Monitoring VMware App Volumes Manager

eG Innovations Product Documentation

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Total Performance Visibility

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Chapter 1: Introduction

VMware App Volumes is a real-time application delivery system that enterprises use to dynamically deliver and manage applications. Applications are bundled in AppStacks and delivered by attaching a standard VMDK file to a virtual machine. Administrators can centrally manage the applications with the App Volumes Manager, a Web-based interface that is integrated with Active Directory (AD) and vSphere. Administrators can assign, update, or remove applications at the next user login or in real time and there is no need to modify the desktops or individual applications. Writable Volumes allow users to access their application data across sessions and devices. Applications delivered using App Volumes look and feel natively installed and you can update or replace the applications in real time.

With App Volumes, applications become VM-independent objects that can be moved easily across data centers or to the cloud and shared with thousands of virtual machines. In a virtual desktop environment, App Volumes provides the following benefits:

Real-Time Application Delivery

- Delivers and upgrades applications at scale and in seconds
- Dynamically delivers applications without interrupting users even if they are logged in

Cost-Optimized Infrastructure

- Optimizes application delivery to drive down compute, network, and storage costs
- Can reduce storage costs for VDI
- Works with existing infrastructure with flexible delivery to users, groups, or devices

Seamless End-User Experience

- Supports fully customizable desktops, with the freedom for end users to install their own applications
- Creates a persistent user experience with nonpersistent economics

The VMware App Volumes Manager Server is a Windows Server system used as the Web Console for administration and configuration of App Volumes and assignment of AppStacks and writable volumes. App Volumes Manager is also used as a broker for the App Volumes Agents, for automated assignment of applications and writable volumes during desktop startup or user login.

In environments where App Volumes are extensively used, if an AppStack could not be assigned to a user or if the user could not access the applications due to lack of storage space in the volumes, users are forced to wait till the AppStacks are made available or the storage space is increased. To

avoid such poor user experience, it is necessary for the administrators to monitor the VMware App Volumes Manager round the clock! eG Enterprise helps administrators in this regard!

Chapter 2: How Does eG Enterprise Monitor VMware App Volumes Manager?

eG Enterprise monitors the VMware App Volumes Manager using both agent based and agentless manners. The eG agent uses the RESTful APIs to collect the metrics from the target VMware App Volumes Manager. To be able to connect to the RESTful API, the eG agent should be configured with the credentials of a user belonging to an active directory group that is vested with the Administrators (Read only) rights. By default, in some versions of VMware App Volumes Manager, the Administrators (Read only) role will not be enabled by default. To know how to enable the Administrators (Read only) role and assign the role to an active directory group, refer to the sections discussed below.

2.1 Enabling the Administrators (Read only) role

If the monitored target is a VMware App Volumes Manager of version 2.14 and above, then proceed directly to Section **2.1.2** to create a new Administrators (Read only) role. If the monitored target is a VMware App Volumes Manager version 2.12 or below, by default, the Administrators (Read only) role will not be visible. To enable the Administrators (Read only) role, first, you are required to set an Environment variable in the machine on which the VMware App Volumes Manager is installed. The section below lists the steps that you need to follow to set the Environment variable.

2.1.1 Setting the Environment variable

To set the Environment Variable, do the following:

1. Log in as administrator into the machine where the App Volumes Manager is installed.
2. Then, navigate through the *Control Panel -> System and Security -> System -> Advanced System Protection*. Figure 2.1 then appears.

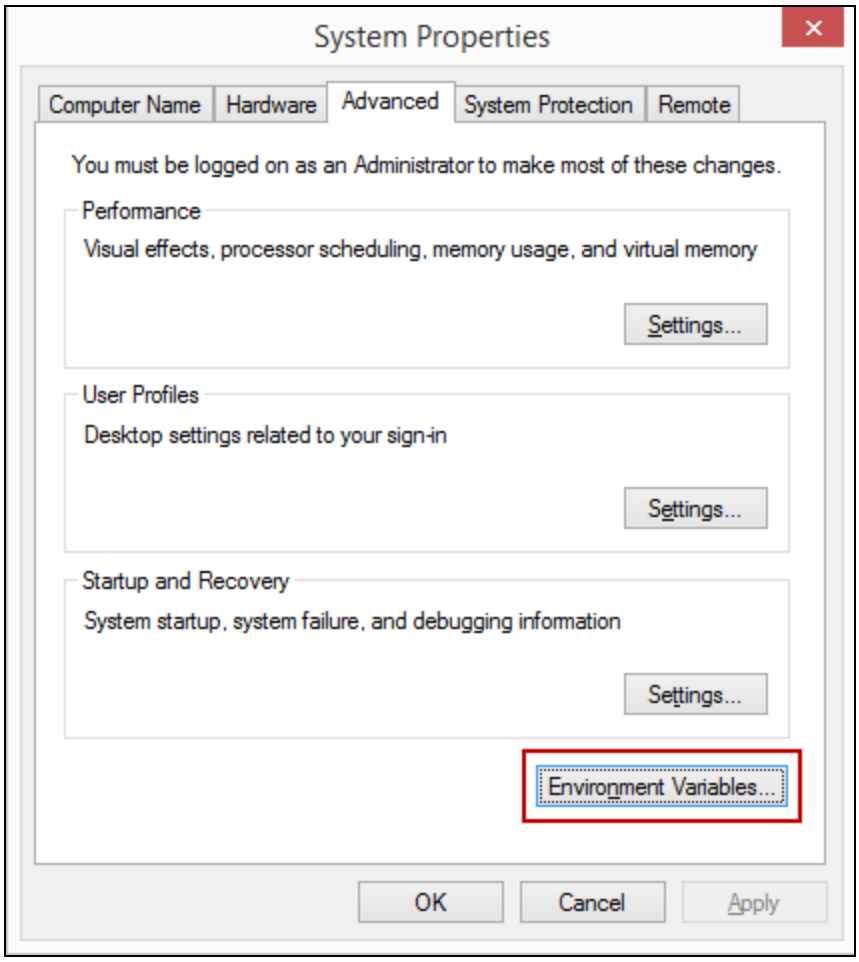

Figure 2.1: The System Properties page through which Environment Variable needs to be set

3. Click the **Environment Variables** button in Figure 2.1. Figure 2.2 then appears.

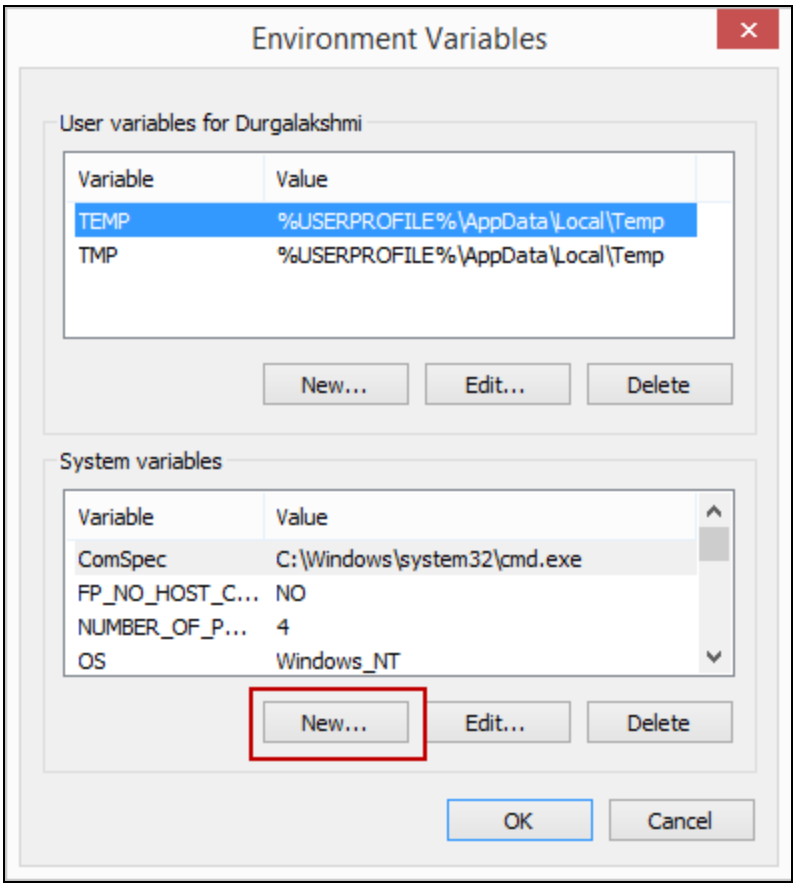

Figure 2.2: Adding a new Environment Variable

4. Click the **New** button available below the **System variables** section in Figure 2.2.

5. In Figure 2.3 that appears, set the **Variable name** to *AVM_ENABLE_READ_ONLY_ROLE* and the **Variable value** to *1*.

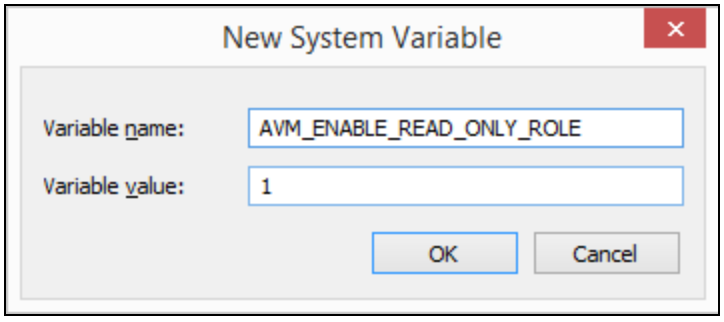

Figure 2.3: Setting the Environment Variable

6. Click the **OK** button to set the **Environment Variable**.

2.1.2 Assigning the Administrators (Read only) role to an Active Directory Group

1. Login to the machine on which the VMware App Volumes Manager is installed.

Figure 2.4: Logging into the VMware App Volumes Manager console

2. Figure 2.5 then appears.

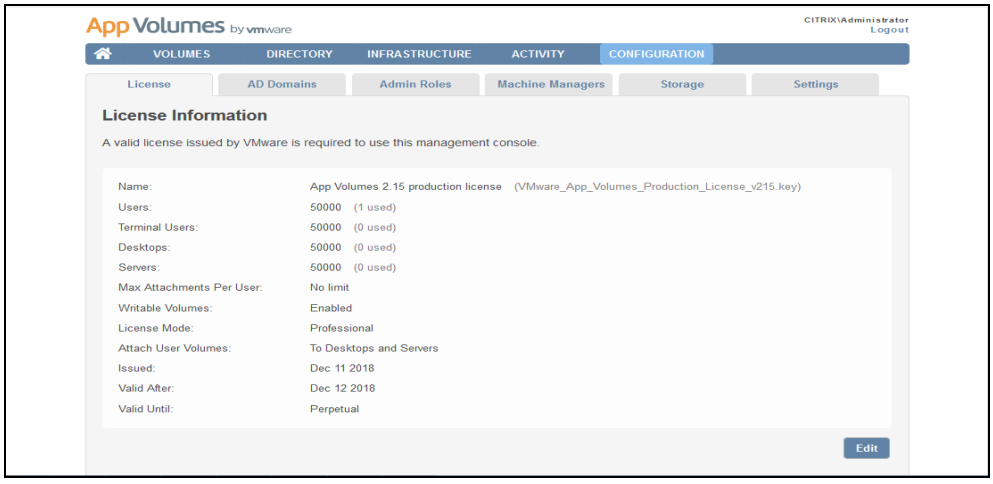

Figure 2.5: The screen that appears after login

3. Click the **Admin Roles** tab in Figure 2.5. Figure 2.6 will then appear listing the roles that are assigned earlier to the administrators (if any).

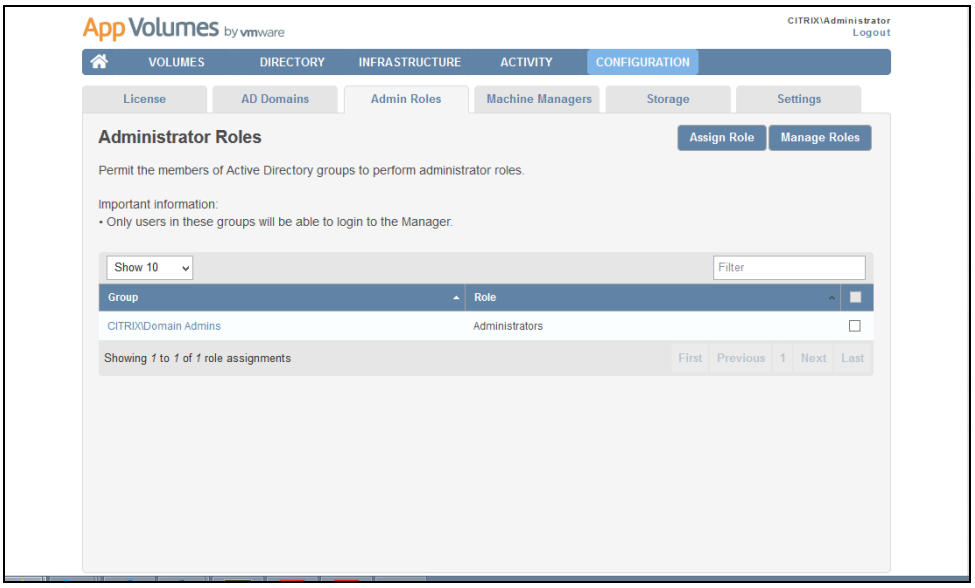

Figure 2.6: Listing the Administrator Roles

4. To create a new role, click the **Assign Roles** button in Figure 2.6.
5. In Figure 2.7 that appears next, select the *Administrators (Read only)* option from the **Role** list box.

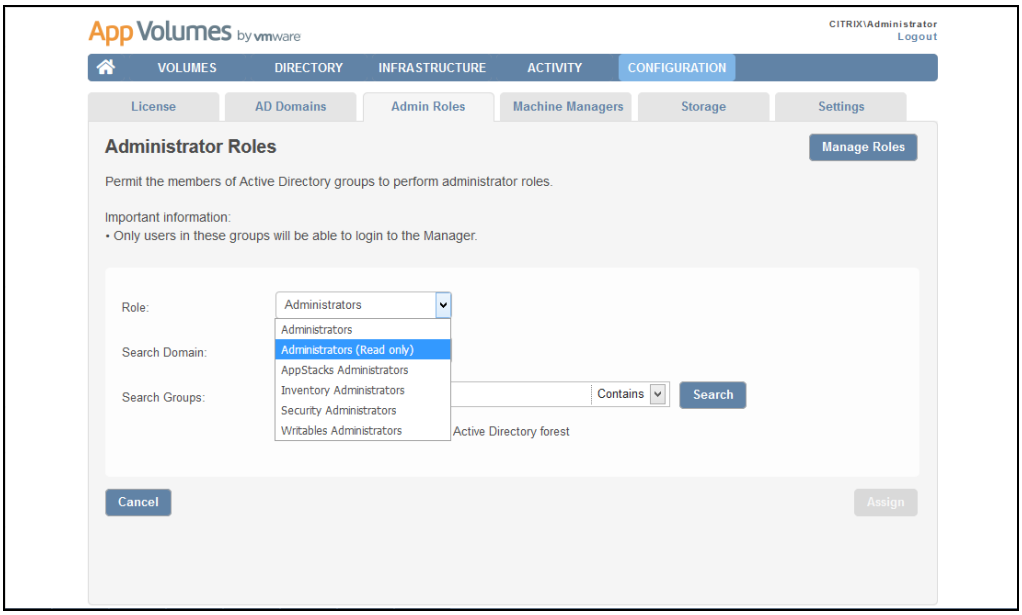

Figure 2.7: Selecting the Administrators (Read only) role

6. You can then pick a domain or a group to which the user role should belong to and then click the **Assign** button. This will ensure you that the users belonging to that active directory group can be

specified while configuring the tests in the test configuration page. Figure 2.8 will then appear listing the groups that are assigned the Administrators (Read only) role.

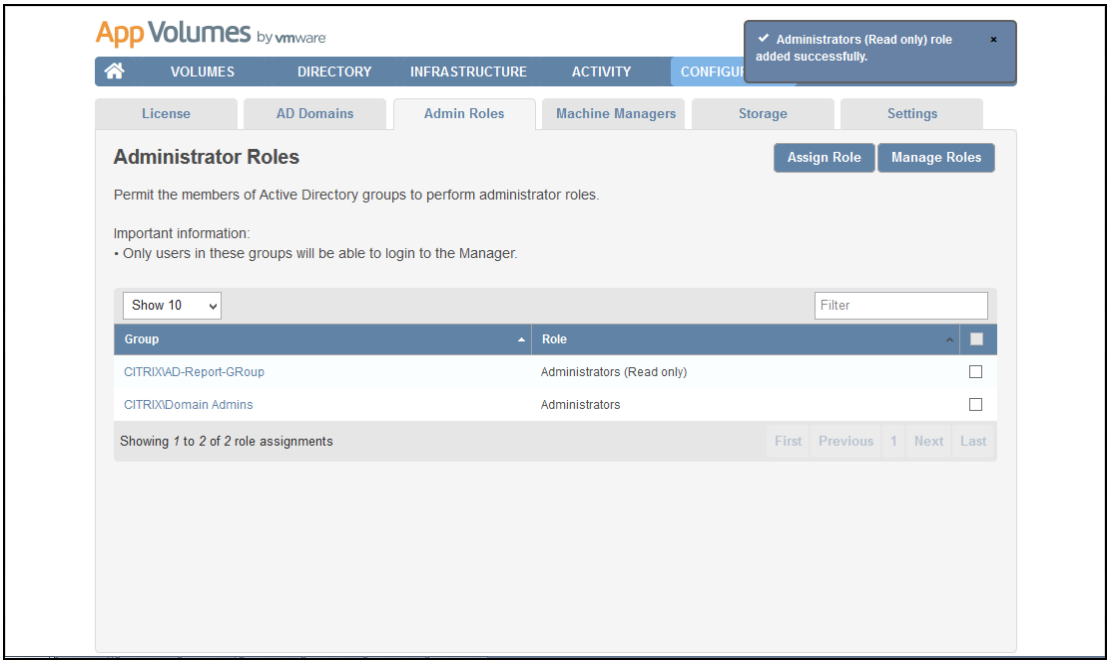

Figure 2.8: The Administrators (Read only) role assigned to a group

7. Once you have assigned the Administrators (Read only) role to an active directory group, you can proceed to manage the VMWare App Volumes Manager.

2.2 Managing the VMware App Volumes Manager

eG Enterprise is capable of automatically discovering a VMware App Volumes Manager. To manage an auto-discovered VMware App Volumes Manager, follow the steps below:

1. Log into the eG administrative interface.
2. Follow the *Infrastructure -> Components -> Manage/Unmanage/Delete* menu sequence in the Admin home page.
3. Figure 2.9 will then appear. Select VMware App Volumes Manager as the Component type in Figure 2.9. All auto-discovered VMware App Volumes Managers will be displayed in the **Unmanaged components** list, with an asterisk (*) symbol alongside. This 'asterisk' denotes that the VMware App Volumes Manager has been 'newly' discovered by eG Enterprise. To manage a VMware App Volumes Manager, select it from the **Unmanaged components** list and click the **<** button in Figure 2.9. This will transfer the selection to the **Managed components** list (see Figure 2.10). Finally, click the **Update** button.

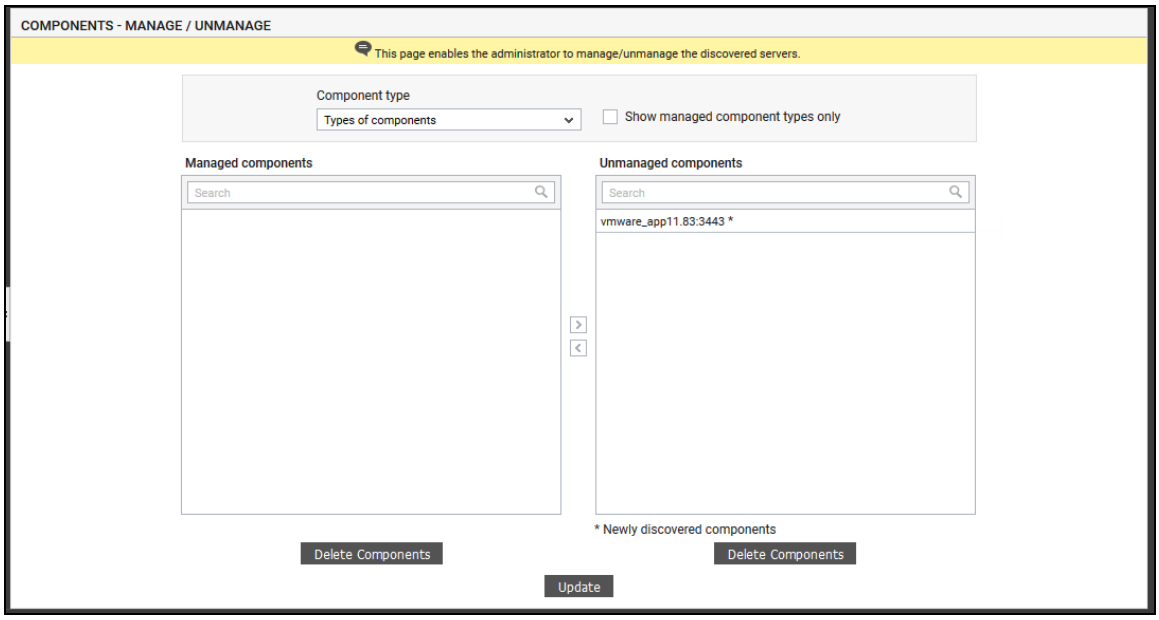

Figure 2.9: Newly discovered VMware App Volumes Manager listed in the Unmanaged components list

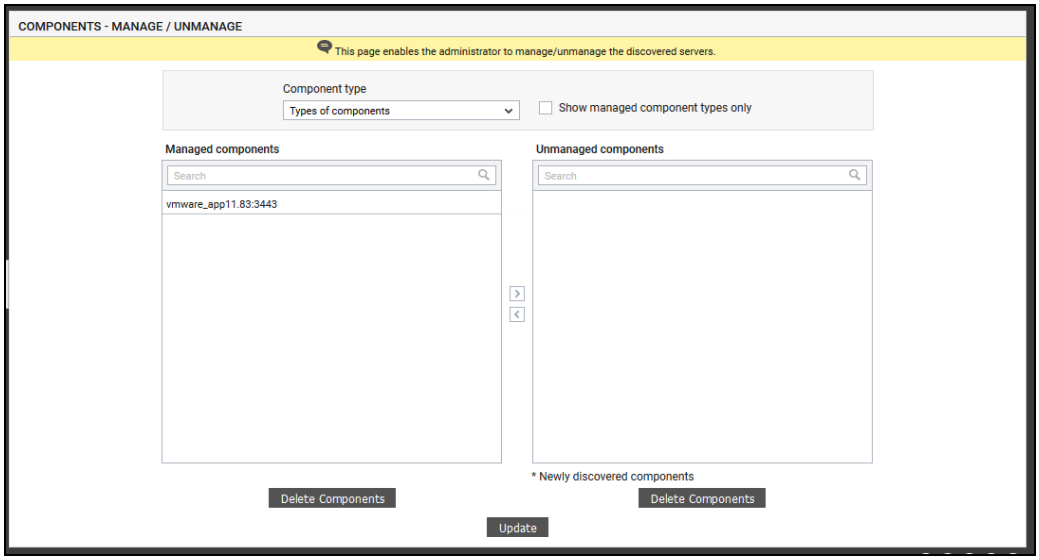

Figure 2.10: Managing a VMware App Volumes Manager

If for some reason, eG Enterprise is unable to auto-discover the VMware App Volumes Manager, then, you will have to manually add the VMware App Volumes Manager to the eG Enterprise system. For this, follow the steps below:

1. Login to the eG admin interface as admin with password admin.
2. Follow the menu sequence *Infrastructure -> Components -> Add/Modify* in the Admin Home page.
3. In the page that appears next, select *VMware App Volumes Manager* as the **Component type** and click the **Add New Component** button therein.
4. Figure 2.11 will then appear.

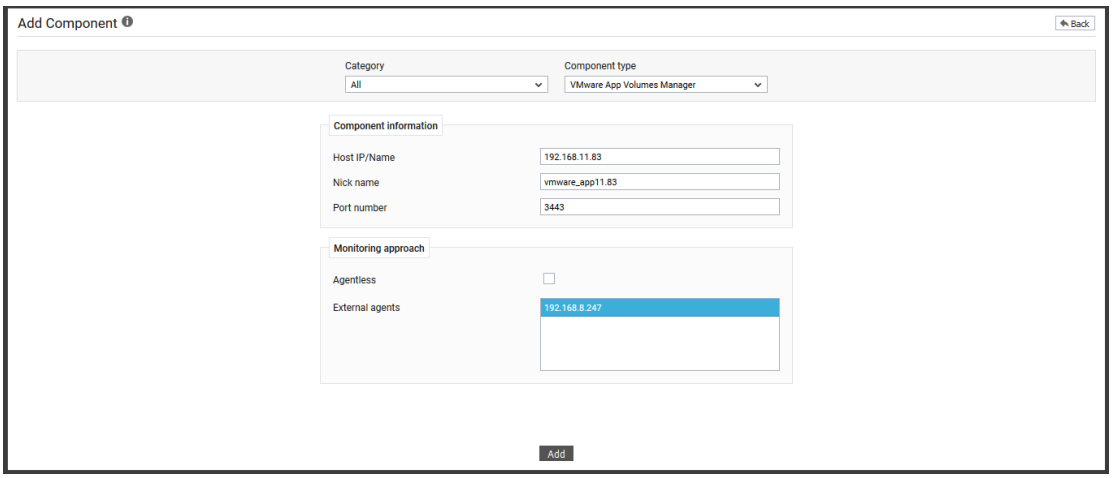

Figure 2.11: Adding a VMware App Volumes Manager in an agent based manner

5. In Figure 2.11, provide the **Host IP/Name** of the target VMware App Volumes Manager. Assign a **Nick name** to the VMware App Volumes Manager.
6. In case you are monitoring a VMware App Volumes Manager in an agent-based manner, just pick an external agent from the **External agents** list box and click the **Add** button to add the component for monitoring.
7. On the other hand, if you are monitoring a VMware App Volumes Manager server in an agentless manner, then do the following:
   - Select the **Agentless** check box.
   - Pick the **OS** on which the VMware App Volumes Manager is running.
   - Set the **Mode** to **Other**.
   - Select the **Remote agent** that will be monitoring the VMware App Volumes Manager. **Note that the Remote agent you choose should run on a Windows host.**

- Choose an external agent for the server by picking an option from the **External agents** list box.
- Finally, click the **Add** button to add the VMware App Volumes Manager for monitoring.

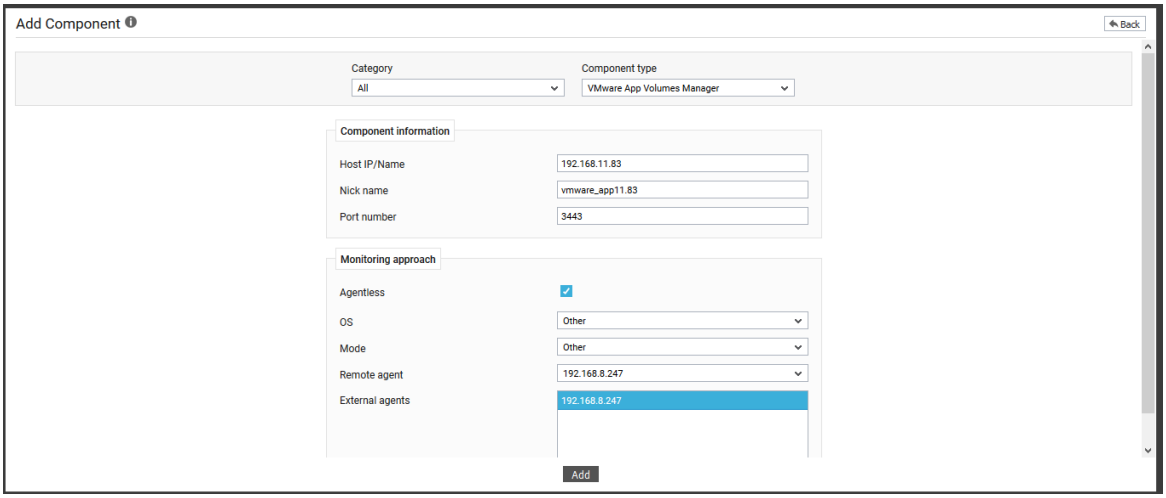

Figure 2.12: Managing a VMware App Volumes Manager in an agentless manner

8. Now, when you attempt to sign out of the eG administrative interface, Figure 2.13 appears, listing the tests requiring manual configuration.

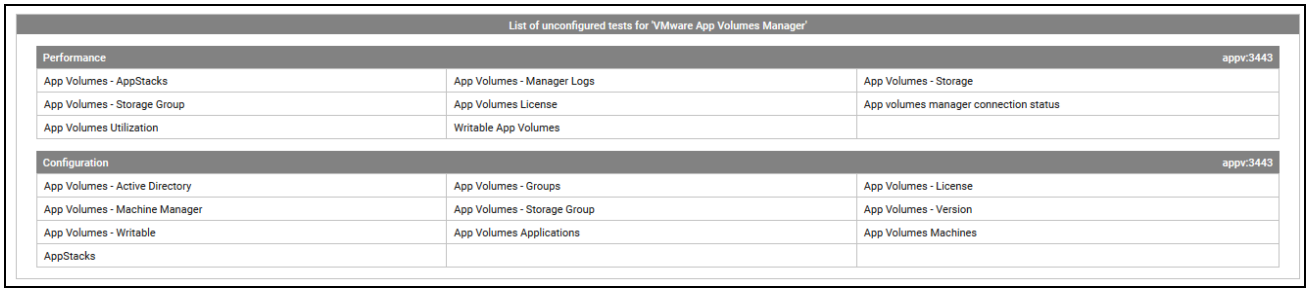

Figure 2.13: The list of unconfigured tests for VMware App Volumes Manager

9. From the **List of Unconfigured tests** that appears, choose to configure the *App Volumes - AppStacks* test by clicking on it. To know more on configuring this test, refer to **Monitoring the VMware App Volumes Manager**.
10. Once you have configured the tests, signout of the administrative interface.

Chapter 3: Monitoring the VMware App Volumes Manager

eG Enterprise offers a specialized *VMware App Volumes Manager* monitoring model, which periodically monitors the license utilization, storage, AppStacks and storage groups of the VMware App Volumes Manager and proactively alerts administrators to potential performance troubles.

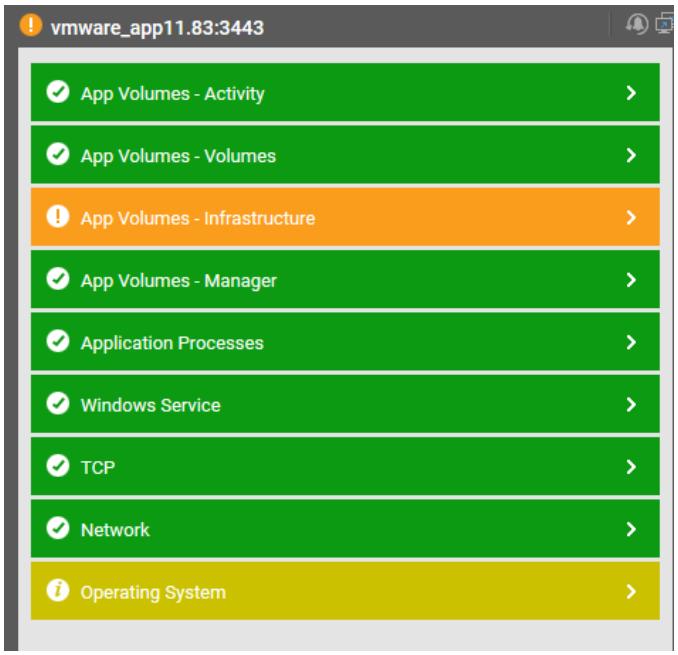

Figure 3.1: Layer model of VMware App Volumes Manager

Each layer of the Figure 3.1 is mapped to a variety of tests that provide valuable insights into the overall health and performance of the target **VMware App Volumes Manager**. With the help of the metrics reported by these tests, you can find quick and accurate answers for the following queries:

- What is the availability and responsiveness of the target VMware App Volumes Manager?
- What is the response code returned by the HTTP / HTTPS requests?
- How many AppStacks are managed by the target VMware App Volumes Manager?
- How many users are logged in through the target VMware App Volumes Manager?
- How many server are provisioned through the target VMware App Volumes Manager?
- What is the status of each writable volume?
- How much of space is available for use in each writable volume?

- What is the percentage of space utilized in each writable volume? Which writable volume is currently running out of space?
- What is the status of each AppStack?
- How many users are attached to each AppStack?
- How many applications are available in each AppStack?
- How many users are accessing each AppStack?
- How many information and warning messages were received for each event type by the target VMware App Volumes Manager?
- How many error messages were received for each event type?
- How many jobs were delayed for each event type?
- What is the average time taken for the connections of each event type to succeed?
- How many datastores are available in each storage group?
- How much of space is available for use in each storage group?
- What is the percentage of space utilized by each storage group?
- How many AppStacks and writable volumes are available in each datastore?
- How much of space is available for use in each datastore?
- What is the percentage of space utilized by each datastore? Which datastore is currently running out of space?
- What is the validity of the license provide for the target VMware App Volumes Manager?
- How many user licenses are allocated and how many are currently in use?
- How many concurrent user licenses are allocated and how many are in use?
- How many terminal user licenses are allocated and how many are in use?
- How many server licenses are allocated and how many are in use?
- How many desktop licenses are allocated and how many are in use?
-
- Is any desktop idle in a pool? If so, which desktop pool is it?
- Are there too many inactive desktops in a pool? If so, which pool is it?
- Are all virtual desktops accessible over the network? Which desktop is not?

- How many desktops on each desktop pool were in Error state?
- How many desktops need to be maintained in each desktop pool?
- How many desktops can be accommodated in each desktop pool?
- What is the percentage of desktops that were actively used in each desktop pool?
- How many RDS Hosts exist in each application pool?
- Which application pools are currently disabled?
- What is the current status of each application pool?
- How many RDS hosts are available in each RDS farm?
- How many application pools are available in each RDS farm?
- Is each RDS farm enabled or not?
- How many sessions were initiated on the desktops/applications on each RDS farm using PCoIP, Blast and RDP protocols?
- What is the current status of each RDS host?
- How many connections can be provided to the desktops/applications on each RDS host simultaneously?
- How many VMware Horizon Connection Servers were enabled on the target VMware Horizon Cloud Pod?
- How many VMware Horizon Connection Servers were disabled on the target VMware Horizon Cloud Pod?
- How many sessions were initiated on the desktops/applications on each RDS host using PCoIP, Blast and RDP protocols?

Since the Application Processes, Windows Service, TCP, Network and the Operating System layers have been discussed in detail in the Monitoring Unix and Windows Server document, the sections that follow will focus on the remaining layers of Figure 3.1 in detail.

3.1 The App Volumes - Manager Layer

Using the tests mapped to this layer, administrators can manage the license utilization of the target VMware App Volumes Manager, figure out the licenses that are mostly sought after, the availability and responsiveness of the target VMware App Volumes Manager and the load.

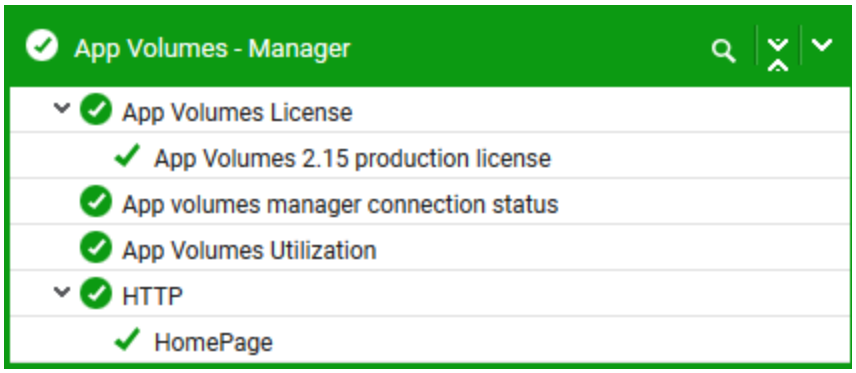

Figure 3.2: The test mapped to the App Volumes - Manager layer

3.1.1 App Volumes License Test

In large virtualized environments, the VMware App Volumes Manager is used to provision desktops/servers on the go to the users. The provisioning of the desktops/servers mainly depends on the number of licenses that are available. The licensing also depends on the number of users accessing the desktops through the App Volumes Manager in your environment. The validity and usage of these licenses needs to be tracked closely, so that any potential license shortage / expiry can be proactively detected and prevented. This is because, without adequate licenses, users will not be able to use the desktops/servers/applications hosted through the VMware App Volumes Manager. This is where the **App Volumes License** test helps!

This test reports the validity of the license, the count of user licenses allocated and the user licenses used. In addition, this test reports the count of terminal users, server and desktop licenses allocated and the usage of the terminal user licenses, server and desktop licenses in detail. On the basis of these usage values, the test also auto-computes and reports the overall individual license usage percentage, thus proactively alerting to any potential license shortage. Using this test administrators can easily detect an impending license expiry.

Target of the test : A VMware App Volumes Server

gent deploying the test : An internal/remote agent

Outputs of the test : One set of results for the target VMware App Volumes Manager being monitored

Configurable parameters for the test

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

Parameter	Description
Host	The host for which the test is to be configured.
Port	The port at which the specified Host listens to. By default, this is set to 3443.
AppVol User	By default, the eG agent uses the RESTful APIs to collect the metrics from the target VMware App Volumes Manager. To be able to connect to the RESTful API, the eG agent should be configured with the credentials of a user belonging to an active directory group that is vested with the Administrators (Read only) rights. Specify the credentials of such a user in this text box. To know how to assign the Administrators (Read only) role to an active directory group, refer to Section **2.1**.
AppVol Password	Specify the password that corresponds to the AppVol User.
Confirm Password	Confirm the password by retyping it here.
WebPort	By default, in most virtualized environments, the VMware App Volumes Manager listens on port 3443 irrespective of being SSL-enabled or not. This implies that while monitoring the target VMware App Volumes Manager , the eG agent, by default, connects to port 3443 of the VMware App Volumes Manager to pull out metrics. Accordingly, the WebPort parameter is set to 3443. In some environments however, the default port 3443 might not apply. In such a case, against the WebPort parameter, you can specify the exact port at which the VMware App Volumes Manager in your environment listens so that the eG agent communicates with that port.
SSL	Set the SSL flag to **Yes**, if SSL (Secured Socket Layer) is to be used to connect to the target VMware App Volumes Manager, and **No** if it is not.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Validity	Indicates the number of days for which the license is valid.	Number	If the license obtained is a perpetual license, then, this measure will report the value as Unlimited.
Total users	Indicates the total number of user licenses allocated.	Number	
Used users	Indicates the number of user licenses that are	Number	If the value of this measure is inching close to or is equal to the *Total users*

Measurement	Description	Measurement Unit	Interpretation
	currently in use.		measure, then, it indicates that the user licenses are exhausted. Administrators should either purchase new licenses or prohibit certain users from accessing the VMware App Volumes Manager.
User usage	Indicates the percentage of user licenses that is currently in use.	Percent	A value close to 100 indicates that the licenses are being exhausted rapidly.
Total concurrent users	Indicates the total number of concurrent user licenses that are allocated for use.	Number	
Used concurrent users	Indicates the number of concurrent user licenses that are currently in use.	Number	If the value of this measure is inching close to or is equal to the *Total concurrent users* measure, then, it indicates that the user licenses are exhausted. Administrators should either purchase new licenses or prohibit certain users from accessing the VMware App Volumes Manager.
Concurrent users usage	Indicates the percentage of concurrent user licenses that is currently in use.	Percent	A value close to 100 indicates that the licenses are being exhausted rapidly.
Total terminal users	Indicates the number of terminal user licenses allocated for use.	Number	
Used terminal users	Indicates the number of terminal user licenses that are currently in use.	Number	If the value of this measure is inching close to or is equal to the *Total terminal users* measure, then, it indicates that the user licenses are exhausted. Administrators should either purchase new licenses or prohibit certain users from accessing the VMware App Volumes Manager.
Terminal users usage	Indicates the percentage of terminal user licenses that is currently in use.	Percent	A value close to 100 indicates that the licenses are being exhausted rapidly.

Measurement	Description	Measurement Unit	Interpretation
Total concurrent terminal users	Indicates the total number of terminal user licenses that can be accessed concurrently.	Number	A concurrent connection is defined as the total number of terminal users accessing or using the App Volume Manager at any given time to maintain an Active Connection.
Used concurrent terminal users	Indicates the number of terminal user licenses that are concurrently in use.	Number	If the value of this measure is inching close to or is equal to the *Total concurrent terminal users* measure, then, it indicates that the user licenses are exhausted. Administrators should either purchase new licenses or prohibit certain users from accessing the VMware App Volumes Manager.
Concurrent terminal users usage	Indicates the percentage of terminal user licenses that are concurrently in use.	Percent	A value close to 100 indicates that the licenses are being exhausted rapidly.
Total servers	Indicates the total number of server licenses allocated.	Number	
Used servers	Indicates the number of server licenses that are currently in use.	Number	If the value of this measure is inching close to or is equal to the *Total servers* measure, then, it indicates that the user licenses are exhausted. Administrators should either purchase new licenses or prohibit certain users from accessing the VMware App Volumes Manager.
Servers usage	Indicates the percentage of server licenses that is currently in use.	Percent	A value close to 100 indicates that the licenses are being exhausted rapidly.
Total concurrent servers	Indicates the total number of server licenses that can be accessed concurrently.	Number	
Used concurrent servers	Indicates the number of server licenses that are concurrently in use.	Number	If the value of this measure is inching close to or is equal to the *Total*

Measurement	Description	Measurement Unit	Interpretation
			concurrent servers measure, then, it indicates that the user licenses are exhausted. Administrators should either purchase new licenses or prohibit certain users from accessing the VMware App Volumes Manager.
Concurrent servers usage	Indicates the percentage of server licenses that is currently in use.	Percent	A value close to 100 indicates that the licenses are being exhausted rapidly.
Total desktops	Indicates the total number of desktop licenses allocated for use.	Number	
Used desktops	Indicates the number of desktop licenses that are currently in use.	Number	If the value of this measure is inching close to or is equal to the *Total desktops* measure, then, it indicates that the user licenses are exhausted. Administrators should either purchase new licenses or prohibit certain users from accessing the VMware App Volumes Manager.
Desktops usage	Indicates the percentage of desktop licenses that is currently in use.	Percent	A value close to 100 indicates that the licenses are being exhausted rapidly.
Total concurrent desktops	Indicates the number of desktop licenses that can be provisioned concurrently.	Number	
Used concurrent desktops	Indicates the number of desktop licenses that are currently in use.	Number	If the value of this measure is inching close to or is equal to the *Total concurrent desktops* measure, then, it indicates that the user licenses are exhausted. Administrators should either purchase new licenses or prohibit certain users from accessing the VMware App Volumes Manager.
Concurrent desktops usage	Indicates the percentage of desktop licenses that is currently in use.	Percentage	A value close to 100 indicates that the licenses are being exhausted rapidly.

3.1.2 App Volumes Manager Connection Status Test

The 24x7 availability of the VMware App Volumes Manager is imperative to ensure that users have uninterrupted access to the AppStacks, Writable Volumes desktops/data and other critical computing resources. A VMware App Volumes Manager might be rendered unavailable owing to many reasons – e.g., an internal configuration error, the non-availability of the VMware App Volumes Manager's web interface, etc. While the knowledge of the failure of a VMware App Volumes Manager is valuable to an administrator, knowing what caused the failure can alone help the administrator quickly resolve the issue and restore the VMware App Volumes Manager to normalcy.

This test instantly informs administrators of the non-availability (if any) of the VMware App Volumes Manager, reports the response code received for the requests, and also intimates them of any probable slowdown in the responsiveness of the server.

Target of the test : A VMware App Volumes Server

gent deploying the test : A internal/remote agent

Outputs of the test : One set of results for each AppStack on the target VMware App Volumes Manager being monitored

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The host for which the test is to be configured.
Port	The port at which the specified Host listens to. By default, this is set to 3443.
AppVol User	By default, the eG agent uses the RESTful APIs to collect the metrics from the target VMware App Volumes Manager. To be able to connect to the RESTful API, the eG agent should be configured with the credentials of a user belonging to an active directory group that is vested with the Administrators (Read only) rights. Specify the credentials of such a user in this text box. To know how to assign the Administrators (Read only) role to an active directory group, refer to Section **2.1**.
AppVol Password	Specify the password that corresponds to the AppVol User.
Confirm Password	Confirm the password by retyping it here.

Parameter	Description
WebPort	By default, in most virtualized environments, the VMware App Volumes Manager listens on port 3443 irrespective of being SSL-enabled or not. This implies that while monitoring the target VMware App Volumes Manager , the eG agent, by default, connects to port 3443 of the VMware App Volumes Manager to pull out metrics. Accordingly, the WebPort parameter is set to 3443. In some environments however, the default port 3443 might not apply. In such a case, against the WebPort parameter, you can specify the exact port at which the VMware App Volumes Manager in your environment listens so that the eG agent communicates with that port.
SSL	Set the SSL flag to **Yes**, if SSL (Secured Socket Layer) is to be used to connect to the target VMware App Volumes Manager, and **No** if it is not.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Availability	Indicates whether the VMware App Volumes Manager is available or not.	Percent	Availability failures could be caused by several factors such as the server process(es) being down, the server being misconfigured, a network failure, etc. Temporary unavailability may also occur if the server is overloaded. Availability is determined based on the response code returned by the server. A response code between 200 to 300 indicates that the server is available. The value 100% for this measure indicates that the target VMware App Volumes Manager is available, and the value 0 indicates that it is not.
Response time	Indicates the time taken by the VMware App Volumes Manager to respond to the HTTP / HTTPS requests received.	Seconds	If the value of this measure consistently increases, it indicates that the performance of the target VMware App Volumes Manager is gradually deteriorating. Ideally, the value of this measure should be low.

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td>Response code</td><td>Indicates the response code returned by the HTTP / HTTPS request.</td><td>Number</td><td>The possible values for this measure and what they represent are detailed in the table below:
<table>
<tr><th>Measure Value</th><th>Description</th></tr>
<tr><td>200</td><td>The API request was successful and received a response.</td></tr>
<tr><td>201</td><td>The API request was successful and a new resource has been created as a result.</td></tr>
<tr><td>400</td><td>The API request was malformed and could not be processed.</td></tr>
<tr><td>401</td><td>You have no access and/or are not authorized.</td></tr>
<tr><td>403</td><td>You are authorized but do not have the privileges for this API.</td></tr>
<tr><td>404</td><td>The URL was not found</td></tr>
<tr><td>405</td><td>The called method</td></tr>
</table>
</td></tr>
</table>

Measurement	Description	Measurement Unit	Interpretation
			<table><tr><th>Measure Value</th><th>Description</th></tr><tr><td></td><td>is not allowed or is not supported</td></tr><tr><td>408</td><td>The request timed out (20 seconds maximum).</td></tr><tr><td>500</td><td>The API request was received but there was a server error.</td></tr><tr><td>503</td><td>Service unavailable at this time or too early to process.</td></tr><tr><td>508</td><td>HTTP other than 1.1 not supported.</td></tr></table>

3.1.3 App Volumes Utilization Test

Using this test, the overall performance of the VMware App Volumes Manager can be measured and with key measures reporting the total number of users, desktops and servers, the number of users, desktops and servers currently logged in through the VMware App Volumes Manager and the number of AppStacks attached to the users. By analyzing the measures of this test, administrators can figure out the load on the target VMware App Volumes Manager.

Target of the test : A VMware App Volumes Server

gent deploying the test : An internal/remote agent

Outputs of the test : One set of results for the target VMware App Volumes Manager being monitored

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The host for which the test is to be configured.
Port	The port at which the specified Host listens to. By default, this is set to 3443.
AppVol User	By default, the eG agent uses the RESTful APIs to collect the metrics from the target VMware App Volumes Manager. To be able to connect to the RESTful API, the eG agent should be configured with the credentials of a user belonging to an active directory group that is vested with the Administrators (Read only) rights. Specify the credentials of such a user in this text box. To know how to assign the Administrators (Read only) role to an active directory group, refer to Section **2.1**.
AppVol Password	Specify the password that corresponds to the AppVol User.
Confirm Password	Confirm the password by retyping it here.
WebPort	By default, in most virtualized environments, the VMware App Volumes Manager listens on port 3443 irrespective of being SSL-enabled or not. This implies that while monitoring the target VMware App Volumes Manager , the eG agent, by default, connects to port 3443 of the VMware App Volumes Manager to pull out metrics. Accordingly, the WebPort parameter is set to 3443. In some environments however, the default port 3443 might not apply. In such a case, against the WebPort parameter, you can specify the exact port at which the VMware App Volumes Manager in your environment listens so that the eG agent communicates with that port.
SSL	Set the SSL flag to **Yes**, if SSL (Secured Socket Layer) is to be used to connect to the target VMware App Volumes Manager, and **No** if it is not.
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:

Parameter	Description
	• The eG manager license should allow the detailed diagnosis capability • Both the normal and abnormal frequencies configured for the detailed diagnosis measures should not be 0.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Total appstacks	Indicates the total number of AppStacks in the target VMware App Volumes Manager.	Number	The detailed diagnosis of this measure lists the name of the AppStack, the size of the AppStack, the datastore name, the number of times the AppStack was mounted, the last mount date and the date on which the AppStack was created.
Appstacks attached users	Indicates the number of AppStacks attached to the users logged in through the target VMware App Volumes Manager.	Number	The detailed diagnosis of this measure lists the name of the AppStack, the user attached to the AppStack, the host to which the AppStack is attached to, the storage location of the AppStack, the time at which the AppStack was attached and the duration for which the AppStack remains attached.
Total users	Indicates the total number of users logged in through the VMware App Volumes Manager.	Number	The detailed diagnosis of this measure lists the domain name\user, the name of the user, the last login time of the user, number of times the user logged in, the writable volumes attached to the user, the
Online users	Indicates the number of users currently logged in through the VMware App Volumes Manager.	Number	The detailed diagnosis of this measure lists the name of the users who are currently logged in, the host through which the user logged in, the last login time of the user and the duration for which the user is logged in.
Total desktops	Indicates the total number	Number	The detailed diagnosis of this measure

Measurement	Description	Measurement Unit	Interpretation
	of desktops provisioned through the VMware App Volumes Manager.		lists the domain on which the desktop is hosted, the name of the desktop, the IP address, the last boot time stamp of the desktop and the current status of the desktop.
Online desktops	Indicates the number of desktops that are currently provisioned through the VMware App Volumes Manager.	Number	The detailed diagnosis of this measure lists the domain on which the desktop is hosted, the name of the desktop, the IP address, the last boot time stamp of the desktop and the duration for which the desktop is online.
Total servers	Indicates the total number of servers provisioned through the VMware App Volumes Manager.	Number	The detailed diagnosis of this measure lists the domain name on which the server is hosted, the name of the server, the IP address, the last boot time stamp of the server and the current status of the server.
Online servers	Indicates the number of servers that were currently provisioned through the VMware App Volumes Manager.	Number	The detailed diagnosis of this measure lists the domain on which the server is hosted, the name of the server, the IP address, the last boot time stamp of the server and the duration for which the server is online.
Total writables	Indicates the total number of writable volumes on the VMware App Volumes Manager.	Number	
Attached writables	Indicates the number of writable volumes attached on the VMware App Volumes Manager.	Number	

3.2 The App Volumes - Infrastructure Layer

Using the tests mapped to this layer, administrators can constantly keep tab on the space usage of each datastore managed by the target VMware App Volumes Manager and the space utilization of

each storage group. Administrators can proactively be alerted to potential space crunch on each datastore as well as each storage group.

Figure 3.3: The test mapped to the App Volumes - Infrastructure layer

3.2.1 App Volumes - Storage Test

Shared storage has separate datastores for desktop and RDSH server master images and for App Volumes AppStacks. Shared storage is specific for all ESXi hosts that host desktops connecting to AppStacks and writable volume. If local storage is used, AppStacks can be placed on the same datastore where VMs reside. The App Volumes service can be configured to refer to local storage before referring to shared storage. If specified AppStacks exist on the local storage, then these AppStacks are mounted in favor of duplicate copies that exist on shared storage.

The VMware App Volumes Manager relies heavily on the storage (datastores) for connecting to the AppStacks and Writable volumes that hosts the applications and other files. Unavailability of a datastore or the lack of storage space in a datastore can severely hamper the operations of the virtual desktop and can consequently delay the boot time of the virtual desktops as the applications will not be attached to the desktop. By keeping constant tabs on the space usage of each datastore managed by the target VMware App Volumes Manager, this test proactively alerts you to potential space contentions on a datastore.

Target of the test : A VMware App Volumes Server

gent deploying the test : An internal/remote agent

Outputs of the test : One set of results for each datastore on the target VMware App Volumes Manager being monitored

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The host for which the test is to be configured.
Port	The port at which the specified Host listens to. By default, this is set to 3443.

Parameter	Description
AppVol User	By default, the eG agent uses the RESTful APIs to collect the metrics from the target VMware App Volumes Manager. To be able to connect to the RESTful API, the eG agent should be configured with the credentials of a user belonging to an active directory group that is vested with the Administrators (Read only) rights. Specify the credentials of such a user in this text box. To know how to assign the Administrators (Read only) role to an active directory group, refer to Section **2.1**.
AppVol Password	Specify the password that corresponds to the AppVol User.
Confirm Password	Confirm the password by retyping it here.
WebPort	By default, in most virtualized environments, the VMware App Volumes Manager listens on port 3443 irrespective of being SSL-enabled or not. This implies that while monitoring the target VMware App Volumes Manager , the eG agent, by default, connects to port 3443 of the VMware App Volumes Manager to pull out metrics. Accordingly, the WebPort parameter is set to 3443. In some environments however, the default port 3443 might not apply. In such a case, against the WebPort parameter, you can specify the exact port at which the VMware App Volumes Manager in your environment listens so that the eG agent communicates with that port.
SSL	Set the SSL flag to **Yes**, if SSL (Secured Socket Layer) is to be used to connect to the target VMware App Volumes Manager, and **No** if it is not.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Total appstacks	Indicates the number of AppStacks placed on this datastore.	Number	
Total writables	Indicates the number of writable volumes placed on this datastore.	Number	
Total storage space	Indicates the amount of space allocated to this datastore.	TB	
Used space	Indicates the amount of space that is already utilized by this datastore.	TB	Ideally, the value of this measure should be low. If this value grows close to that of the *Total storage space* measure, then you may consider

Measurement	Description	Measurement Unit	Interpretation
			adding more storage to the datastore, or free up the space in the datastore by deleting unnecessary data. Comparing the value of this measure across datastores will help you identify the datastore that is utilizing the maximum amount of storage space.
Free space	Indicates the amount of space that is available for use in this datastore.	TB	A high value is desired for this measure. A sharp/consistent decrease in the value of this measure is an indication for the administrators to add more free space to the datastore before the datastore runs out of free space.
Space utilization	Indicates the percentage of space utilized by this datastore.	Percent	A value close to 100% indicates that the datastore is currently running out of space.

3.2.2 App Volumes - Storage Group Test

By default, a number of datastores can be grouped together into a storage group. There are two types of storage groups:

- AppStack storage groups
- Writable volume storage groups.

AppStack storage groups replicate single AppStacks across multiple datastores. Writable volume storage groups distribute writable volumes across datastores.

When using AppStack storage groups, the App Volumes Manager manages the connection to the relevant AppStack, based on location and number of attachments across all the datastores in the group. Writable volume storage groups are used to distribute volumes across datastores for I / O and file distribution. Sometimes, when a user connects to the virtual desktop provisioned through the VMware App Volumes Manager, he/she may experience unexpected delays while the AppStacks and Writable volumes are being attached to the user. This may be due to the lack of storage space in the storage group. To avoid such unexpected delays and to improve the user experience on the VMs/desktops provisioned through the VMware App Volumes Manager, it is essential for the administrators to monitor the space utilization of the storage groups at all times. The App Volumes - Storage Group test helps administrators in this regard!

For each storage group on the target VMware App Volumes Manager, this test reports the number of datastores and the space utilization. Using this test, administrators can figure out potential space crunch (if any) on the storage groups.

Target of the test : A VMware App Volumes Server

gent deploying the test : An internal/remote agent

Outputs of the test : One set of results for each Storage group configured on the target VMware App Volumes Manager being monitored

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The host for which the test is to be configured.
Port	The port at which the specified Host listens to. By default, this is set to 3443.
AppVol User	By default, the eG agent uses the RESTful APIs to collect the metrics from the target VMware App Volumes Manager. To be able to connect to the RESTful API, the eG agent should be configured with the credentials of a user belonging to an active directory group that is vested with the Administrators (Read only) rights. Specify the credentials of such a user in this text box. To know how to assign the Administrators (Read only) role to an active directory group, refer to Section **2.1**.
AppVol Password	Specify the password that corresponds to the AppVol User.
Confirm Password	Confirm the password by retyping it here.
WebPort	By default, in most virtualized environments, the VMware App Volumes Manager listens on port 3443 irrespective of being SSL-enabled or not. This implies that while monitoring the target VMware App Volumes Manager , the eG agent, by default, connects to port 3443 of the VMware App Volumes Manager to pull out metrics. Accordingly, the WebPort parameter is set to 3443. In some environments however, the default port 3443 might not apply. In such a case, against the WebPort parameter, you can specify the exact port at which the VMware App Volumes Manager in your environment listens so that the eG agent communicates with that port.
SSL	Set the SSL flag to **Yes**, if SSL (Secured Socket Layer) is to be used to connect to the target VMware App Volumes Manager, and **No** if it is not.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Total datastores	Indicates the total number of datastores in this storage group.	Number	
Total storage space	Indicates the amount of space allocated to this storage group.	TB	
Used space	Indicates the amount of space that is already utilized by this storage space.	TB	Ideally, the value of this measure should be low. If this value grows close to that of the *Total storage space* measure, then you may consider adding more storage to the storage group, or free up the space in the storage group by deleting unnecessary data. Comparing the value of this measure across storage groups will help you identify the storage group that is utilizing the maximum amount of storage space.
Free space	Indicates the amount of space that is available for use in this storage space.	TB	A high value is desired for this measure. A sharp/consistent decrease in the value of this measure is an indication for the administrators to add more free space to the storage group before the storage group runs out of free space.
Space utilization	Indicates the percentage of space utilized by this storage space.	Percent	A value close to 100% indicates that the storage group is currently running out of space.

3.3 The App Volumes - Volumes Layer

Using the tests mapped to this layer, administrators can easily figure out the users accessing the AppStack and the applications that each AppStack is attached to. In addition, the space utilization of the Writable volumes can also be determined. Administrators can figure out the AppStack that is frequently utilized by the users and the writable volumes that are experiencing space crunch.

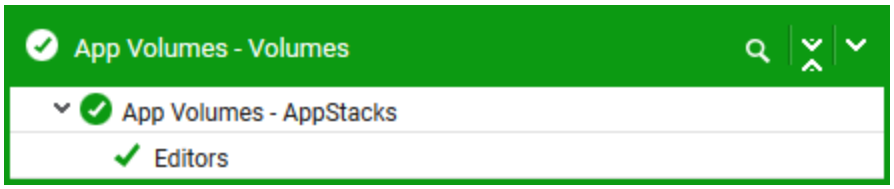

Figure 3.4: The test mapped to the App Volumes - Volumes layer

3.3.1 App Volumes - AppStacks Test

AppStack is a read-only volume containing any number of Windows applications, files, folders, registry settings, and more. Multiple AppStacks can be delivered to an individual system or user. An individual AppStack can also be delivered to more than one system or user. AppStacks can be assigned to AD user accounts, groups, OUs, or computer accounts to enable delivery of applications to end users.

Administrators can combine core applications into a single AppStack, making it easy to assign applications to users through AD object assignment. Administrators can make application updates available immediately or on next login or reboot.

When a user logs in through the VMware App Volumes Manager and hosts a desktop, if an AppStack containing the applications requested by the user is not attached on time, then, the user experience in accessing the AppStack may suffer to a great extent. To improve the user experience, it is important for the administrators to keep a constant vigil on the status of the AppStacks continuously. The App Volumes AppStacks test helps administrators in this regard!

This test auto-discovers the AppStacks attached to the target VMware App Volumes Manager and for each AppStack reports the status. In addition, this test reports the number of users accessing the AppStack and the number of applications attached to the AppStack. Using this test, administrators can figure out the AppStack that is frequently accessed by the users.

Target of the test : A VMware App Volumes Manager

gent deploying the test : An internal/remote agent

Outputs of the test : One set of results for each AppStack on the target VMware App Volumes Manager being monitored

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The host for which the test is to be configured.
Port	The port at which the specified Host listens to. By default, this is set to 3443.
AppVol User	By default, the eG agent uses the RESTful APIs to collect the metrics from the target VMware App Volumes Manager. To be able to connect to the RESTful API, the eG agent should be configured with the credentials of a user belonging to an active directory group that is vested with the Administrators (Read only) rights. Specify the credentials of such a user in this text box. To know how to assign the Administrators (Read only) role to an active directory group, refer to Section **2.1**.
AppVol Password	Specify the password that corresponds to the AppVol User.
Confirm Password	Confirm the password by retyping it here.
WebPort	By default, in most virtualized environments, the VMware App Volumes Manager listens on port 3443 irrespective of being SSL-enabled or not. This implies that while monitoring the target VMware App Volumes Manager , the eG agent, by default, connects to port 3443 of the VMware App Volumes Manager to pull out metrics. Accordingly, the WebPort parameter is set to 3443. In some environments however, the default port 3443 might not apply. In such a case, against the WebPort parameter, you can specify the exact port at which the VMware App Volumes Manager in your environment listens so that the eG agent communicates with that port.
SSL	Set the SSL flag to **Yes**, if SSL (Secured Socket Layer) is to be used to connect to the target VMware App Volumes Manager, and **No** if it is not.
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.

Parameter	Description
	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
Status	Indicates the current status of this AppStack.		The values reported by this measure and its numeric equivalents are mentioned in the table below: **Measure value** / **Numeric Value**: Disabled = 0; Enabled = 1; Unprovisioned = 2 **Note:** By default, this measure reports the **Measure Value**s listed in the table above to indicate the current status of this AppStack. The graph of this measure however, is represented using the numeric equivalents only i.e., 0 to 2.
AppStack assignments to user	Indicates the number of users / computers accessing this AppStack.	Number	Compare the value of this measure across AppStacks to figure out the AppStack that was accessed by a maximum number of users. The detailed diagnosis of this measure lists the users and the time at which the AppStack was assigned to each user.
Attachments from appstacks	Indicates the number users attached to this	Number	Compare the value of this measure to figure out the AppStack to which

Measurement	Description	Measurement Unit	Interpretation
	AppStack.		maximum number of users are attached. The detailed diagnosis of this measure lists the name of the users, the host name on which the user logged in, the storage location, the time at which the AppStack was attached to the user and the duration for which the AppStack is attached.
Applications from appstacks	Indicates the number of applications in this AppStack.	Number	The detailed diagnosis of this measure lists the names of the applications, version, the publisher of the application, whether the application is assignable or not and the date on which the application was created on the AppStack.

3.3.2 Writable App Volumes Test

With Writable Volumes, you can configure per-user volumes where users can install and configure their own applications and keep data that is specific to their profile. A Writable Volume is assigned to a specific user and becomes available to the user from any machine. A Writable Volume is an empty VMDK or VHD file that you assign to a specific user. It mounts to the VM when the user authenticates to the desktop. You can attach only one Writable Volume at a time per-user per OS. Any settings that the user applies to an application are stored in the writable volume

A writable volume can contain the following data:

- Application settings
- Licensing information
- Configuration files
- User-installed apps

Using VMware App Volumes Manager, you can create, import, edit, expand, and disable Writable Volumes.

The writable volumes feature does not provide a user environment management (UEM) solution. Writable volumes complement UEM solutions, which can manage data within writable volumes at a more granular level and provide contextual rules to enforce policy based on different conditions or events.

You can assign Writable Volumes to a user, group, computer, or organizational unit (OU). When a Writable Volume is created for a user, it is assigned to the user immediately. When the volume is assigned to a group, it is created when a user belonging to the assigned group logs in to the machine. A user can have more than one Writable Volume attached at the same time if the volume is OS-specific, or created for a computer with a specific prefix.

If a Writable Volume assigned to a user or a computer does not attach properly or if an assigned volume is running out of space, users may experience errors and hence, they may have to restart their sessions. If such errors are noticed frequently by the users, then the user experience may suffer and may leave the users frustrated. Therefore, it is important to monitor the state of writable volumes at all times. This can be achieved by the **Writable App Volumes** test!

This test auto-discovers the writable volumes created on the target VMware App Volumes Manager and for each writable volume, reports if the writable volume is attached to the user or disabled. Besides, this test also reports the space utilization of each writable volume. Using this test, administrators can figure out the writable volumes that are not attached to the user and also isolate the writable volumes that are experiencing space crunch. By analyzing the measures reported by this test carefully, administrators can investigate the reason behind the non-attachment of the writable volumes and initiate remedial measures before users start complaining.

Target of the test : A VMware App Volumes Server

gent deploying the test : An internal/remote agent

Outputs of the test : One set of results for each writable volume created on the target VMware App Volumes Manager being monitored

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The host for which the test is to be configured.
Port	The port at which the specified Host listens to. By default, this is set to 3443.
AppVol User	By default, the eG agent uses the RESTful APIs to collect the metrics from

Parameter	Description
	the target VMware App Volumes Manager. To be able to connect to the RESTful API, the eG agent should be configured with the credentials of a user belonging to an active directory group that is vested with the Administrators (Read only) rights. Specify the credentials of such a user in this text box. To know how to assign the Administrators (Read only) role to an active directory group, refer to Section **2.1**.
AppVol Password	Specify the password that corresponds to the AppVol User.
Confirm Password	Confirm the password by retyping it here.
WebPort	By default, in most virtualized environments, the VMware App Volumes Manager listens on port 80 (if not SSL-enabled) or on port 3443 (if SSL-enabled). This implies that while monitoring an SSL-enabled VMware App Volumes Manager directly, the eG agent, by default, connects to port 3443 of the VMware App Volumes Manager to pull out metrics, and while monitoring a non-SSL-enabled server, the eG agent connects to port 80. Accordingly, the WebPort parameter is set to 80 or 3443 depending upon the status of the SSL flag. In some environments however, the default ports 80 or 3443 might not apply. In such a case, against the WebPort parameter, you can specify the exact port at which the VMware App Volumes Manager in your environment listens so that the eG agent communicates with that port.
SSL	Set the SSL flag to **Yes**, if SSL (Secured Socket Layer) is to be used to connect to the target VMware App Volumes Manager, and **No** if it is not.
Report Detached Users	By default, this flag is set to **No** indicating that the test will not report metrics for the writable volumes that are detached from the users . However, if you wish this test to report metrics for the writable volumes that are detached from the users, then set this flag to **Yes**.
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:

Parameter	Description
	• 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
State	Indicates whether this writable volume is attached to the user.		The values reported by this measure and its numeric equivalents are mentioned in the table below: **Measure value** / **Numeric Value** Detached / 0 Attached / 1 **Note:** By default, this measure reports the **Measure Value**s listed in the table above to indicate whether the writable volume is attached to the user. The graph of this measure however, is represented using the numeric equivalents only i.e., 0 or 1.
Total storage space	Indicates the total amount of storage space allocated to this writable volume.	MB	
Used space	Indicates the amount of storage space already utilized by this writable volume.	MB	If the value of this measure is close to that of the *Total storage space* measure, it indicates potential space crunch in the writable volume. Administrators may increase the size of the writable volume so that the space utilization of the writable volume is optimal.
Free space	Indicates the amount of	MB	If the value of this measure is

<table>
<tr><th>Measurement</th><th>Description</th><th>Measurement Unit</th><th>Interpretation</th></tr>
<tr><td></td><td>space that is available for use in this writable volume.</td><td></td><td>alarmingly decreasing, then it indicates that the writable volume is currently running out of space.</td></tr>
<tr><td>Percent free space</td><td>Indicates the percentage of space that is available for use in this writable volume.</td><td>Percent</td><td>A low value is desired for this measure.
A high value for this measure indicates that the volume is running out of space.</td></tr>
<tr><td>Mounted</td><td>Indicates the number of times a user logged into this writable volume.</td><td>Number</td><td></td></tr>
<tr><td>Status</td><td>Indicates the current status of this writable volume.</td><td></td><td>The values reported by this measure and its numeric equivalents are mentioned in the table below:
<table><tr><th>Measure value</th><th>Numeric Value</th></tr><tr><td>Disabled</td><td>0</td></tr><tr><td>Enabled</td><td>1</td></tr></table>
Note:
By default, this measure reports the Measure Values listed in the table above to indicate the current status of this writable volume. The graph of this measure however, is represented using the numeric equivalents only i.e., 0 or 1.</td></tr>
</table>

3.4 The App Volumes - Activity Layer

Using the test mapped to this layer, administrators can promptly capture and report error/warning messages that were registered for each event type. In addition, administrators can be alerted to the connections of the event type that were too slow.

Figure 3.5: The test mapped to the App Volumes - Activity layer

3.4.1 App Volumes - Manager Logs Test

This test periodically scans the event logs of the target VMware App Volumes Manager for errors/warnings that were registered for each event type and promptly captures and reports those error/warning messages. In addition, this test reveals the number of jobs that were delayed for each event type, the connections that were successful and the connections that failed. Using this test, administrators can identify the connections of the event type that were too slow.

Target of the test : A VMware App Volumes Server

gent deploying the test : An internal/remote agent

Outputs of the test : One set of results for the events generated for each event type on the target VMware App Volumes Manager being monitored

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The host for which the test is to be configured.
Port	The port at which the specified Host listens to. By default, this is set to 3443.
AppVol User	By default, the eG agent uses the RESTful APIs to collect the metrics from the target VMware App Volumes Manager. To be able to connect to the RESTful API, the eG agent should be configured with the credentials of a user belonging to an active directory group that is vested with the Administrators (Read only) rights. Specify the credentials of such a user in this text box. To know how to assign the Administrators (Read only) role to an active directory group, refer to Section **2.1**.

Parameter	Description
AppVol Password	Specify the password that corresponds to the AppVol User.
Confirm Password	Confirm the password by retyping it here.
WebPort	By default, in most virtualized environments, the VMware App Volumes Manager listens on port 3443 irrespective of being SSL-enabled or not. This implies that while monitoring the target VMware App Volumes Manager , the eG agent, by default, connects to port 3443 of the VMware App Volumes Manager to pull out metrics. Accordingly, the WebPort parameter is set to 3443. In some environments however, the default port 3443 might not apply. In such a case, against the WebPort parameter, you can specify the exact port at which the VMware App Volumes Manager in your environment listens so that the eG agent communicates with that port.
SSL	Set the SSL flag to **Yes**, if SSL (Secured Socket Layer) is to be used to connect to the target VMware App Volumes Manager, and **No** if it is not.
Log File Path	Here, specify the path to the log file of the target VMware App Volumes Manager. By default, this is set to *none*. This implies that the eG agent will automatically collect the required metrics from the log file available in the default log file location. If the target VMware App Volumes Manager is installed in a different location, then, you have to explicitly specify the location of the log file in this text box. For e.g., if you have installed the target VMware App Volumes Manager in C:/, then, your specification should be C:/CloudVolumes/Manager/log.
DD For Info	By default, this flag is set to **No** indicating that this test will not report detailed diagnosis for the *Information count* measure. If you wish to view the detailed diagnosis of the *Information count* measure, set this flag to **Yes**.
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

Parameter	Description
	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 count	Indicates the number of information messages generated for this event type during the last measurement period.	Number	A change in the value of this measure may indicate infrequent but successful operations performed by one or more applications. The detailed diagnosis of this measure if enabled, lists the Event Time, Process ID, Process Type and the Message received.
Warning count	Indicates the number of warning messages generated for this event type during the last measurement period.	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 the VMware App Volumes Manager. The detailed diagnosis of this measure lists the Event Time, Process ID, Process Type and the Message received.
Error count	Indicates the number of error messages received for this event type during the last measurement	Number	A very low value (zero) indicates that the system is in a healthy state and all applications are running smoothly without any potential

Measurement	Description	Measurement Unit	Interpretation
	period.		problems. An increasing trend or high value indicates the existence of problems like loss of functionality or data in one or more applications. The detailed diagnosis of this measure lists the Event Time, Process ID, Process Type and the error message received.
Active requests	Indicates the number of active requests received for this event type during the last measurement period.	Number	
Delayed jobs	Indicates the number of jobs of this event type that were delayed during the last measurement period.	Number	A low value is desired for this measure. The jobs may be delayed due to various reasons such as unavailable background work processes, scheduling issues between the originating server and target server, other dependencies etc.
Connection success	Indicates the number of connections that were successful for this event type during the last measurement period.	Number	Compare the value across event types to figure out the event type for which most of the connections were successful.
Connection failed	Indicates the number of connections that failed for this event type during the last measurement period.	Number	A low value is desired for this measure. Compare the value of this measure across the event types to figure out the event type for which maximum number of connections failed.

Measurement	Description	Measurement Unit	Interpretation
Average connection success time	Indicates the average time taken for the connections to be successful for this event type during the last measurement period.	Seconds	A steady increase in the value of this measure is an indication that connectivity issues prevail. Administrators should promptly check the connections from time to time to avoid such issues.

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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