



Monitoring Microsoft RDS License Server

eG Innovations Product Documentation

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Chapter 1: Introduction

A Microsoft RDS License server is a computer on which the TS Licensing role service is installed. A license server stores all RDS CALs (Microsoft RDS server Client Access Licenses) that have been installed for a group of Microsoft RDS servers and tracks the RDS CALs that have been issued. One license server can serve many Microsoft RDS servers simultaneously. As clients connect to a Microsoft RDS server, the Microsoft RDS server determines if the client needs a RDS CAL, requests a RDS CAL from a license server, and then delivers that RDS CAL to the client. In the absence of RDS CALs, users will neither be able to connect to the Microsoft RDS server, nor access any of the applications published on it. To avoid this, you will have to continuously track license usage by the Microsoft RDS clients, proactively detect a potential contention for licenses, and ensure that the Terminal License server has adequate number of licenses to support the current and future load of the Microsoft RDS server.

This document describes the monitoring model that eG Enterprise prescribes for every Microsoft application, and the performance metrics each model collects.

Chapter 2: Monitoring the Microsoft RDS License Server

eG Enterprise provides a Microsoft RDS License monitoring model that periodically monitors the usage of the licenses stored on the Microsoft RDS License server and promptly alerts administrators if the license server is about to run out of RDS CALs.

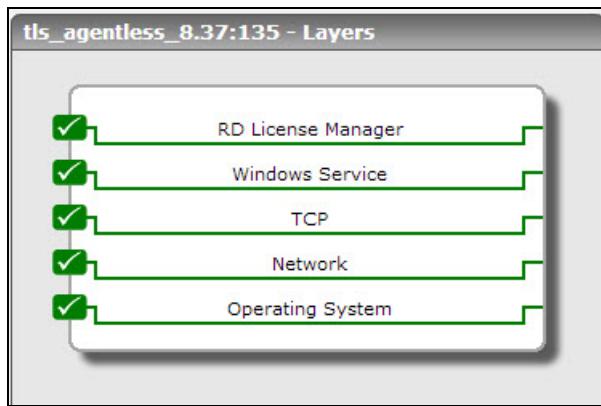


Figure 2.1: Layer model of the Microsoft RDS License server

Each layer of layer model is mapped to a variety of tests that capture even the smallest of non-conformances that a Terminal license server experiences. Using the metrics reported, the following performance queries can be accurately answered:

- Is the Microsoft RDS License server available over the network? Is it responding quickly to requests?
- How many RDS CALs are managed by the Microsoft RDS License server per Microsoft RDS server?
- Are too many users connecting to any particular Microsoft RDS server causing excessive usage of TS CALs?
- Will any Microsoft RDS server require additional licenses to be installed? If so, which Microsoft RDS server is it?
- Is any license about to expire?
- Are there any inactive licenses? If so, which ones are they?

Since the four layers at the bottom of the layer model have already been dealt with in the *Monitoring Windows and Unix Servers* document, this chapter will discuss the first layer only.

2.1 RD License Manager Layer

This layer monitors license usage.



Figure 2.2: The tests mapped to the TS CAL Licenses Utilization test

2.1.1 RDS CAL Licenses Utilization Test

Without an RDS CAL, a Microsoft RDS client cannot connect to a Microsoft RDS server and access the applications operating on that server. It is hence imperative that administrators periodically check whether/not the Microsoft RDS License server has enough RDS CALs to support the current and future user load of the Microsoft RDS server. To achieve this, administrators can use the **RDS CAL Licenses Utilization** test. For every Microsoft RDS server that is managed by the license server, this test reports the number, type, and usage of RDS CALs installed on the Microsoft RDS License server under a particular Key pack ID and purchased under a specific License program or Purchase method (this can be, Unknown, Retail, Built-in, Volume, Concurrent, Temporary, Open). Optionally, you can also group license usage by Microsoft RDS server alone (and not by key pack ID and purchase method). Using these statistics, you can rapidly detect probable license shortages and accurately point to the Microsoft RDS server that will potentially run out of licenses.

Target of the test : A Microsoft RDS License server

Agent deploying the test : An internal/remote agent

Outputs of the test : One set of results for every <Microsoft_RDS_server>_<License_program>_<KeypackID> combination.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The IP address of the host that is being monitored.
Port	Refers to the port used by the host.
Report Total	By default, this flag is set to Yes . This indicates that by default, the test reports license usage per <i><Microsoft_RDS_server>_<License_program>_<KeypackID></i> combination and also reports the total license usage across all key packs and license programs relevant to a particular Microsoft RDS server. This is why, by default, in addition to descriptors represented by a combination of <i><Microsoft_RDS_server>_<License_program>_<KeypackID></i> , a Total descriptor also appears for this test for every Microsoft RDS server. If you want the test to report metrics per <i><Microsoft_RDS_server>_<License_program>_<KeypackID></i> combination only, then set this flag to No .
Report Only Total	If you want the test to report metrics for the Total descriptor (of every Microsoft RDS server) alone and not for each <i><Microsoft_RDS_server>_<License_program>_<KeypackID></i> combination, set this flag to Yes . In this case, the test will report metrics for the Licenses in use measure alone. By default, this flag is set to No .
Ignore per User CALs	Microsoft RDS servers can operate in two licensing modes: Per Device (default factory setting) and Per User. A Per Device CAL gives each client computer or device the right to access a Microsoft RDS server. Using Per User licensing on the other hand, one user can access a Microsoft RDS server from an unlimited number of devices and only one CAL is needed instead of a CAL for each device. If you want this test to ignore the CALs that have been installed in the 'Per User' mode when computing license usage, set this flag to Yes . By default, this flag is set to No , indicating that the test, by default, also considers the CALs installed in the per user mode when reporting license utilization.
Ignore Temporary Licenses	By default, this flag is set to No . This implies that the test, by default, includes temporary licenses as well in the count of installed and used licenses. To make sure that the test disregards temporary licenses when computing license usage, 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.

Parameter	Description
	<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
CAL Type	Indicates the CAL type of the licenses for this Microsoft RDS server, installed under this Key pack ID and license program.		<p>CALs apply to either a "device" (as defined in the license agreement) or a "user". A business is free to choose either mode. In Per-User mode, a CAL is purchased to allow one user to connect to the server software. Any user can connect, but only one user may use a given CAL at any given time. Any number of CALs can be purchased to allow five, five hundred, or any number of users to simultaneously connect to the server. Any number of devices may connect to the server software, but only a set number of users can connect to it at once.</p> <p>Per-device mode operates in much the same way, but limits connections made by devices, rather than users. One CAL enables one device to connect to and use the server software, regardless of how many users are connecting.</p> <p>If the CALs apply to a user, then the value of this measure will be Per User. If the CALs apply to a device, then the value of this measure will be Per</p>

Measurement	Description	Measurement Unit	Interpretation								
			<p>Device. In the case of invalid CALs, the value of this measure will be Not Valid. The numeric values that correspond to these measure values have been discussed in the table below:</p> <table border="1"> <thead> <tr> <th>Measure Value</th><th>Numeric Value</th></tr> </thead> <tbody> <tr> <td>Per User</td><td>1</td></tr> <tr> <td>Per Device</td><td>0 or 3</td></tr> <tr> <td>Not Valid</td><td>2</td></tr> </tbody> </table> <p>Note:</p> <p>By default, the measure reports the Measure Values listed in the table above to indicate the CAL type. However, in the graph of this measure, the same will be represented using the numeric equivalents only.</p> <p>This measure will not be available for the Total descriptor.</p> <p>You can use the detailed diagnosis of this measure to know the license program and expiration date of each license.</p>	Measure Value	Numeric Value	Per User	1	Per Device	0 or 3	Not Valid	2
Measure Value	Numeric Value										
Per User	1										
Per Device	0 or 3										
Not Valid	2										
Total license	Indicates the total number of licenses installed for this Microsoft RDS server under this key pack ID and license program.	Number	<p>This measure will not be available for the Total descriptor.</p>								
Available licenses	Indicates the number of licenses under this key pack ID and license program that are still to be used by this Microsoft RDS server.	Number	<p>A high value is desired for this measure.</p> <p>This measure will not be available for the Total descriptor.</p>								

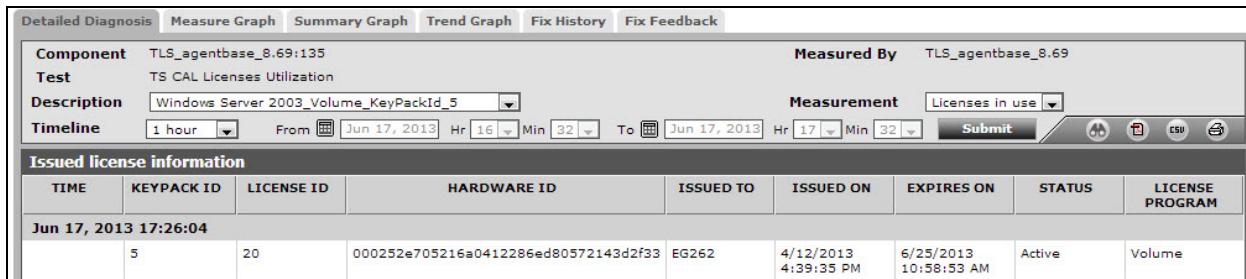
Measurement	Description	Measurement Unit	Interpretation
Licenses in use	Indicates the number of licenses under this key pack ID and license program that are currently used by this Microsoft RDS server. For the Total descriptor, this measure reports the number of licenses currently used by this Microsoft RDS server across all relevant key pack IDs and license programs.	Number	<p>A low value is desired for this measure. Compare the value of this measure for the Total descriptor across all Microsoft RDS servers to identify which Microsoft RDS server is over-utilizing the CALs.</p> <p>Using the detailed diagnosis of this measure, you can view the complete details of license usage. This includes the License ID of every license installed under a key pack, the license program under which each license was purchased, who it was issued to and when, the expiry date of license and its current status.</p>
License utilization	Indicates the percentage of licenses under this key pack ID and license program that are currently used by this Microsoft RDS server.	Percent	<p>A value close to 100% indicates excessive CAL utilization. This in turn implies that too many users are connecting to the Microsoft RDS server. You may want to install additional licenses to ensure that subsequent users are able to connect to and work with the Microsoft RDS server.</p> <p>This measure will not be available for the Total descriptor.</p>

The detailed diagnosis of the CAL type measure reveals the license program and expiration date of each license. If you have installed multiple licenses using a key pack ID, you can use the detailed diagnosis to know the purchase method and expiry date of every license under that key pack ID.

Component	TLS_agentbase_8.69:135	Measured By	TLS_agentbase_8.69				
Test	TS CAL Licenses Utilization						
Description	Windows 2000 Server_Built-in_KeyPackId_2	Measurement	CAL type				
Timeline	1 hour	From	Jun 18, 2013 Hr 9 Min 18	To	Jun 18, 2013 Hr 10 Min 18	Submit	
License information							
TIME	LICENSE PROGRAM	CAL TYPE	EXPIRATION DATE				
Jun 18, 2013 10:14:02	Built-in	Per Device	1/1/2036 1:30:00 PM				

Figure 2.3: The detailed diagnosis of the CAL type measure

Using the detailed diagnosis of the *Licenses in use* measure, you can view the complete details of license usage. This includes the License ID of every license installed under a key pack, the license program under which each license was purchased, who it was issued to and when, the expiry date of license and its current status. If you notice abnormal license usage on a Terminal license server, you can use the detailed diagnosis to figure out which Microsoft RDS server was issued the maximum number of licenses. You can also identify licenses that are inactive currently, so that such licenses can be revoked and made available for the use of active connections to the Microsoft RDS server.



The screenshot shows the 'Detailed Diagnosis' interface for the 'Licenses in use' measure. The top navigation bar includes tabs for 'Detailed Diagnosis', 'Measure Graph', 'Summary Graph', 'Trend Graph', 'Fix History', and 'Fix Feedback'. The main configuration area includes fields for 'Component' (TLS_agentbase_8.69:135), 'Measured By' (TLS_agentbase_8.69), 'Test' (TS CAL Licenses Utilization), 'Description' (Windows Server 2003_Volume_KeyPackId_5), 'Measurement' (Licenses in use), and a 'Timeline' set to '1 hour' from 'Jun 17, 2013' to 'Jun 17, 2013'. Below this is a table titled 'Issued license information' with columns: TIME, KEYPACK ID, LICENSE ID, HARDWARE ID, ISSUED TO, ISSUED ON, EXPIRES ON, STATUS, and LICENSE PROGRAM. A single row is displayed for 'Jun 17, 2013 17:26:04' with values: 5, 20, 000252e705216a0412286ed80572143d2f33, EG262, 4/12/2013 4:39:35 PM, 6/25/2013 10:58:53 AM, Active, and Volume.

TIME	KEYPACK ID	LICENSE ID	HARDWARE ID	ISSUED TO	ISSUED ON	EXPIRES ON	STATUS	LICENSE PROGRAM
Jun 17, 2013 17:26:04	5	20	000252e705216a0412286ed80572143d2f33	EG262	4/12/2013 4:39:35 PM	6/25/2013 10:58:53 AM	Active	Volume

Figure 2.4: The detailed diagnosis of the Licenses in use measure

Chapter 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 **Microsoft RDS License Server**. 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.