or <i>No</i> while indicating whether the licenses of this type are expired or not. However, the graph of this measure will represent the same using the corresponding numeric equivalents alone.</p>						
Licenses with overdraft	Indicates the total number of licenses installed.	Number	<p>This measure will be reported only if the user/device licenses, per user, and per device licenses are installed in the environment.</p> <p>This measure is the sum of purchased licenses and overdraft licenses.</p> <p>Overdraft usage is reported in Studio and the License Administration Console. If you routinely use overdraft licenses, we recommend that you purchase more licenses to maintain compliance.</p>						
Are overdraft licenses in use?	Indicates whether the overdraft licenses of this type are currently in use or not.		<p>This measure will be reported only if the user/device licenses, per user, and per device licenses are installed in the environment.</p> <p>The values that this measure reports and their corresponding numeric values are:</p> <table border="1"> <thead> <tr> <th>Measure Value</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>No</td><td>0</td></tr> <tr> <td>Yes</td><td>1</td></tr> </tbody> </table> <p>Note:</p> <p>By default, this measure reports the values <i>Yes</i> or <i>No</i> while indicating</p>	Measure Value	Numeric Value	No	0	Yes	1
Measure Value	Numeric Value								
No	0								
Yes	1								

Measurement	Description	Measurement Unit	Interpretation
			whether the overdraft licenses are currently in use or not. However, the graph of this measure will represent the same using the corresponding numeric equivalents alone.
Number of users	Indicates the number of users who are currently using the licenses of this type.	Number	<p>This measure will be reported only if per user and/or user/device licenses are installed in the environment.</p> <p>If the value of this measure is close to or equal to the value of the <i>Licenses with overdraft</i>, then it indicates that the user licenses are exhausted. In such a case, administrators should either purchase new licenses or free up the existing licenses (if required).</p> <p>The detailed diagnosis of this measure lists the names of the users who are currently using the licenses of the above-mentioned types.</p>
Number of devices	Indicates the number of devices that are currently using the licenses of this type.	Number	<p>This measure will be reported only if per device and/or user/device licenses are installed in the environment.</p> <p>If the value of this measure is close to or equal to the value of the <i>Licenses with overdraft</i>, then it indicates that the device licenses are exhausted. In such a case, administrators should either purchase new licenses or free up the existing licenses (if required).</p> <p>The detailed diagnosis of this measure lists the names of the devices that are currently using the licenses of the above-mentioned types.</p>

About eG Innovations

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

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

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