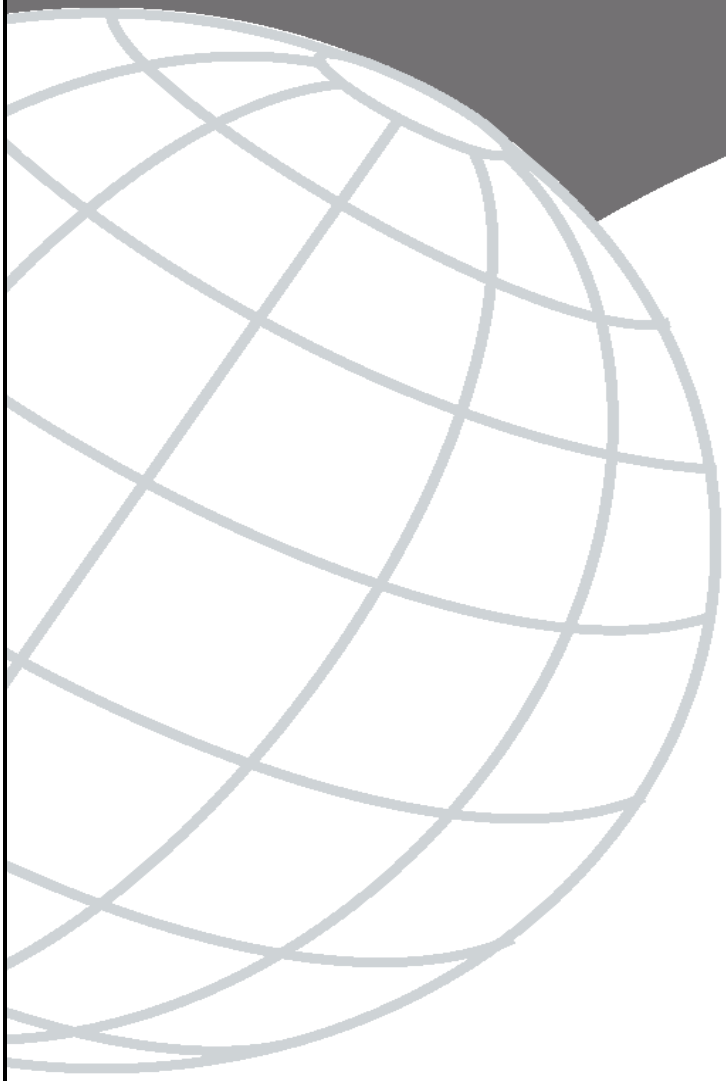

The eG Knowledge Base

Table of Contents

1.1 Installing and Configuring the eG Enterprise Suite

1.1.1 Overview

1. *Explain External, Internal and Remote Agents with examples?*

External agents are agents used to collect metrics from an external perspective. Metrics like Network availability, Network latency, Web server availability are collected by external agents.

Internal agents are used to collect metrics from inside an application or a system, i.e. it collects metrics by residing in the same machine as the application. Metrics like Cpu utilization, memory utilization etc are collected in this fashion.

Remote agents are remote data collectors, which offer the agentless monitoring capability. Using these kind of agents you can collect metrics which are otherwise supported only by internal agents. This is a license-controlled feature.

1.1.2 Installing the eG Enterprise Suite

1. *Do you have any agent that works at users workstations, or does the eG solution support only server based operating systems? If it does work at workstations, let us know for which operating systems it is available?*

The eG agent for Windows 2008 can be installed on Windows Vista and Windows 7 workstations. Similarly, the eG agent package for Windows 2012 can be installed on Windows 8 and Windows 10 workstations as well.

2. *I want to install the eG manager on Unix to listen on port 80 or port 443. Do I need to install the eG manager as root on Unix, or can I run the eG manager from a non-root account?*

On Unix, all ports below 1024 are privileged ports. Only super users or users authorized to access this port will be able to bind to these ports. If you wish to have the eG manager listening on a privileged port, you will need to follow the procedure listed below.

When the eG manager is installed on Solaris 10 or higher, you can install the eG manager and have it configured to listen to a privileged port (e.g., 80 or 443). Before starting the manager, login to the Solaris server as a super-user and run the following command to instruct the operating system to allow the eG user to open a privileged port:

```
usermod -K defaultpriv=basic,net_privadd <eG_user>
```

Log out and log back in as the eG user, and then, start the eG manager.

On Linux systems, follow the steps below:

- Install the eG manager on a port higher than 1024 – e.g., 7077.
- Use the **iptables** command to set up redirection from a privileged port to the port that the eG manager is using. For example, suppose you have installed the eG manager on port 7077 with SSL support and you would like the manager to listen on port 443; then, do the following:
- Start the Manager on port 7077 using the **start_manager** command.
- Execute the iptables command as below on the Linux system hosting the eG manager. These **commands should be executed from a super-user account**.

```
iptables -t nat -A OUTPUT –d <IP/HostName of the eG
Manager> -p tcp --dport 443 -j REDIRECT --to-ports 7077

iptables -t nat -A PREROUTING -d <IP/HostName of the eG
Manager> -p tcp --dport 443 -j REDIRECT --to-ports 7077
```

- Once these commands are executed, the eG manager will be accessible on port 443 as well.
- Entries configured using iptables are lost when the manager reboots. To save the iptables configuration, do the following:
- Run the following command as **root user**:

  /sbin/iptables-save > /opt/egurkha/iptables.fw

- Edit the file **/etc/rc.local** and append the following line to this file

  /sbin/iptables-restore < /opt/egurkha/iptables.fw

Now, even if the eG manager system is rebooted, the iptables configuration is restored.

3. *I encountered the following error message while unpacking the manager on a Windows system. How do I proceed?*

Figure 1: Error message that appears upon unpacking the eG Manager on Windows

The possible steps to fix this issue are:

- Repair the Windows OS
- Clean up the TEMP directories (e.g., c:\temp and c:\windows\temp)
- Stop any anti-virus programs that may be running temporarily until the installation is complete
- Check to make sure that the package that has been downloaded is not corrupt, or download the package yet again

4. *In a managed services environment, often different customers may have the same private IP addresses. In this case, how does the eG manager know that the agents are running on systems in different private networks?*

The eG manager uses the "nick name" provided at the time of installation of the agents for this purpose. Agents installed on the systems with the same IP addresses must have different nick names assigned to them. When adding these systems for monitoring, the nick names must be specified in the eG admin console. By default, the eG manager automatically does a reverse mapping of IP address to nicknames, so just assigning different nicknames for the agents is NOT sufficient for the eG manager to be able to differentiate between these systems. In the eG administrative interface, select the **Manager** option from the **Settings** tile, and then click the **General Settings** node in the **MANAGER SETTINGS** tree. Make sure that the **Automatically map IP address of agents to nick names** option is set to **No**, if the eG manager is to be used in a managed services environment.

5. *I have installed an eG agent on Windows without configuring a Proxy server. Later, I want to configure the agent-manager communication using a Proxy server. How do I do it without having to re-install the eG agent?*

To manually configure agent-manager communication through a Proxy server, follow the steps given below:

- Stop the eG agent.
- Edit the **debugoff.bat** file in the **<EG_INSTALL_DIR>\lib** directory on the agent host to include the proxy server IP and port.
- Towards this end, include the following entries after **–highSecurity false** in the **debugoff.bat** file: *-proxyHost <IP address of the Proxy server> –proxyPort <Port number of the Proxy server>* (see Figure 2).

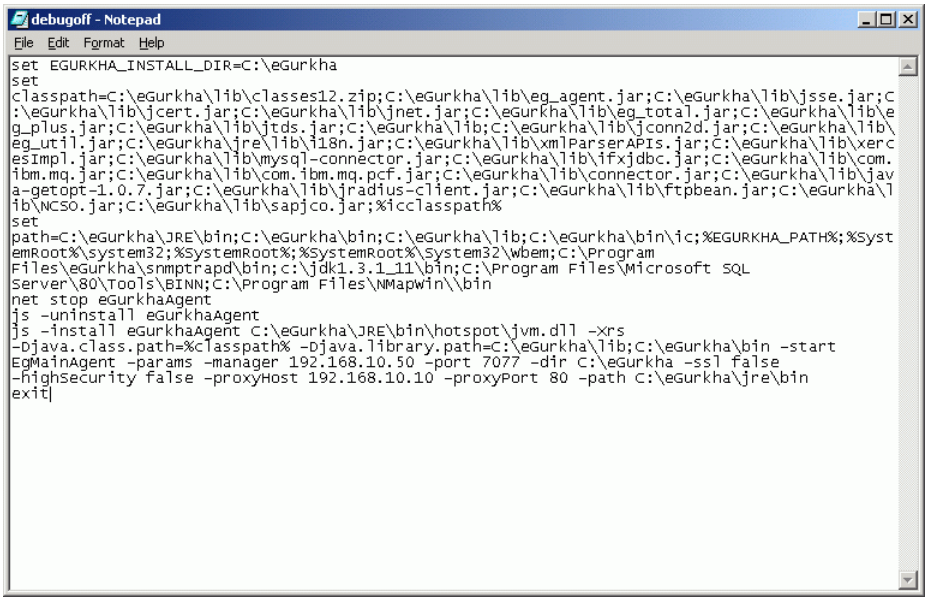

Figure 2: Specifying the entries corresponding to the proxy server host and port

- If the proxy server requires authentication, then include the following entries also after the **–proxyPort** entry in the **debugoff.bat** file: *-proxyUsername <User ID to be used for all agent-manager communications> -proxyPassword <Password of the specified user>* (see Figure 3).

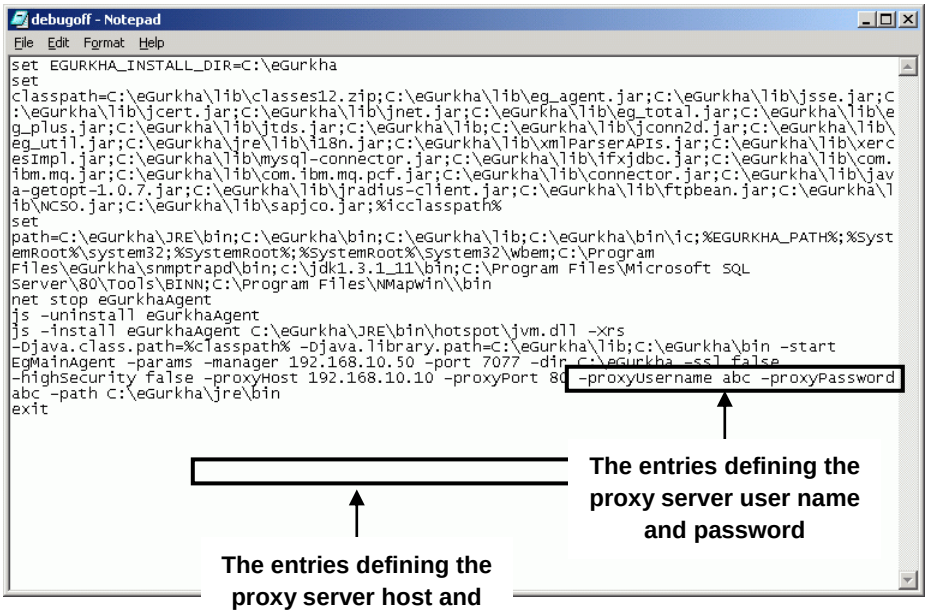

Figure roxy server authentication

- Then, save the **debugoff.bat** file.
- Next, make the same changes to the **debugon.bat** file in the **<EG_INSTALL_DIR>\lib** directory, and save the changes.
- Finally, start the eG agent.

6. *I installed the eG agent on a host running the Windows Italian operating system. But I am unable to start the eG agent. What do I do?*

When you are faced with problems while starting the eG agent on a non-English Windows host, then first check the language settings of that Windows host. Sometimes, Windows administrators install the Windows operating system with *English* as the language, but later deploy an MUI (Multi User Interface) pack to change the language setting. The eG agent fails to start only when installed on a Windows host for which the language setting was originally *English*, but was later changed to a non-English language.

To determine whether the language setting of an agent host was changed using an MUI pack, do the following:

- Login to the Windows host where the eG agent has been deployed.
- Open the **eg_lang_info.ini** file in the **<EG_AGENT_INSTALL_DIR>\lib** directory. Given below are the sample contents of this file:

```
[OS_INFO]
Language ID=0x0409
Language Code=ENU
Primary Language Code=ENU
Locale=ENU
UI Language code=ITA
```

- The **Primary Language Code** parameter in the file indicates the language setting of the Windows operating system at the time of its installation. For a Windows operating system that was installed with *English* as its language, the **Primary Language Code** will be **ENU** (as depicted by the sample above). If the language setting of the operating system was later changed using an **MUI** pack, then the **UI Language code** parameter in the **eg_lang_info.ini** file will display this new language.
- Typically, if no changes are made to the original language setting of the operating system, then both the **Primary Language Code** and the **UI Language Code** in the file will be the same - in the case of the example above, it will be *English* (**ENU**). On the other hand, if an **MUI** pack was deployed on the Windows host to change the language of the operating system to a non-guineEnglish one - say *Italian* (**ITA**) - then, the **Primary Language Code** will continue to be **ENU** and the **UI Language Code** will change to **ITA** (as depicted by the sample contents above). The eG agent will fail to start in this exact case.

In such a case, you can perform either of the following to start the eG agent:

- Typically, the **eGurkhaAgent** service runs using the *Local System* account. Sometimes, system accounts may not be able to recognize commands and output in non-English

languages. Therefore, reconfigure the **eGurkhaAgent** service to run from the account of a valid user to the Windows host, and then start the eG agent.

- If for security reasons, you prefer not to run the **eGurkhaAgent** service from a valid user account, then, copy the international settings of your operating system to the system accounts. To achieve this, follow the steps below:

- Login to the Windows host.

- Open the **Control Panel**, and click on the icon indicated by Figure 4 below. On an *English* operating system, this icon represents the **Region and Language** option in the **Control Panel**.

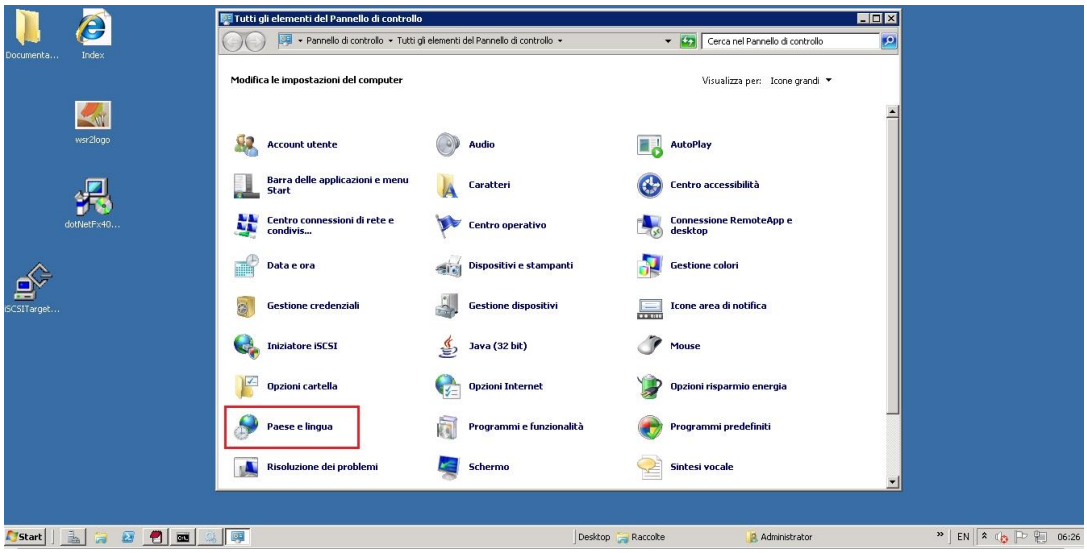

Figure 4: Clicking on the icon that represents the 'Region and Language' option

- In the (**Region and Language**) dialog box that then appears, click on the last tab page (on an *English* OS, this will be the **Administrative** tab page) and then click on the button (**Copy Settings** on an *English* OS) indicated by Figure 5 below.

Figure 5: Clicking the 'Copy Settings' button

- Click on the check box (**Welcome screen and system accounts**) indicated by Figure 6 below to copy the international settings to system accounts. Finally, click the **OK** button.

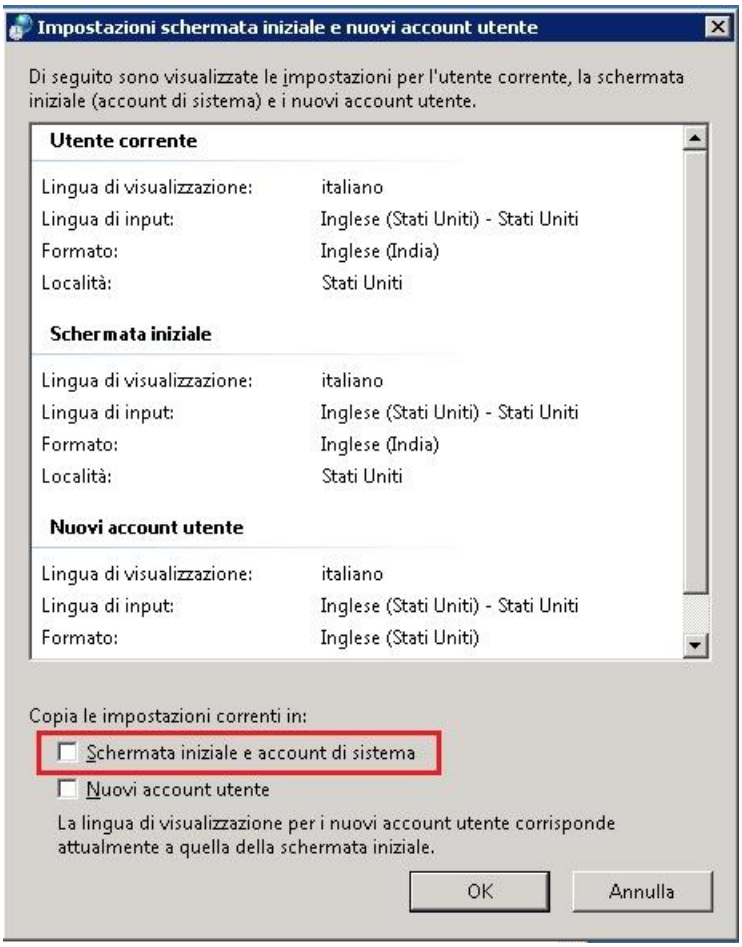

Figure 6: Selecting the check box for copying international settings to Welcome screen and system accounts

7. *I have anti-virus software running on my system, which periodically scans all files on my system for infections. After installing an eG agent/eG VM Agent on this system, should I exclude any agent-created files/folders from scanning, so that agent operations are not impacted? If so, which files/folders should be excluded?*

- The agent will create temporary files every time before it uploads any metrics to the eG manager – one file per test that is running, and also one file per test with detailed diagnosis ("_DD" suffix). These files are created in the **<EG_INSTALL_DIR>\agent\data** folder. Virus scans of all reads and writes to this folder will slow down the agent significantly. So, its best that you exclude all files in the data folder from scanning.

- The **<EG_INSTALL_DIR>\agent\threshold** folder has files – one for each test run. These files will be downloaded once an hour from the manager and written to. For best performance, antivirus should not interfere with the read/write operations in this folder.

- The **<EG_INSTALL_DIR>\agent\config** folder has configuration files that are downloaded

from the manager. When configurations are changed on the manager, these files will be updated. It is good practice to exclude this folder from scanning.

- The **<EG_INSTALL_DIR>\agent\logs** folder has agentout/err logs and other log files that may be used for storing metrics that need to persist beyond agent restarts. If logging is enabled and antivirus traps all reads and writes to the agent, this will also slow down the agent's performance significantly. So, you are advised to block the logs folder from scanning.

- If configuration tracking is enabled, the **<EG_INSTALL_DIR>\agent\configmgmt** folder has the last known configuration values – there is one file for each configuration test that is configured. These files are updated only if config changes happen, but yet, it is recommended that you exclude this folder from scanning.

- The **<EG_INSTALL_DIR>\bin** and **<EG_INSTALL_DIR>\lib** folders contain exe files that are required for the agent to run correctly. These exes should not be blocked from running. In some cases, we have seen files needed by the eG agent being removed by the antivirus software. This should be avoided.

- If you have installed an eG VM Agent on Windows VMs/desktops for "inside view" monitoring, then make sure that the **eGVmAgent** folder is excluded from virus scanning.

8. *The eG agent installation on Windows 2008 R2 fails with the following error in the error_log file:*

'Failed to find IP'

Why does this happen and how do I resolve this issue?

This is an environment problem. Please try the following steps:

- Open command prompt in "Run As Administrator mode"

- Execute the following steps

```
cd %windir%\system32
regsvr32 vbscript.dll
regsvr32 jscript.dll
```

- Then, try to install the eG agent. If installation still fails, try the following

    - Open up regedit and check the following registry key:

HKCR\CLSID\{B54F3741-5B07-11cf-A4B0-00AA004A55E8}\InprocServer32

- Within it, there is a registry value called (Default) which should carry a Data value of: C:\Windows\system32\vbscript.dll

- If it says something else, you'll need to change it to match the above. This should fix your problem!

1.1.3 Using the Remote Agent Controller (RAC)

1. *If reverse proxy is configured in a server farm, the eG manager will not be able to discover the IP address of the servers in the farm. Will RAC work in such a case?*

Yes. RAC can work in the above case. Being a tool that needs to be executed only from a domain administrator's account, RAC, once started, is automatically allowed access to the domain controller, from which it collects the NETBios names of all the servers in that domain. NETBios names allow applications on different computers to communicate with each other within the LAN environment. RAC needs the NETBios names to execute the remote commands. Generally, hostnames and NETBios names are equal in the target environment.

To execute the remote commands in the target boxes, the File and Print sharing service will have to be enabled. This will enable NETBios over TCP/IP protocol.

2. *What are the ports that need to be opened in order to make the remote installer work in a general environment?*

Ensure that the following TCP and UDP ports are open in the firewall: 135, 137, 138, 139 and 445.

1.1.4 Configuring the eG Enterprise Suite

1. *How to configure the eG agent to communicate via ISA Proxy with the eG Manager?*

To know how to configure an eG agent to communicate via an ISA Proxy server, refer to the *eG Installation Guide*.

2. *The eG agent is not able to communicate with the eG manager. What could be the reason and how do I resolve it?*

If the agent has been configured to access the eG manager using its hostname, then make sure that the eG manager's hostname is resolvable from the system on which the agent is running. Sometimes, if domain resolution is not properly configured on the server, the agent may not be able to communicate with the manager. In such cases, provide the eG manager's IP address when specifying the location of the manager to which the agent needs to connect.

3. On Unix, multiple web servers on the same host system are monitored and the eG web adapter is configured for all of these. As the number of web servers monitored is increased, the eG agent suddenly stops working - it dies within a few minutes of being started. A JNI exception is logged in hs_pid*.log. What do I do?

The reason for this occurrence is that the operating system restricts the number of times a process can attach to shared memory segments. If this value is low, the eG agent will fail to attach to the shared memory created when the web servers being monitored are running, and will crash with an exception.

The eG agent is a single process that attaches to different shared memory segments created by the web adapters for each of the web servers. The number of shared memory segments that the eG agent must be allowed to access is ***3*number of web servers*** that it is monitoring. For instance, if the number of web servers to be monitored is 6, the number of shared memory segments allowed per process should be at least 18.

The maximum number of shared memory segments allowed for a process on Unix (Solaris specifically) is set by the kernel configuration parameter **shminfo_shmseg** in the **/etc/system** file. Change this parameter according to the value above.

For instance, add the entry set **shmsys:shminfo_shmseg=50** in the **/etc/system** file. A system reboot will be required for this change to be effective.

4. How do I enable error logging during agent execution?

In Windows environments, executing the eG agent in the **debugon** mode automatically triggers error logging. The steps involved in this process are detailed below:

- Stop the eG agent.
- Run the **debugon.bat** file in the **<EG_AGENT_INSTALL_DIR>\lib** directory by double-clicking on it.
- Finally, restart the eG agent.
- Upon restarting, the following files will be automatically created in the **<EG_AGENT_INSTALL_DIR>\agent\logs** directory:
- The **agentout.log** file, which records details of the tests run and measures reported by the agent to the manager
- The **agenterr.log** and **error_log** files to which the runtime errors encountered by the eG agent are logged
- The **agentupgrade.log** file which provides the agent upgrade status.
- The errors (if any) will be logged in the **error_log** file that will be automatically created in the **<EG_AGENT_INSTALL_DIR>\agent\logs** directory.

You can 'switch off' error logging if so required, by running the **debugoff.bat** file in the **<EG_AGENT_INSTALL_DIR>\lib** directory.

On Linux, AIX, and HPUX systems, error and output logging for the eG agent can be triggered by editing the **start_agent** script in the **/opt/egurkha/bin** directory. The steps involved in this process are discussed hereunder:

- Open the **start_agent** file.
- Edit the line that begins with **nohup/opt/egurkha/jre/bin/java–Xrs EgMainAgent . . .**(see Figure 7).

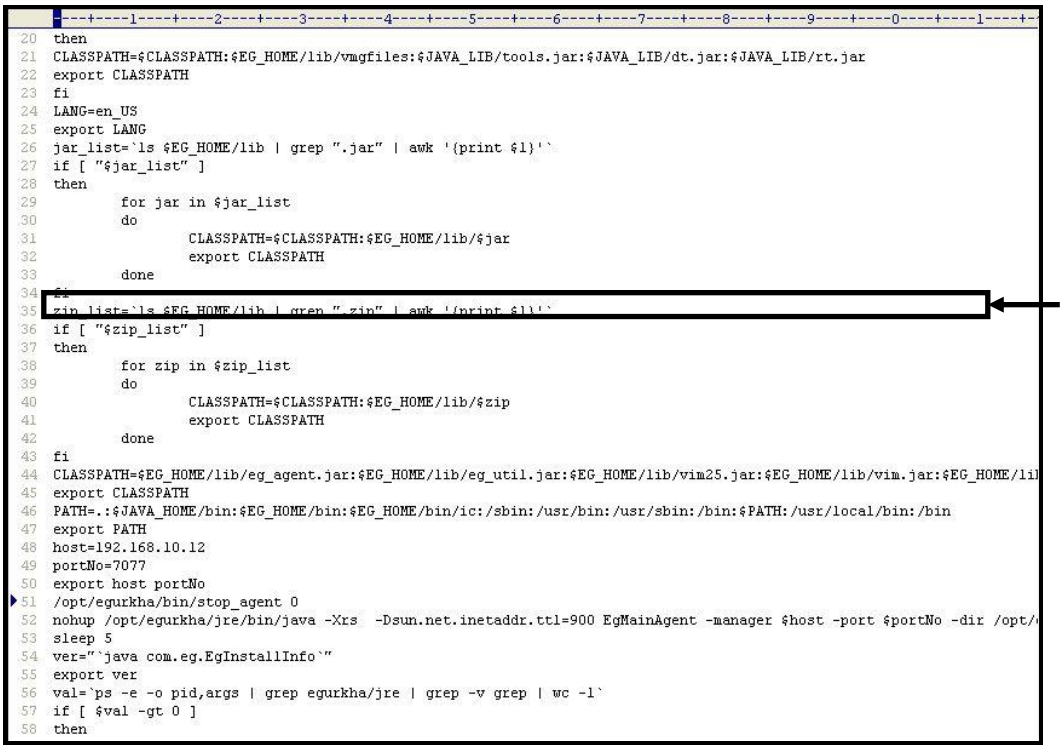

Figure 7: The start_agent script

- At the end of the line indicated by Figure 7, you can find an entry that reads as follows: **. . . /dev/null 2>/dev/null**.
- This entry is appended to the **nohup /opt/egurkha/jre/bin/java** line by default, and indicates that both output and error logging is not enabled for the eG agent in question, by default.
- To enable output logging, replace the first occurrence of **/dev/null** in the line with the full path to an output log file (see Figure 8). Similarly, to enable error logging, replace the second occurrence of **/dev/null** with the full path to the error log file (see Figure 8).

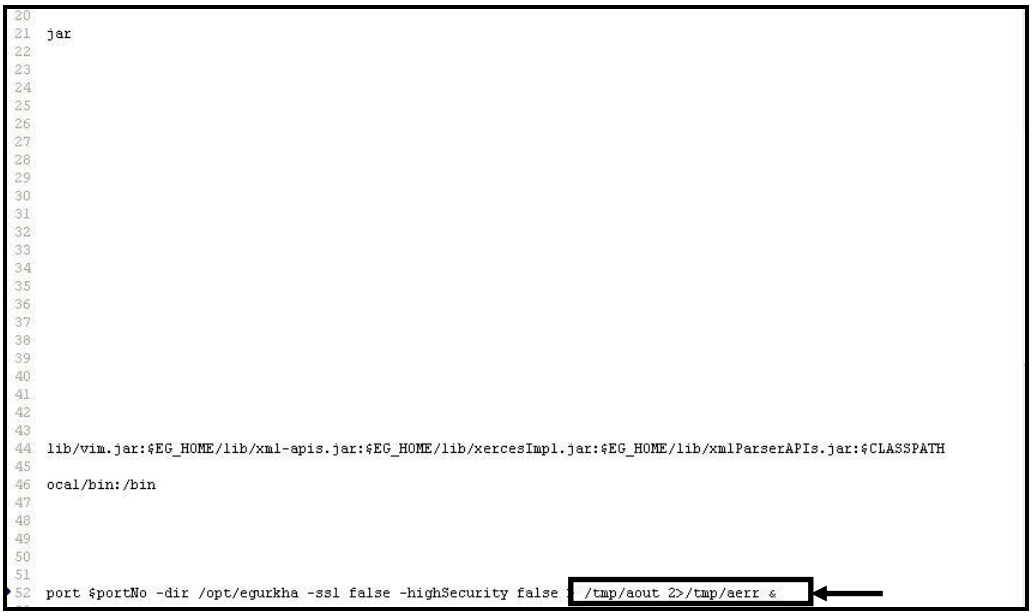

Figure 8: The edited start_agent script

- Finally, save the **start_agent** script.
- Restart the agent.

In Solaris environments, error and output logging for the eG agent can be triggered by editing the **starta** script in the **/opt/egurkha/bin** directory. The steps involved in this process are discussed hereunder:

- Open the **starta** file.
- Edit the line that begins with **nohup java –client -Xrs . . .** (see Figure 9).

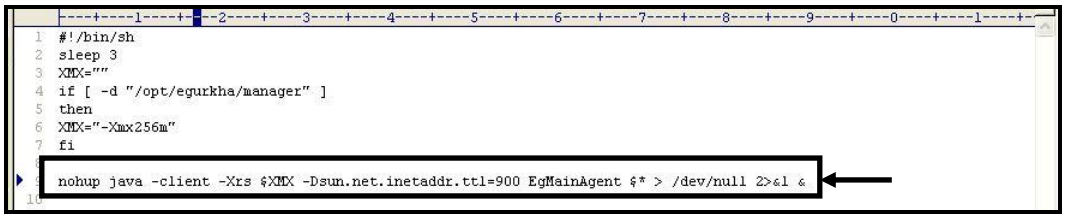

Figure 9: The starta script

- At the end of the line indicated by Figure 9, you can find an entry that reads as follows: **. . . /dev/null 2>&1**.
- This entry is appended to the **nohup java** line by default, and indicates that both output and error logging is not enabled for the eG agent in question, by default.
- Unlike Linux, HPUX, and AIX agents, which can be configured with two separate log files for error and output logging respectively, the agent on Solaris can only be configured with a single log file; both errors and output will be captured by this log file only. Therefore, to enable error and output logging, replace the **/dev/null** entry in the

nohup line with the full path to the log file (see Figure 10).

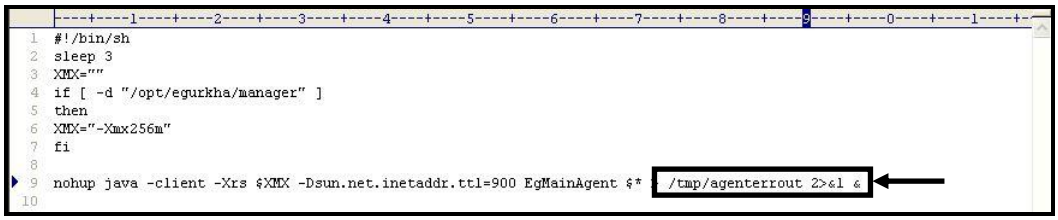

Figure 10: The edited starta script

- Finally, save the **starta** script.
- Restart the agent.

5. *If all the agents are configured using manager machine hostname, and the IP address of the manager machine changes, then do we need to run the changeManagerSettings.bat file to change the IP address of the manager machine on the eG manager?*

If you had given the IP address during the eG manager installation, then you should execute the **changeManagerSettings.bat** file to reflect the new IP address to the eG Enterprise system. On the other end, if you had given the hostname during the manager install, you do not need to execute the batch file.

6. *How do I change the IP address of the manager machine on the agent?*

The **changeAgentSettings** batch file would do the job for you. To run this batch file, do the following:

- Make sure that the hostname of the manager resolves to the relevant IP in the agent box by running **nslookup <name>** command.
- Stop the agent.
- Run the **changeAgentSettings.bat** script and provide the necessary details.
- Run the **debugoff.bat** script.
- Start the agent.

7. *I want to use a VPN to transmit data to the eG manager. Moreover, I would like to configure only one server allowing outgoing access via VPN, with the eG agents channeling their communications via that server. How can I configure this setup?*

There is no straight forward way to setup this within the eG framework, however, there is a work around. A proxy server can be setup in your environment and then when deploying the eG Agent, it can be configured to use this proxy server for communication to the manager. This way all the data from the agent to the manager from that network will be channeled via the proxy server. Enabling the VPN access from the proxy to the Manager would achieve your need.

8. Will the eG manager and agents deployed in a target environment function as is, even if the domain is upgraded?

eG managers or agents do not depend on any particular group or user to run apart from local / domain admin account. So, the manager and agents will work even if the domain is upgraded.

9. How do I migrate the eG Manager and eG Agent to another hardware?

If 'migration' only involves a change in the IP address of the eG manager box, run the **changeManagerSettings.bat** available in the **<EG_INSTALL_DIR>/lib** folder.

If on the other hand, you want to use a completely new box, it is recommended that you reinstall the manager on this box (so that the entire eG environment is set up properly). During reinstall, use a different database name (so that the existing database is not overwritten). Also, install using the same directory setting for the eG manager (e.g., if the original manager is installed in **c:\egurkha**, the new manager also has to be in the same place). Once the new manager is up, you will need to copy all the config files (available in the **<EG_INSTALL_DIR>\manager\config** directory) from the old box to the new one. Then you will have to run the **changeManagerSettings.bat** file. It is recommended that you take assistance from an eG consultant while performing this procedure.

10. How do I the change the port number of an eG manager on Windows from 7077 to 80 or 443?

You can change the port number to 80 or 443 by executing the **changeManagerSettings.bat** file available in the **<EG_INSTALL_DIR>\eGurkha\lib** directory. Upon executing, this batch file will request you to input the new IP address and port number. If you want to change the port number alone, then provide the old IP address itself followed by the new port number. Finally, restart the eG manager.

For the eG agent to communicate with the updated port number, update the appropriate eG manager port number in the **debugon.bat** and **debugoff.bat** file in the **<EG_INSTALL_DIR>\lib** directory.

11. Inserts to my eG database are taking a very long time. As a result, my disk queue length is growing rapidly, choking my disk. Both the eG data files and transaction log files are sharing the same disk partition. What do I do?

The ideal solution for this problem is to place the data files and transaction log files in two different disk drives. For this, follow the steps below:

- Stop the eG manager
- Detach the eG database using SQL Management Studio
- Move the transaction log file 'manually' using windows explorer from the 'Data file' drive to a different drive.
- Attach the eG database again using SQL Management Studio
- You will be prompted for the new location of the transaction logs; provide the new

location.

- After database is attached, test the SQL connectivity and start the eG manager.

12. My eG database has grown very big in size. Is there any means of checking if any space is still unused in the database? If so, what is it? Can you also provide tips for optimizing my database?

You can find out the size of each table in the eG database using the steps detailed below:

- Open the browser and execute the following URL

http:<managerIP>:<port>/final/admin/EgDbUtility.jsp?whoami=egurkha&pwd=admin

For example :

http://192.168.11.173:7077/final/admin/EgDbUtility.jsp?whoami=egurkha&pwd=admin

- **eG DB Maintenance** utility will get opened with the browser. The password to use this utility is '2benefit'. Check the option **Update DB Statistics**, and then execute this utility. The output will give you the number of rows, data size, index size and unused space in the table.

To know how to reclaim the unused database space, use the procedures outlined in the *eG Manager – Backend Database Maintenance* document in our FTP site.

13. I turned on agent debug using the 'Agent – Status' UI in the eG admin interface. Can I turn off agent debug manually in the agent side?

When enabling/disabling agent debug, please follow the guidelines outlined below:

- Enabling/Disabling the debug on the agent side is a manual process. You have to execute debugon.bat for enabling the debug and debugoff.bat for disabling the debug. It is a must that you restart the agent once you are done with either operation.

- On the manager side, you can enable/disable the agent debug using the Agent – Status UI. You can check the control 'Output Logging Enabled?' for enabling the debug and uncheck the same control for disabling the debug. This process will automatically enable/disable the debug without restarting the agent.

- If you enable the agent debug from the manager UI, you must disable the same from the manager UI only. Likewise, if you enable the agent debug manually in the agent side, you should also disable it in the agent side only.

14. I know that the eG manager runs on Apache Tomcat. I also know that to connect to eG manager via the browser, I will have to

provide the HTTP/HTTPS URL of the manager in the browser address bar. However, I am concerned that the 'Apache-Coyote/1.1' web server information can be obtained from the HTTP response header. Can this information be masked somehow?

To mask the server header information, do the following:

- Edit the **<EG_INSTALL_DIR>\manager\tomcat\conf\server.xml** file, and add a "server" directive as show in Figure 26 below:

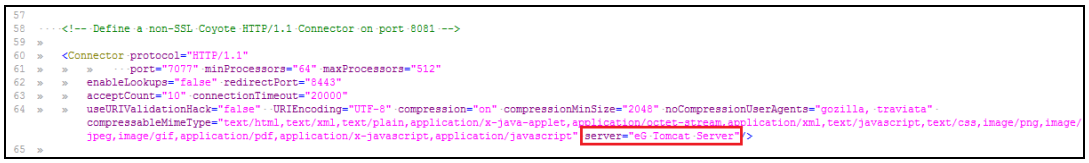

Figure 11: Including a 'server' directive in the server.xml file

- Save the file.
- Restart the eG manager.

1.1.5 Starting the eG Manager and Agents

1. *Do we have to start the agent on the eG manager box to monitor that host?*

Yes. The eG agent in the eG manager box should be running to manage that box.

2. *The eG manager did not start on Windows.*

A few reasons for this occurrence are given below:

The license may not be a valid one

The machine might not have been restarted after the eG manager was installed

However, if the problem is not due to any of the above parameters, then do the following:

Execute the **mgrdebugon.bat** file from the **<EG_INSTALL_DIR>\lib** directory.

Then, open the **<EG_INSTALL_DIR>\manager\tomcat\logs\catalina.log** file, and check whether the following error message has been logged therein: *Content is not allowed in prolog*

If the above-mentioned error message exists in the **catalina.log** file, then try opening the **tomcat-users.xml** file from the **<EG_INSTALL_DIR>\manager\tomcat\conf** directory using an XML browser (e.g. Internet Explorer).

If an error appears, it is a clear indicator that the **tomcat-users.xml** file has been corrupted.

To resolve this issue, you need to replace the corrupted **tomcat-users.xml** file with a new one. Therefore, if you have a backup of your eG manager, then copy the **tomcat-users.xml** file from the backup to the **<EG_INSTALL_DIR>\manager\tomcat\conf** directory of the current manager.

Then, try starting the eG manager.

3. When I start the agent, I see a message that says that the agent failed to start. What can I do to overcome this problem? Alternatively, when I try to setup the agent on Unix systems and provide a nickname for the agent, I see an error message about missing libraries.

This problem can occur if the Java Runtime Environment (JRE) that is bundled with the eG agent is not compatible with the underlying operating system libraries.
To overcome this problem, download the latest JRE from http://java.sun.com and replace the **<EG_INSTALL_DIR>\jre** directory with the corresponding directory from the downloaded JRE version. After doing this, restart the agent.

4. When I tried to start the eG agent installed on Solaris 10, the following error message appears. What is the problem, and how do I resolve it?

```
Starting the eG Agent . . .
**************************************************************************
*****
The eG Agent Error: can't find libjava.so. failed to start ...
Please check the file: /opt/egurkha/agent/logs/error_log for details
**************************************************************************
*****
```

Such an error message may appear, if the server on which you are installing the eG agent is a 64 bit Sun System. In this case, the JRE bundled with the eG agent may not be compatible with the hardware on which the agent is being installed. To resolve the issue, you will have to download a JRE compatible with the hardware that is being used, install it on the system, remove the **/opt/egurkha/jre** directory, and create a link from the install directory of the new JRE to **/opt/egurkha/jre**.

5. The eG manager installed on Windows 2008 did not start. What do I do?

- To start an eG manager on a Windows 2008 server, 'administrator' privileges are required. Therefore, to start the eG manager, follow the Start -> Programs -> eG Monitoring Suite -> eG Manager menu sequence, right-click on the **Start Manager** menu option, and pick the **Run as administrator** option.

- Open the IIS Manager Console, locate the 'egurkha' website in the tree-structure in the left pane, click on it, and see if this results in the following error message in the right pane:

  HTTP Error 404.2-Not Found

  The page you are requesting cannot be served because of the ISAPI and CGI restriction list settings on the Web server

If such an error message appears, then it indicates that IIS and CGI restrictions have been imposed on the egurkha web site. To resolve the issue, do the following:

- Login to the Windows 2008 server.
- Open the **Internet Information Services (IIS) Manager** console on the server.
- Once the console opens, click on the node representing the IIS web server in the tree-structure in the left pane of the console (see Figure 12).

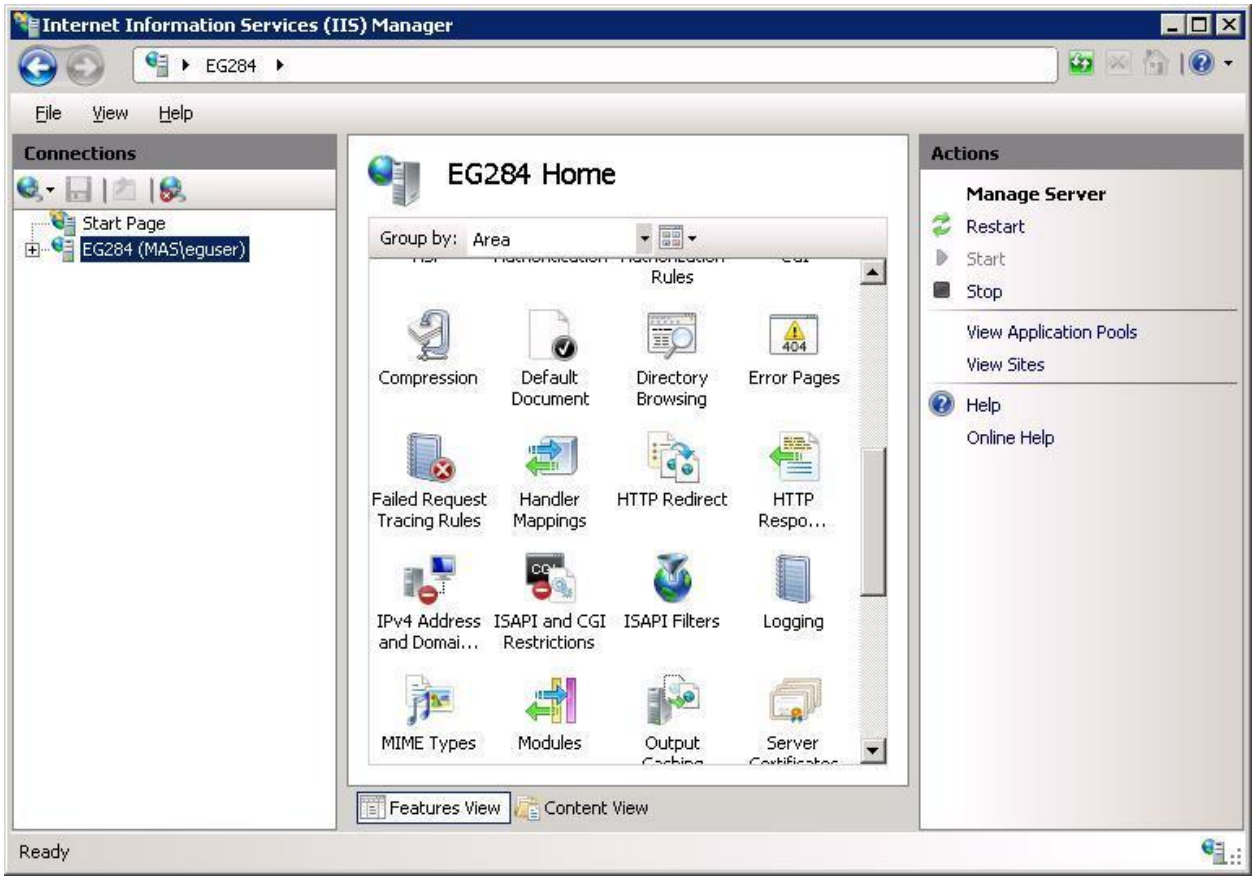

Figure 12: Clicking on the node representing the IIS web server in the left pane of the console

- The right pane will then change to display a variety of properties that can be defined for the IIS web server. Browse the list to locate the **ISAPI and CGI Restrictions** property, and click on it. Figure 13 will then appear listing the ISAPI and CGI extensions that can run on the web server. Look

for **egurkha** in the list, and when found, check to see whether it is set to **Allowed**. If not, click on the **Edit Feature Settings** button indicated by Figure 13.

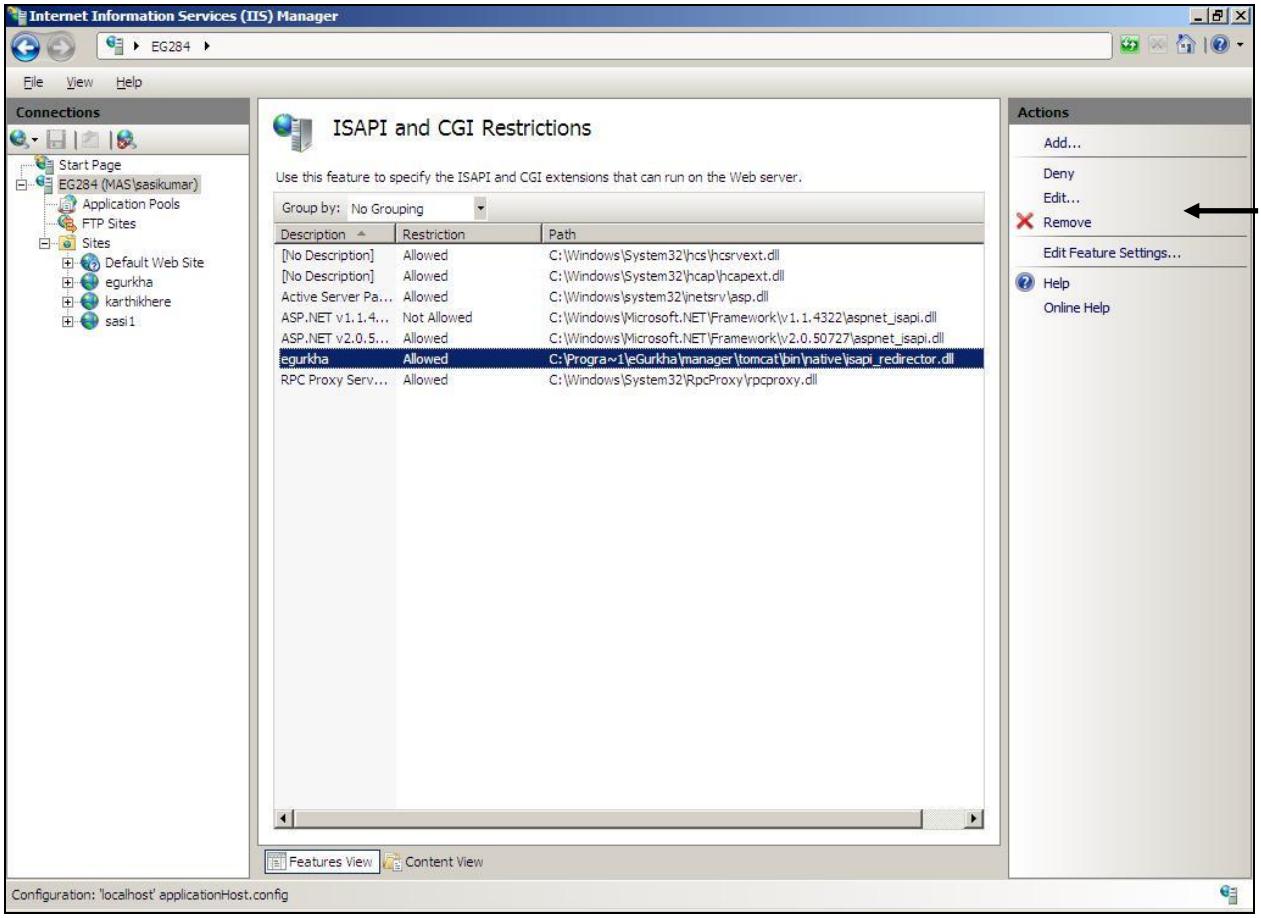

Figure 13: Checking whether the 'egurkha' extension is Allowed to run on the web server

- Clicking on the button indicated by Figure 13 will invoke Figure 14. To lift the ISAPI and CGI restrictions off the **egurkha** extension, select the **Allow unspecified CGI modules** check box and the **Allow unspecified ISAPI modules** check box in Figure 14, and click the **OK** button. You will then find that the **egurkha** listing in the **ISAPI and CGI Restrictions** window is set to **Allowed**.

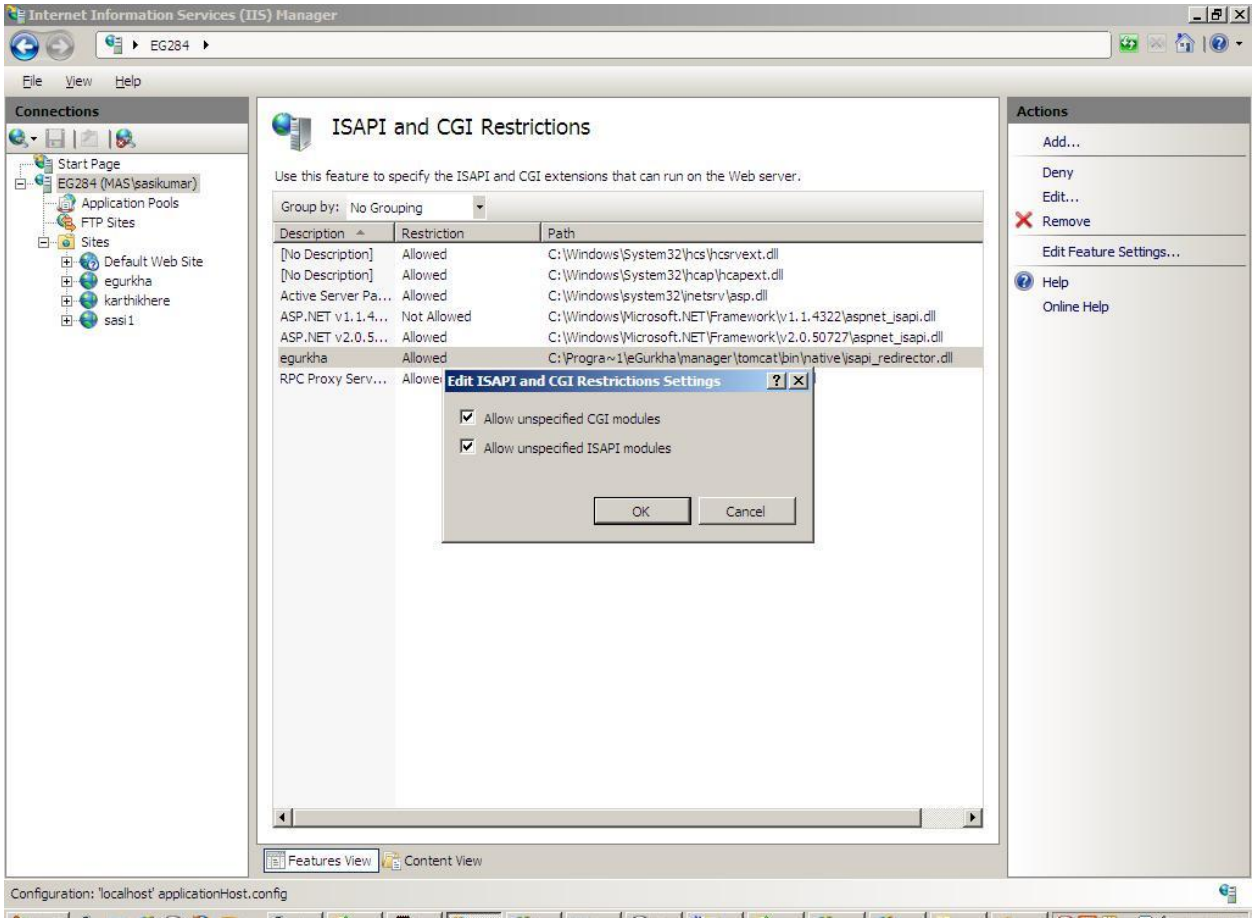

Figure 14: Lifting the ISAPI and CGI restrictions from the egurkha extension

- Try and recall whether you executed the **changeManagerSettings.bat** file to run the eG manager using a host name. If so, then this could also be causing issues with manager-setup. This is because the **changeManagerSettings.bat** file, upon execution, inserts the following entry in the **eg_external.ini** file, which prevents the external agent (i.e., the default external agent on the eG manager) from downloading the **eg_agents.ini** file.

```
[Eg_External_Agents]

sinwebs301=sinwebs301,sinwebs301
```

To tackle this, remove the aforesaid entry from the **eg_external.ini** file, login to the administrative interface of the eG manager as *admin* and add a new external agent using the menu sequence Agents -> External -> Configure. When this is done, the entry in the **eg_external.ini** file will change as shown below:

```
[Eg_External_Agents]

sinwebs301=34.88.3.186,sinwebs301
```

- However, if the problem is not because of any of the above parameters, then do the following:

- Execute the **mgrdebugon.bat** file from the **<EG_INSTALL_DIR>\lib** directory.
- Then, open the **<EG_INSTALL_DIR>\manager\tomcat\logs\catalina.log** file, and check whether the following error message has been logged therein: *Content is not allowed in prolog*
- If the above-mentioned error message exists in the **catalina.log** file, then try opening the **tomcat-users.xml** file from the **<EG_INSTALL_DIR>\manager\tomcat\conf** directory using an XML browser (e.g. Internet Explorer).
- If an error appears, it is a clear indicator that the **tomcat-users.xml** file has been corrupted.
- To resolve this issue, you need to replace the corrupted **tomcat-users.xml** file with the correct one. Therefore, if you have a backup of your eG manager, then copy the **tomcat-users.xml** file from the backup to the **<EG_INSTALL_DIR>\manager\tomcat\conf** directory of the current manager.
- Then, try starting the eG manager.

6. The eG manager failed to start. The error_log revealed the following error:

Issue : ERROR UploadServlet Failed to insert measurements. The tablespaces used for the eG database could be full ...

INFO DbInfo:insertToDbTableFromUpload java.sql.sqlexception: could not allocate space for object 'dbo.processtest'.'idx_processtest' in database 'egmonitor' because the 'primary' filegroup is full. create disk space by deleting unneeded files, dropping objects in the filegroup, adding additional files to the filegroup, or setting autogrowth on for existing files in the filegroup. Query is INSERT into ProcessTest WITH (ROWLOCK) (TRGT_HOST,PORT_NO,SITE_NAME,INFO,MSMT_HOST,MSMT_TIME,NUM_PROC,NUM_PROC_ST,CPU_UTIL,CPU_UTIL_ST,MEM_UTIL,MEM_UTIL_ST) values ('MHCALBESXP06','NULL','NULL','+vcagent','MHCALBESXP06',convert(datetime,'06/01/2009 01:27:56',103),'2','GOOD','0.7','GOOD','1.4','GOOD')

What does this mean, and how do I resolve this error?

- This error occurs when the database runs out of space and is not able to insert any more measurement records.
- Sometimes fragmented indexes can cause a severe space crunch on the database. By performing periodic database maintenance operations, such anomalies can be averted.

One of the key best practices for database maintenance is to re-index the tables periodically. This should be done at least once a month. If not, then this can also cause an unnecessary increase in the database size, thereby rapidly eroding the space in the database.

You can re-index the eG database by executing the command **<EG_INSTALL_DIR>\bin\ExecuteIndexes.bat**. This will recreate the indexes, create adequate space, and enhance overall database performance. Figure 15 and Figure 16 depict sample scenarios, indicating the space available in the eG database before and after re-indexing.

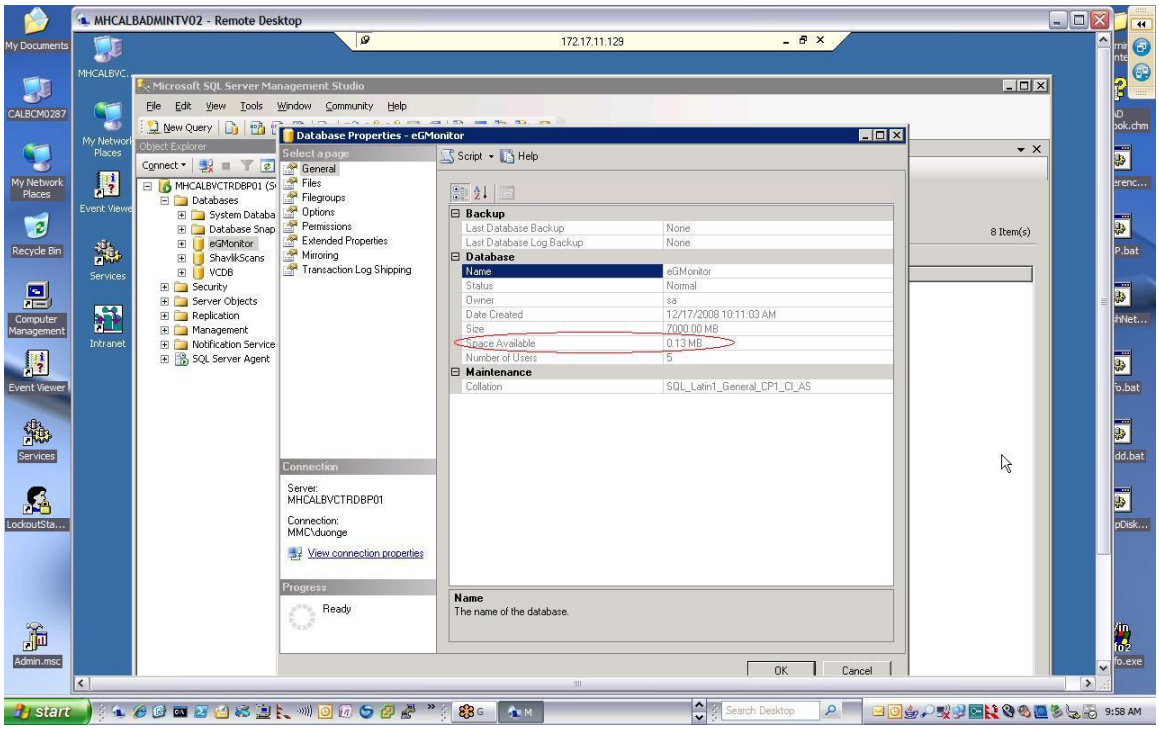

Figure 15: Space available in the eG database before re-indexing

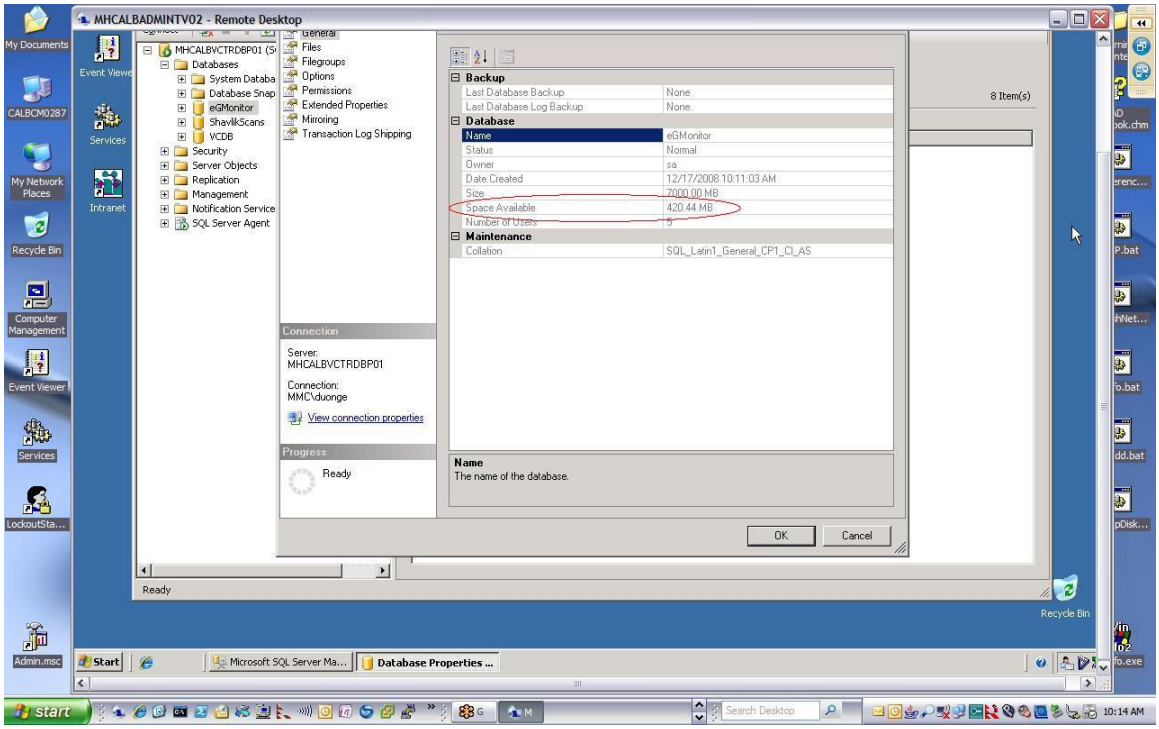

Figure 16: Space available in the eG database after re-indexing

You can also configure the eG manager to automatically re-index the eG database at pre-defined intervals. To achieve this, you would have to edit the **eg_services.ini** and **eg_indextables.ini** files.

The **eg_services.ini** file in the **<EG_INSTALL_DIR>\manager\config** directory comprises of an **IndexRebuild** flag (in its **[MISC_ARGS]** section). If this flag is set to yes, then the trend manager, upon execution, will automatically initiate an index recreation process. If this process is to be performed manually, then set the **IndexRebuild** flag to **no**.

A file named **eg_indextables.ini** also exists in the **<EG_INSTALL_DIR>\manager\config** directory, which consists of the following entries:

- **MaxIndexTime**, which indicates the duration (in minutes) for which auto index creation will run. If this parameter is set to 60, it means that the auto index creation will run for 60 minutes, i.e., 1 hour.
- **ReBuildFrequency**, which governs how frequently the auto index creation process should run. If this parameter is set to 2, it means that the auto index creation process will run every two days.

Besides re-indexing, setting the **AutoGrowth** flag of the eG datafiles to **unrestricted growth** will also ensure that the eG database does not experience space inadequacies (see Figure 17).

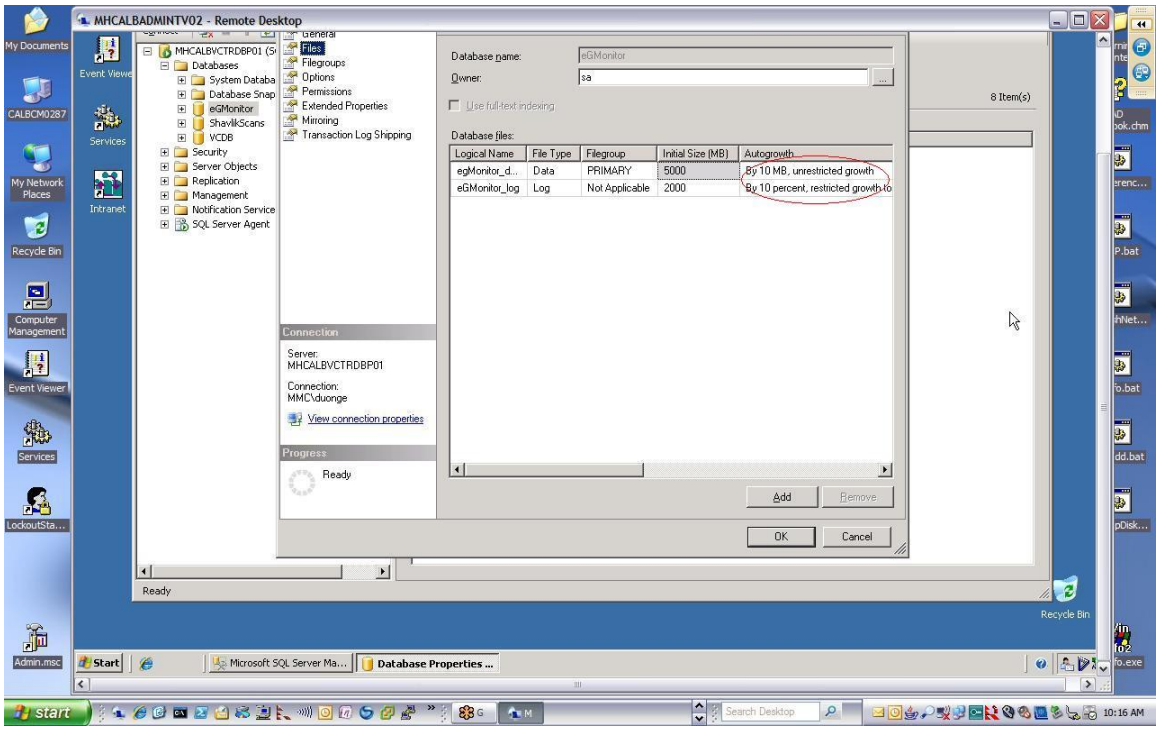

Figure 17: Setting the AutoGrowth option to unrestricted growth

7. The eG agent stops after running for a few hours and has to be manually restarted. This happens on Windows OSs. What is the reason for this and how can this be fixed?

On Windows systems, the user account used to run the eG Agent on a system has to be a part of the local administrator group of that system. The two basic privileges that the user running the eG agent should have are "allow log on locally" and "log on as a service". If the proper privileges are not provided to the user running the eG agent service, the eG agent will stop after running for a while.

8. The eG agent service appears to be marked for deletion in the control panel. Why did this happen and what do I do?

Sometimes if you run debug on/off by keeping the service control panel open, the windows marks the eG agent / agentmon service to deletion state. If so, please follow the procedure:

- Run "regedit.exe" in the Start->Run
- Look for the following registry keys:
  - HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\eGurkhaAgent
  - HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\eGAgentMon
- Delete the above keys one by one.
- Run the command createAgent.bat from <EG_INSTALL_DIR>\lib folder. This will create the above two services again.

9. An agent suddenly stopped running on a target system. Why does this happen and what do I do?

This could happen under the following circumstances:

- If the manager is unreachable when the agent was started last
- If the manager is down when the agent was started last

In both the cases the agent would go for an incremental sleep. Restarting the agent would resolve this.

To help identify the reasons behind the agent not running, do the following:

- Examine to see if the **<EG_INSTALL_DIRECTORY>\agent\data** directory has some files with test names on that box.
- Examine the log files located in **<EG_INSTALL_DIRECTORY>\agent\logs**

Some common errors we come across in such situations in the error logs are like:

- "EgManager could not be contacted": Indicates that the agent is having issues connecting and talking to the manager via the network.
- "Applications in this host is currently not being managed": Indicates that either there is nothing being managed in the manager with the current IP/nick, or the nick name on the agent side has been configured wrongly.

10. The eG agent on Fedora Core Linux fails to start. What do I do?

This could be a JRE compatibility issue. In such a case, do the following:

a. Download and install the JRE that is appropriate for this system from the web (or if a JRE 1.5 or higher already exists on this box, the same can be used for this purpose).

b. Once you have the new JRE installed, ensure that the "java" command available in the JRE/bin directory works.

c. Then, rename the /opt/egurkha/jre directory and copy the new JRE directory as /opt/egurkha/jre.

d. Finally, restart the eG agent.

11. I am unable to start the eG manager on Red Hat Linux. What do I do?

On Unix operating systems (like Linux), a normal user does not have privileges to run a web server on port 80 or 443. Hence, the permissions of the file "/opt/egurkha/manager/apache/bin/httpd" have to be modified as follows:

a. Login as the root user

b. **chown root /opt/egurkha/manager/apache/bin/httpd**

c. **chgrp bin /opt/egurkha/manager/apache/bin/httpd**

d. **chmod +s /opt/egurkha/manager/apache/bin/httpd**

e. Login as the 'egurkha' user and start the eG manager.

12. I am unable to start my eG manager, After enabling manager debugging, I found that a "Content is not allowed in prolog" error has been logged in opt/egurkha/manager/tomcat/logs/catalina.log file. What does it mean, and what do I do?

Such an error appears if the **tomcat-users.xml** file in the **/opt/egurkha/manager/tomcat/conf** directory is corrupted. To verify this, try opening the above-mentioned xml file using an XML browser. If an error appears while doing so, it is a clear indicator that the **tomcat-user.xml** file is corrupted. In such a case, you will have to replace the corrupted file with an uncorrupted copy. Therefore, if you have a recent backup of the eG manager, then copy the **tomcat-users.xml** file from the backup to the **/opt/egurkha/manager/tomcat/conf** directory of your current eG manager installation.

13. Suddenly, the 'eGRemote' service on one of the managed components got disabled. Do I have to uninstall the eG remote agent and reinstall it to enable the service? I don't want to do it! Is there an alternative?

Yes. An alternative is indeed available. If the 'eGRemote' service on a monitored component gets disabled, you do not have to uninstall and then re-install the eG remote agent that is remotely monitoring that component to enable the service. Instead, **you are recommended to uninstall the 'eGRemote' service on the target component**. To perform this uninstallation smoothly, the eG agent is bundled with an executable named, **ServiceInstaller.exe**. To run this executable, do the following:

- Login to the eG remote agent's host.
- Copy the **ServiceInstaller.exe** file from the **<EG_AGENT_INSTALL_DIR>\bin** directory to any

location on the monitored host.

- Login to the monitored host.
- Go to the command prompt of the host, switch to the directory that contains the **ServiceInstaller.exe**, and run the following command:

  ServiceInstaller.exe uninstall <ServiceName>

- For instance, the exact name of the **eGRemote Execution** service is 'eGRemoteExec'. To remove this service, do the following:

  ServiceInstaller.exe uninstall eGRemoteExec

- Once the service is successfully uninstalled, a message to that effect will appear.
- The **eGRemote Execution** service so removed, will then be automatically recreated on the target host the next time the eG remote agent attempts to monitor it.

Note:

- Since the **ServiceInstaller.exe** is bundled with the eG agent, you can uninstall the 'eGurkhaAgent' service also using this executable, if this service gets disabled on the agent host. The procedure for this is the same as what has been discussed above for the **eGRemote Execution** service. The only difference is that in the case of the 'eGurkhaAgent' service, you would not be required to copy the **ServiceInstaller.exe** to a different host, as both the **ServiceInstaller.exe** and the 'eGurkhaAgent' service will be available on the agent host only.
- The **ServiceInstaller.exe** is also bundled with the eG manager, and is available in the **<EG_MANAGER_INSTALL_DIR>\bin** directory. You can use this executable to uninstall the 'eGmon' service or the 'eGurkhaTomcat' service of a Windows-based eG manager, in the event that one/both the services get disabled suddenly. This way, you are saved from the trouble of uninstalling the eG manager using a tedious uninstallation procedure.

14. The agent installed on a Windows host failed to start; the following error message was logged in the event log:

```
A system error has occurred

System error 1067 has occurred

The process terminated unexpectedly
```

How do I resolve this issue?

When such an error occurs on a 32-bit agent host, do the following:

- Open the **%SYSTEMROOT%\SYSTEM32** folder on the agent host.
- Search for the **msvcr71.dll** file in the **SYSTEM32** folder.
- If it is not found, then, copy the **msvcr71.dll** file from the **<EG_AGENT_INSTALL_DIR>\bin** directory to the **%SYSTEMROOT%\SYSTEM32** folder.
- Then, start the eG agent.

When such an error occurs on a 64-bit agent host, do the following:

- Open the **%SYSTEMROOT%\SysWOW64** folder on the agent host.
- Search for the **msvcr71.dll** file in the **SysWOW64** folder.
- If it is not found, then, copy the **msvcr71.dll** file from the **<EG_AGENT_INSTALL_DIR>\bin** directory to the **%SYSTEMROOT%\SysWOW64** folder.
- Then, start the eG agent.

15. The eG agent does not start on some versions of HPUX. What do I do?

Use the *ps* command to find a working JRE in the target HPUX box. If you find one, you can use that JRE to run the eG agent. You need to rename **/opt/egurkha/jre** folder to **/opt/egurkha/jre.old** and create a **softlink** to **/opt/egurkha/jre** folder with working JRE. If there is NO JRE available, you need to find a suitable JRE in Web, install it and use the softlink mentioned above.

16. How do I check whether/not the Auto restart feature is enabled for the eG agent on Unix?

Linux

On Linux, use the following command to check whether auto restart is enabled for the agent:

service egurkha status

If the status is 'Active', it indicates that auto restart is enabled for the agent.

You can also check the existence of the file **/etc/init.d/egurkha** on the Linux agent host. If this file exists, it indicates that auto restart is enabled for the agent.

chkconfig will work if you enable the auto restart capability at specific run levels using this utility. The default status will be 'off' for all the run levels in Linux.

HPUX

On HPUX, check for the existence of the file **/sbin/init.d/egurkha**. If this file exists, it indicates that auto restart is enabled for the agent.

AIX

On AIX, run the following command to check the auto restart status:

lsitab -a | grep egurkha

You can also check for the existence of the file **/etc/rc.egurkha**. If this file exists, it indicates that auto restart is enabled for the agent.

Solaris

On Solaris, check whether the file **/etc/init.d/egurkha** exists or not. If this file exists, it indicates that auto restart is enabled for the agent.

1.1.6 Connecting to the eG Manager

1. *I want to add one more LAN card and VPN IP address to the eG Manager on Windows. Can I connect to the eG Manager from both the IP addresses?*

The eG Manager on Windows OS binds to all the IP addresses on the server on which it is installed. Hence, if you add a second IP address on the box there should be no problem accessing the eG Manager using the second IP address.

2. *How do I configure an Apache web server to serve as a reverse proxy for the eG manager?*

- Install an Apache Http server.
- Uncomment the following lines which are circled in the red box in the **httpd.conf** file of the Apache web server to load proxy related modules.

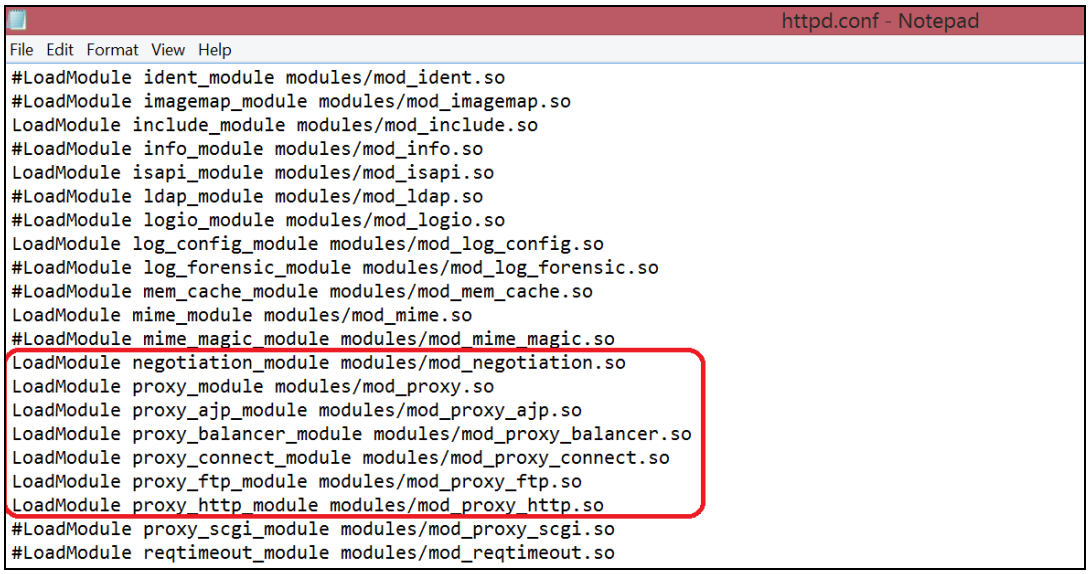

Figure 18: Loading proxy related modules

- Also uncomment the line indicated by Figure 19 to include **httpd-vhosts.conf file**.

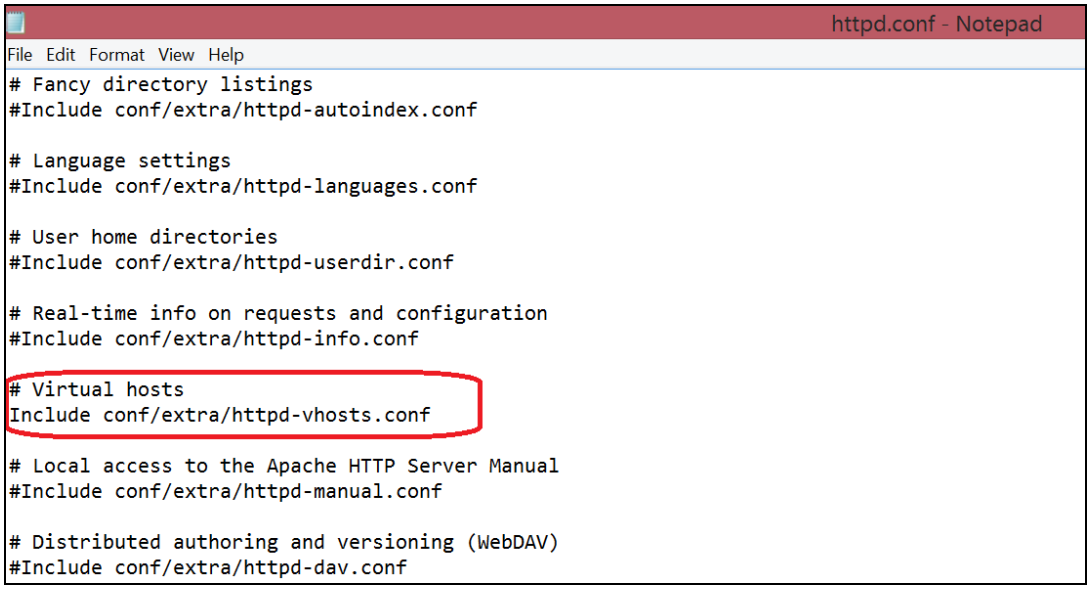

Figure 19: Including the httpd-vhosts.conf file

- Edit the **conf/extra/httpd-vhosts.conf** file to add the proxy related lines indicated by Figure 20.

```
# VirtualHost example:
# Almost any Apache directive may go into a VirtualHost container.
# The first VirtualHost section is used for all requests that do not
# match a ServerName or ServerAlias in any <VirtualHost> block.
#
<VirtualHost *:80>
    ServerAdmin webmaster@dummy-host.eginnovations.com
    DocumentRoot "C:/Program Files (x86)/Apache Software Foundation/Apache2.2/docs/
    ServerName dummy-host.eginnovations.com
    ServerAlias www.dummy-host.eginnovations.com
    ErrorLog "logs/dummy-host.eginnovations.com-error.log"
    CustomLog "logs/dummy-host.eginnovations.com-access.log" common

ProxyRequests Off
<Proxy *>
Order deny,allow
Allow from all
</Proxy>

ProxyPass / http://apac.eginnovations.com/
ProxyPassReverse / http://apac.eginnovations.com/
SetEnv force-proxy-request-1.0.1
SetEnv proxy-nokeepalive 1
</VirtualHost>

<VirtualHost *:80>
    ServerAdmin webmaster@dummy-host2.eginnovations.com
    DocumentRoot "C:/Program Files (x86)/Apache Software Foundation/Apache2.2/docs/
```

Figure 20: Editing the httpd-vhosts.conf file

- Finally, restart the Apache web server.

1.1.7 Logging into the eG Manager

1. *I have a user who has forgotten his/her password for logging in to the eG Enterprise system. Is there a way for me to find it out?*

Yes. You should first login to the eG database as the eG database user (if you have forgotten this information, look in the **<EG_INSTALL_DIR>\manager\config\eg_db.ini** file - the values for **sql.url**, **sql.user**, **sql.password** indicate the database name, user login, and user password). If you have the database password only in encrypted format, you can get the password in clear text by running the commands:

set CLASSPATH=<EG_INSTALL_DIR>\lib\eg_manager.jar;.;%classpath% (On Unix systems, this needs to be changed accordingly)

java com.eg.ShowPass <EncryptedPassword>

Once you login to the database, execute the query **SELECT USER_PASS from USER_INFO WHERE USER_ID='<UserLogin>'**. The output of the above query is the encrypted password. You can use the **"java com.eg.ShowPass <EncryptedPassword>"** command to then get the decrypted password for this user.

2. *I want all HTTP requests to the eG manager to be redirected to an HTTPS URL. How do I achieve this?*

- Enable the HTTP connector on port 80 in the **server.xml** file (in the **<CATALINA_HOME>\conf** directory) by uncommenting it, and then specify the redirect port as 443 (HTTPS port), as indicated by Figure 18.

Figure 21: Configuring the redirect port and enabling the HTTPS connector

- Enable the HTTPS connector on port 443 by uncommenting it, as indicated by Figure 18.

- Add the following security constraint in the **web.xml** file (**<EG_INSTALL_DIR>\manager\tomcat\conf** directoryy) before the *Welcome file list* (see Figure 19).

```
<!-- Require HTTPS for everything . -->
    <security-constraint>
        <web-resource-collection>
            <web-resource-name>HTTPSOnly</web-resource-name>
            <url-pattern>/*</url-pattern>
        </web-resource-collection>
        <user-data-constraint>
                    <transport-guarantee>CONFIDENTIAL</transport-
guarantee>
        </user-data-constraint>
    </security-constraint>
```

```
1255
1256
1257    <!-- Require HTTPS for everything . -->
1258        <security-constraint>
1259            <web-resource-collection>
1260                <web-resource-name>HTTPSOnly</web-resource-name>
1261                <url-pattern>/*</url-pattern>
1262            </web-resource-collection>
1263            <user-data-constraint>
1264                <transport-guarantee>CONFIDENTIAL</transport-guarantee>
1265            </user-data-constraint>
1266        </security-constraint>
1267
1268    <!-- ======================== Default Welcome File List ========================== -->
1269    <!-- When a request URI refers to a directory, the default servlet looks  -->
1270    <!-- for a "welcome file" within that directory and, if present,          -->
1271    <!-- to the corresponding resource URI for display.  If no welcome file   -->
1272    <!-- is present, the default servlet either serves a directory listing,   -->
1273    <!-- or returns a 404 status, depending on how it is configured.          -->
1274    <!--                                                                      -->
1275    <!-- If you define welcome files in your own application's web.xml        -->
1276    <!-- deployment descriptor, that list *replaces* the list configured      -->
1277    <!-- here, so be sure that you include any of the default values that     -->
1278    <!-- you wish to include.                                                 -->
1279
1280        <welcome-file-list>
1281            <welcome-file>egLogin.jsp</welcome-file>
1282            <welcome-file>default.htm</welcome-file>
1283            <welcome-file>index.html</welcome-file>
1284            <welcome-file>index.htm</welcome-file>
1285            <welcome-file>index.jsp</welcome-file>
1286        </welcome-file-list>
1287
1288    </web-app>
1289
```

Figure 22: Updating the web.xml file with a given code block

- Restart the eG manager.

1.1.8 Troubleshooting the eG Database

1. The eG database server crashed and the eG database too. I have recreated the tablespace for eG and the eG user, giving the same tablespace name and the user name which was given earlier, seeing the entries in eg_db.ini. How do I recreate the tables?

To recreate the eG tables, do the following:

- Take back up of the **<EG_INSTALL_DIR>\manager\config** directory
- Uninstall and reinstall the eG manager (Do not use the same database user and password)
- Restore the backed up **config** directory

- Change the following lines in the **eg_db.ini** present in the **<EG_INSTALL_DIR>\manager\config** directory

```
sql.user=  <type the new eG DB user name>

sql.password= <type the new eG DB password>
```

- Finally start the manager.

2. How do I truncate the transaction log file if the SQL server eG database grows too big in size?

The command that is to be used to shrink the log file is **DBCC SHRINKFILE (eg30c8_log, 100)**, where **eg30c8_log** is the logical name of the log that can be found in the **Transaction Log** page of the **Database Properties** dialog box under the column name **File Name** (see Figure 23), and **100** is the desired size (in MB) to which the database should be shrunk.

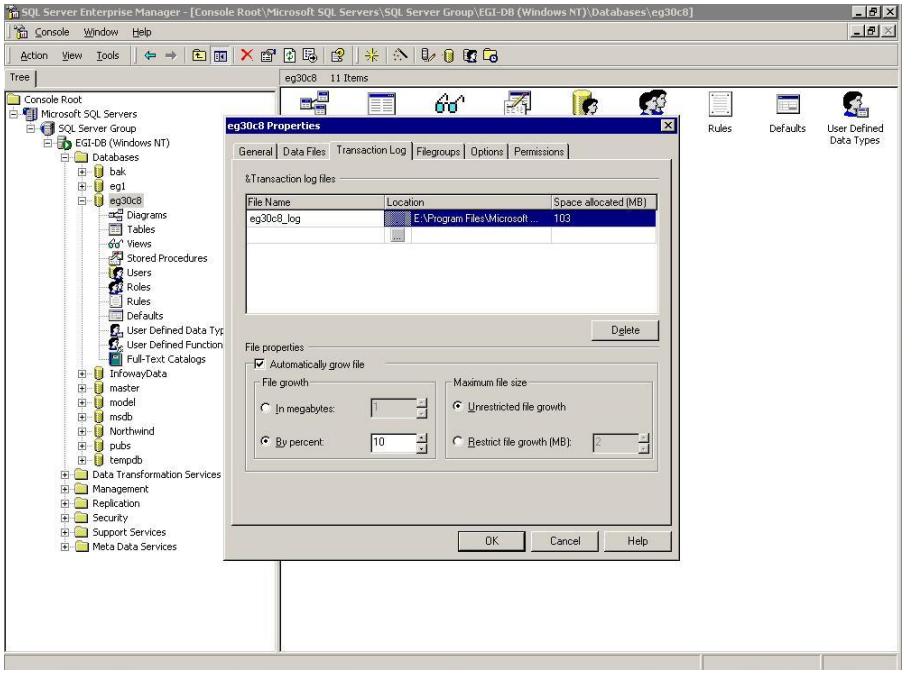

Figure 23: The Transaction log tab page

3. The eG manager has been installed on the same Windows host as its SQL database. Though the eG manager is available, it is unable to perform functions such as trend computations, threshold computations, email alerting, etc. Also, the MS SQL database has been found to consume a lot of memory. Why does this happen and what needs to be done to improve the situation?

Try restricting the maximum memory allocated to the SQL server using the procedure depicted by Figure 24. Then, stop the manager, restart the SQL server, and finally, start the manager.

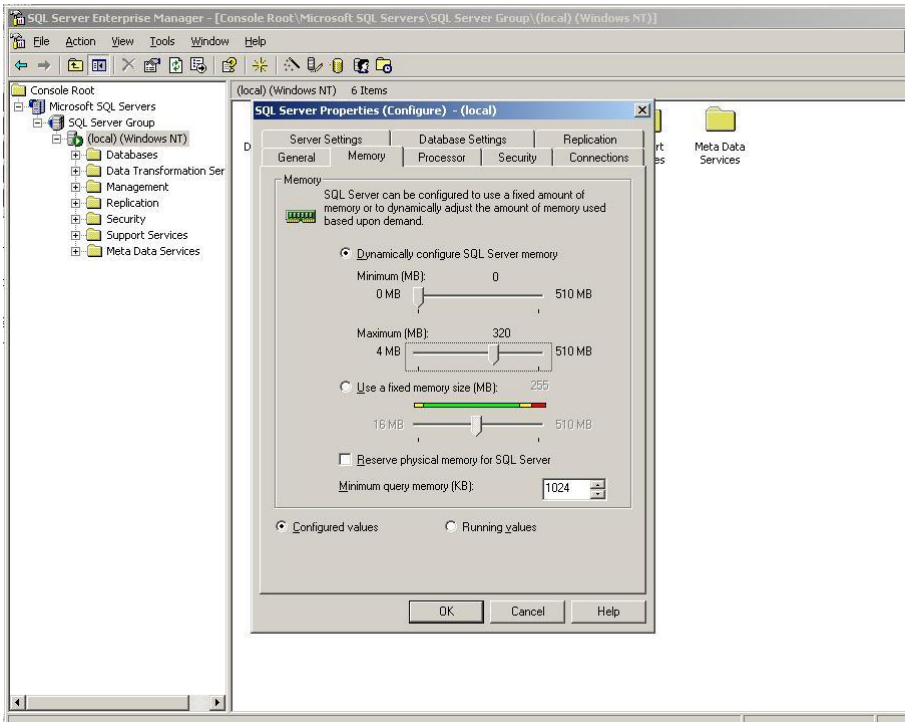

Figure 24: Downsizing the MS SQL server

4. How do I change the recovery type of an MS SQL database from 'Full' to 'Simple?

To achieve this, do the following:

- Open the SQL Server Enterprise Manager and expand the **Databases** node in the tree-structure in the left pane of the manager. Then, select the eG database from within, right-click on it and select **Properties** from its shortcut menu.
- From the **Properties** dialog box that appears (see Figure 25), select the **Options** tab.
- Next, select the **Simple** option from the **Recovery Model** list box as depicted by Figure 25.
- Finally, click the **OK** button in Figure 25.

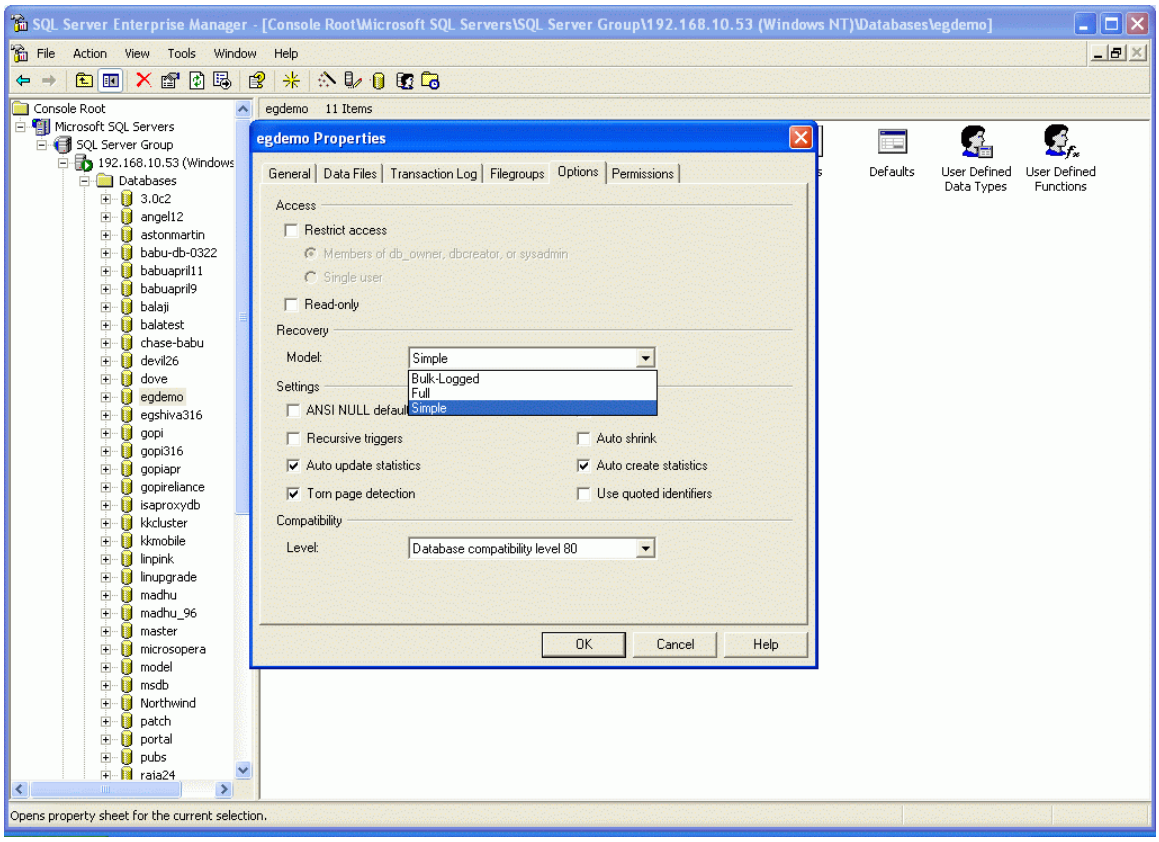

Figure 25: Select Simple as the Recovery Model

Alternatively, open a query analyzer, and execute the following query:

ALTER DATABASE <dbname> SET RECOVERY SIMPLE

Note that only a user with *sa* rights can execute the aforesaid query.

5. *I need to delete metrics pertaining to specific tests from my eG database. Is such a selective cleanup operation possible? If so, how do I do it?*

Yes. You can selectively cleanup data from the eG database. To achieve this, do the following:

- Edit the **eg_db.ini** file in the **<EG_INSTALL_DIR>\manager\config** directory.
- Go to the **[TABLE_DELETE_PERIODS]** section in the file.
- To this section, add the tests that need to be cleaned up and the cleanup days for each test in the following format: *<TestName>=<No_of_days>*. For example, if the measures pertaining to the *DiskActivityTest* need to be removed from the eG database every 30 days, then the entry should be as follows: *DiskActivityTest=30*. Similarly, multiple tests and their corresponding cleanup days can be provided in this section, one below the other.
- Finally, save the **eg_db.ini** file.

6. ***My eG database, which is an MS SQL database, consists of large volumes of data. Using eG Reporter, I tried to generate a zone report for the last 2 months across all components in the zone. But, the report failed to generate. Since there were no connectivity issues between the eG manager and eG database, I went ahead and checked the error_log (in the <EG_INSTALL_DIR>\manager\logs directory) to see if any errors were reported. I then came across the following exception:***

The query has been canceled because the estimated cost of this query (16) exceeds the configured threshold of 10. Contact the system administrator.

What does this exception signify and what do I do?

Query cost refers to the estimated elapsed time, in seconds, required to complete a query on a specific hardware configuration. In environments where an MS SQL server is used as the backend, sometimes, database administrators may set a **query governor cost limit**; this is an upper limit on the time period in which a query to the database can run. The query governor disallows execution of any query that has an estimated cost exceeding the set value.

In your case, the error message logged in the error_log clearly indicates that the estimated cost of the zone report query, which is 16, exceeds the **query governor cost limit** of 10 that has been set in the MS SQL database server. Owing to this violation, the database could not execute the query, thereby resulting in the failure of the report. To ensure that such anomalies do not recur, you will either have to increase the **query governor cost limit** for the MS SQL server, or turn the limit off. To do either, follow the steps given below:

- Login to the MS SQL server as *a* database administrator and run the **SQL Enterprise Manager** or the **MS SQL Server Management Studio** (depending upon the version of the MS SQL server in use). Figure 26 then appears.

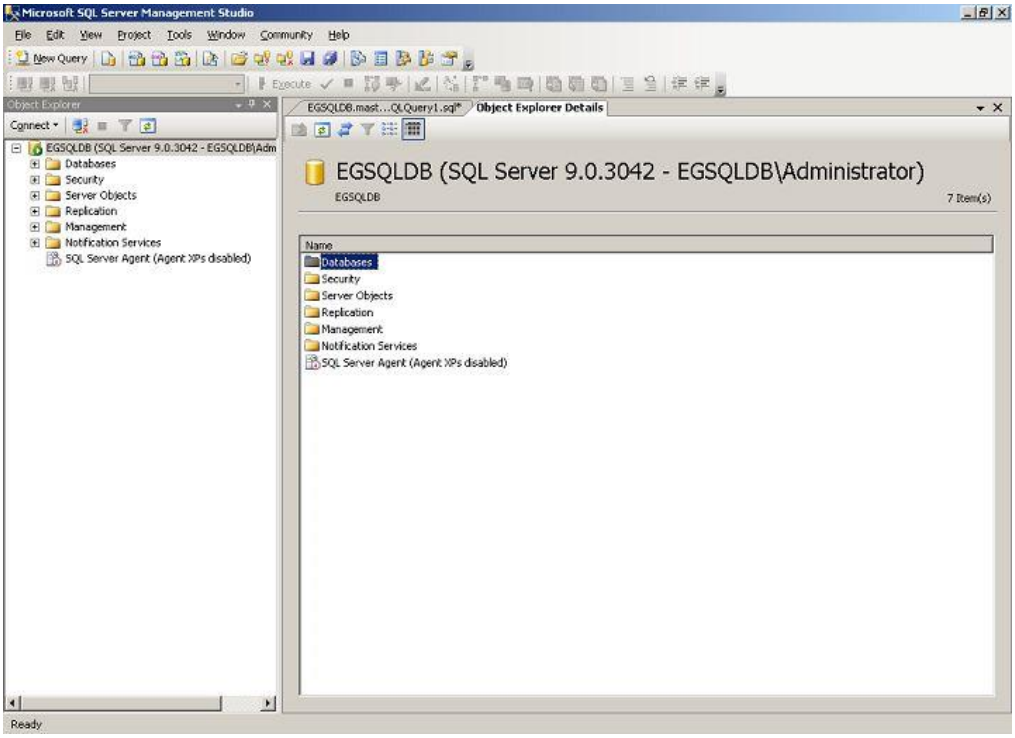

Figure 26: The MS SQL Server Management Studio

- From the tree-structure in the left panel of Figure 26, select the topmost node; this node represents the current MS SQL database server. Right-click on this node, and select **Properties** (see Figure 27).

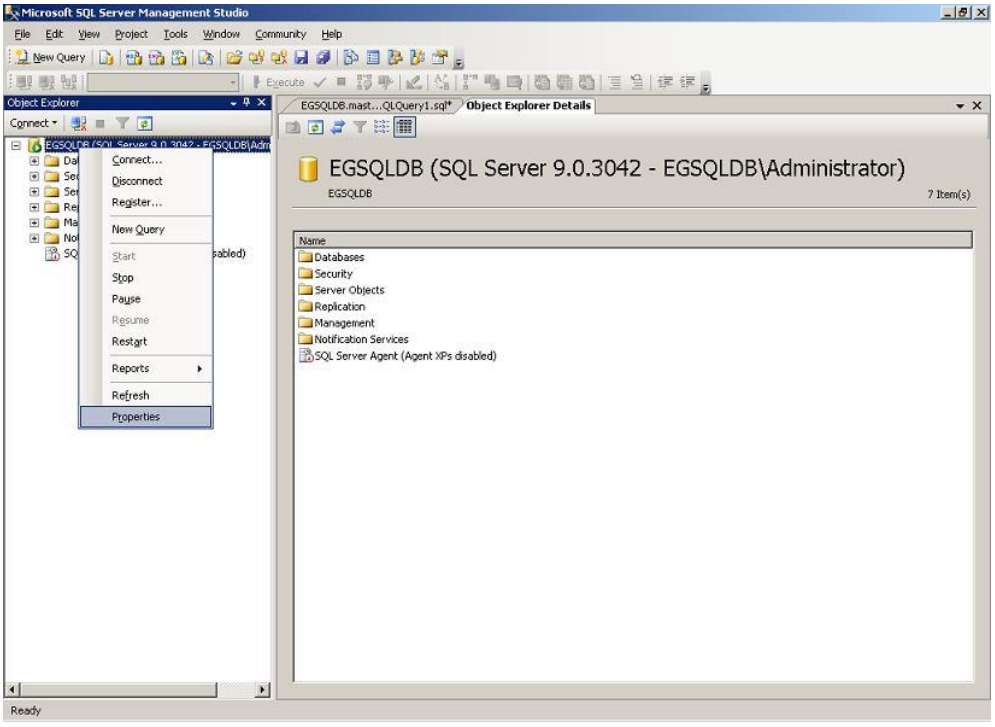

Figure 27: Selecting the MS SQL Server's Properties

- Figure 28 then appears. From the **Select a page** list in the left panel of Figure 28, pick **Connections**. The **Connections** section will then appear in the right panel. If the **Use query governor to prevent long-running queries** check box is selected and a limit is set below, you can increase the limit using the spin box. Alternatively, you can even turn off the **query governor** so that all long-running queries execute on the MS SQL server without any restrictions. To ensure this, you can either deselect the **Use query governor to prevent long-running queries** check box, or simply set the value 0 in the spin box below the check box.

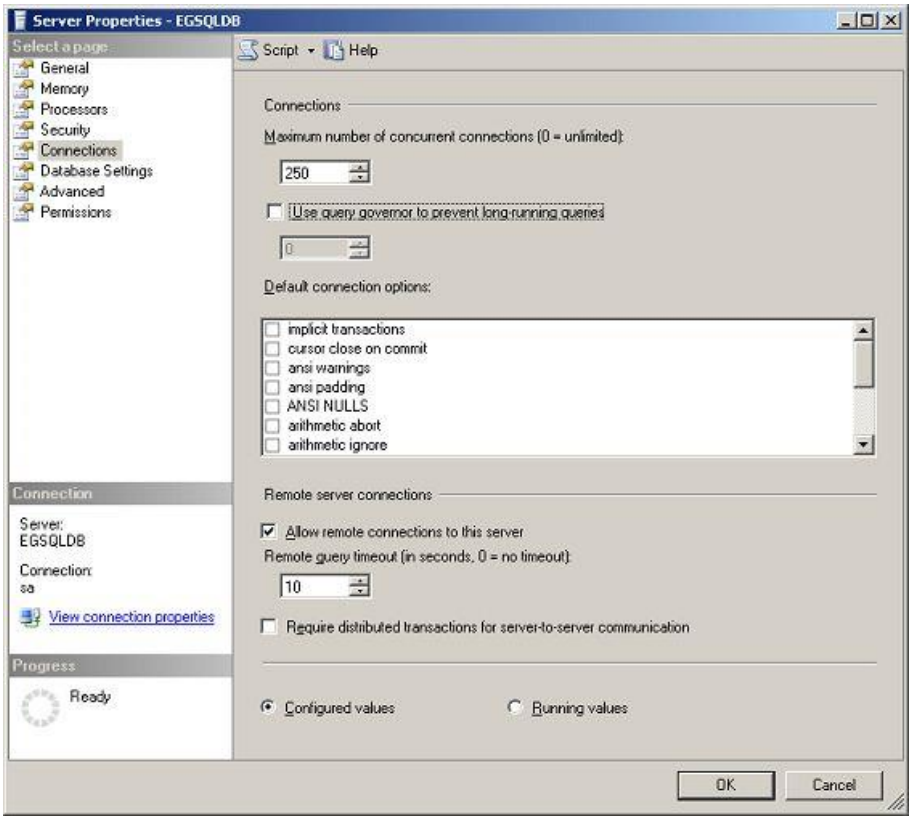

Figure 28: Disabling the query governor

- Finally, click the **OK** button in Figure 28.

7. *I have been experiencing connection issues between the eG manager and database for quiet sometime now. When I checked the tomcat debug file for errors, I found the following exception logged therein:*

```
java.sql.SQLException: OALL8 is in an inconsistent state
```

What does this mean and what do I do?

This error message indicates a version mismatch between the Oracle JDBC driver that is bundled into the eG manager, and the JDBC driver used by the Oracle database server, which serves as the eG backend in your environment. To resolve this issue, do the following:

- Determine the version of the Oracle database server that is being used to host the eG database in your environment;
- From the URL, http://www.oracle.com/technology/software/tech/java/sqlj_jdbc/index.html, download the latest release of the JDBC driver that corresponds to the 'major' version of the Oracle database server hosting the eG database;
- Rename the driver as **classes12.zip** (in case of a Windows manager) or **classes111.zip** (in case of a Unix manager)
- Take a backup of the JDBC drive bundled into the eG manager, from the **<EG_INSTALL_DIR>\lib** folder on the manager host.
- Copy the renamed zip file to the **<EG_INSTALL_DIR>\lib** folder (in case of a Windows manager), or the **/opt/egurkha/lib** folder (in case of a Unix manager).
- Restart the manager.

8. *My eG manager is operating on a Windows server with a non-English locale setting. Though the manager installed properly and started smoothly, after configuring components for monitoring, I found that the manager is not able to insert measure records into the eG database. When I checked the error_log, I found the following error:*

```
05/07/2013 00:36:10 INFO DbInfo:insertToDbTable java.sql.sqlexception:
ora-01722: ungültige zahl

Query is INSERT into OraProcessTest_TREND
(TRGT_HOST,PORT_NO,SITE_NAME,INFO,MSMT_HOST,MSMT_TIME,PERIOD,NUM_PROC_
MIN,NUM_PROC_MAX,NUM_PROC_STCNT,CPU_UTIL_MIN,CPU_UTIL_MAX,CPU_UTIL_STC
NT,MEM_UTIL_MIN,MEM_UTIL_MAX,MEM_UTIL_STCNT) values
('OD_184_???????????','1521','NULL','multi+Ora_Dbw','AIX_19',to_date('
04/07/2013 19:00:00','DD/MM/YYYY HH24:MIS'),'H','0.0000','0.0000',
'0:12:0:0:0','0.0000','0.0000','12:0:0:0:0','0.0000','0.0000','12:0:0:
0:0')
```

Why does this happen and what do I do?

This issue occurs because the eG manager runs on an OS with a non-English locale setting. In this case, when the non-English eG manager attempts to send measures it receives to the eG database for storage, it converts all dots in the data into 'separators'. This in turn causes record insertion failures in the eG database. To avoid this, do the following:

- Edit the **debugon.bat** file in the **<EG_INSTALL_DIR>\lib** directory on the eG manager host.
- Append the following entry to the file:

-Duser.country=US -Duser.language=en

- Save the file and restart the manager.

9. How do I rename the eG database?

The steps to be followed in this regard, are as follows:

- Open the **<EG_HOME>\manager\config\eg_db.ini** file

- Look for **sql.url** in the **[DB_PROPERTIES]** section. A sample **sql.url** specification is provided below:

sql.url=jdbc:jtds:sqlserver://192.168.10.100:1433/joe_8.127_07102015

In this, **192.168.10.100:1433** is the IP address and port number of the database server and **joe_8.127_07102015** is the eG database name.

- You can change the eG database name in the **sql.url** specification and save the file. For instance, if you want to change the name of the database in the sample above to **joe_8.127_08102015**, then change the **sql.url** specification as shown below:

  sql.url=jdbc:jtds:sqlserver://192.168.10.100:1433/joe_8.127_08102015

- Finally, save the file.

1.2 Administering the eG Enterprise Suite

1.2.1 Host / Nick Names

1. ***If the Host/Nick name of a particular component is changed, will the eG Enterprise system store subsequent measures using the new host/nick name or the old one?***

The eG Enterprise system will use the new nick name to store the newer data in the database.

2. ***In the event of a change in the host/nick name of a component, can past reports be generated for that component?***

No. You will not be able to generate reports with the older nick, because the identity of that box has changed to the new one.

3. ***I need to monitor a server that has multiple IP addresses. I have been monitoring this server successfully for some months using a single IP address, but I have now added extra web sites that use a different IP address. Obviously, we cannot use the currently installed agent as that has a different nickname and IP address. Also, we do not have the multiple IP address per agent capability within the manager. Under these circumstances, do I need to install a second eG agent on the system but with a different nickname and IP address? If not, are there any other recommendations that you can make?(Managing a server with multiple IP addresses)***

You do not have to install a second eG agent on the same system. As long as the "ipconfig /all" command on Windows or the "ifconfig -a" command on Unix shows the second IP address that you wish to manage, the same agent will work. You will need to add a new web server with the new IP address and give it a different name from the eG admin interface. Please check if this new nick name that you used has been added on the agent side in the **eg_nick.ini** file found in the **<EG_INSTALL_DIR>\agent\config** directory. If this is not done, then add the nick name using the following syntax:

```
[NICKNAME]

Nick=nickname1:nickname2:nickname3
```

Note that the separator used is colon. Restart the agent after adding the nick.

When you do this, the existing agent will start to monitor the new IP address/server. However, in this case, an additional agent license will be consumed for the second IP address. If you had the agent per system capability, this would have allowed you to add the second web server IP address/nick name in such a way that it would not take up an additional agent license.

1.2.2 Configuring Users

1. Can I restrict a user's admin access to specific components/segments/services?

The restriction granularity allowed under roles for admin options is until the menu item only. The granularity level of giving access to some specific components or services or segments under a specific menu item via the admin interface is not possible.

2. I chose to auto-associate all components of the type 'Active Directory' with a user, by selecting the 'Auto associate all components of a type' flag in ELEMENT ASSOCIATION FOR THE USER page. Later, I added all the managed Active Directory servers in my environment to a segment, and then, modified the user profile I created previously to associate this segment with the user. Once I mapped the segment to the user, all the Active Directory servers that were originally assigned to the user vanished! This is because, all these servers are now part of the segment I associated with the user. Sometime later, I disassociated this segment from the user. But since the 'Auto associate' flag was still turned on for the Active Directory servers, I thought that the individual Active Directory servers will be automatically re-associated with the user. However, this did not happen! Why, and what do I do?

When such changes are made, it takes a maximum of 1 day to update the UI with the changes. Until then, the automatic reassociation of the AD servers will not occur. If you want the changes to be effected immediately, you will have to manually reassociate each of the Active Directory servers with the user.

1.2.3 Maintenance Policies

1. How to use the maintenance policy for time slots that start on a day and end on the next day?

- Create a quick maintenance policy, say "Workhrs", and set it to execute "Daily" at two specific time periods. For eg., "0.00 to 09.30" and "16.30 to 23.59".

- Next, associate the policy with a **Host** or **Component** or **Test**. If you associate the policy to a component, then only those alerts related to that component will be suppressed during the configured maintenance period. If you associate the policy with a host, then only the host-level alarms related to the chosen hosts will be suppressed. If you associate the policy with a test, then only the alarms raised by that test will be suppressed during the configured maintenance period.

2. Will the monitoring period under maintenance be reflected in the summary reports if a maintenance policy is configured?

Yes. During the maintenance period, the system is considered to be in normal/good state.

1.2.4 Mail Settings

1. The email alert has the same subject string always. Can the component name and type to which an alert relates be specified in the mail alert?

Administrators also have the option to have the mail subject specify the specific component name and type for which the alert relates to. In order to do so, edit the file **eg_services.ini** in the **<EG_INSTALL_DIR>\manager\config** and change the variable **MailSubjectFormatToUse** in the **MISC_ARGS** section to **DefinedFormat**. The other variables below allow the mail alert subject to be rther
customized:

- **MailSubjectStart** - This variable defines the starting string for the email alert (default value is **eG Alert ->**)
- **MailSubjectFormat** - This can be one of **CompName** (in which case only the component name is shown in mail alert), or **CompName:CompType** (in which case both the component name and type will be shown in the alert.
- **MailSubjectLength** - This value defines the number of components that will be included in the email subject.

2. I encountered an issue with the eG manager's ability to send out emails. An investigation of the error log revealed that emails could not be sent due to policy reasons. What does this mean and what do I do?

This indicates that the user has set up a policy that is prohibiting the mail from being sent. This can be any one of the following rules:

- Anti-spam mail filter rules
- Domain based mail filter rules
- IP range filter rules etc
- There could be security filter/authentication for accessing this mail server.

The client will have to scrutinize and figure out, which filter is blocking the acceptance of mails.

3. Is there a ceiling on the Mail Subject Length specification?

The eG Enterprise suite does not prescribe any maximum length check for the mail subject. The display of the Mail Subject (text area) is limited to 4 rows and 30 columns in the Mail Configuration page of the eG administrative interface, but the complete text area can be utilized for the Mail Subject display. The above said is true for the manual configuration of mail subject.

If you do not type anything in the Mail Subject, by default, the subject will be "Complete list of alarms from the eG Enterprise system" or "New list of alarms from the eG Enterprise system", depending upon the **TYPE OF NOTIFICATION** set during user creation.

4. The eG manager is unable to send email alerts. What could be the issue and how do I correct it?)

This could occur if the mail server listens on a non-default port - i.e., a port other than 25. In such a case, do the following:

- Open the **<EG_HOME>\manager\config\eg_services.ini** file in the edit mode.
- Append the following entry to the **[MISC_ARGS]** section of the file: *MailPort=<the port at which the mail server listens in your environment>*. For example, if the mail server port in your environment is 6000, then the entry should be, *MailPort=6000*.
- Finally, save the file.

1.2.5 Agentless Vs. Agent-based Monitoring

1. *Compare the bandwidth usage of the agent-based and agentless monitoring approaches*

The bandwidth used in agent-based monitoring is about 0.2 Kbps (the exact value depends on the frequency of the monitoring and the applications being monitored). When monitoring in an agentless manner, the traffic to/from the monitored server is 50Kbps. This is to be expected because in the agent-based approach, all the processing is done on the managed server itself and only final results are transmitted out. In the agentless approach, the unprocessed output of all the commands is passed to the remote agent for processing. Note that 50Kbps is not a lot of traffic if the monitoring is done within a LAN. Most LANs have 100Mbps capacity and they are switched as well – which means 100Mbps is per link and is not shared.

The results indicate that agentless monitoring across WANs may not be advisable as the traffic is high. The caveat with these results is that the traffic may vary depending on which server/application is being managed and also depending on various other statistics.

2. *Does agentless monitoring support remote control actions?*

No. Agentless monitoring does not support remote control actions and detailed diagnosis.

3. *I installed a remote agent on a Windows box with domain administrator privileges. But this remote agent is unable to connect to and monitor another system in the same network. What could be the problem and how do I resolve it?*

Remote agents use the **eGRemote** command to connect to and collect information from a system in the domain. For this command to work, the target system (i.e., the system to be monitored by the remote agent) should consist of the default share named **ADMIN $**. If this share does not exist on a target, then the remote agent will not be able to connect to that system. To check whether **ADMIN$** pre-exists, do the following:

1. Login to the target system and go to the command prompt.
2. Type the command **net share**; this command will list all the default and user-configured shares on the system
3. If **ADMIN$** is not listed, it is a definite indicator that the system does not consist of the **ADMIN$** share.

The way forward is to manually configure the **ADMIN$** share on the target system. To do so, issue the command **net share ADMIN$** from the command prompt of the system. This will create the **ADMIN$** share. For more information on **net share**, check out the URL: http://www.microsoft.com/resources/documentation/windows/xp/all/proddocs/en-us/net_share.mspx?mfr=true

1.2.6 Configuring Tests

1. *I am changing the test period for one test (e.g., OracleSqlNet Test). Yet, I find that this changes the test period for other tests as well (e.g., OracleSessions Test, OracleLocks Test). How can I avoid this?*

The configuration file **eg_testparam.ini** in the **<EG_DIR>\manager\config** directory has a mapping between tests. The eG admin interface consults this file to determine which tests must have the same configurations. By default, to avoid having to configure the user name and password for each of the tests, the **eg_testparam.ini** has entries that indicate that the configurations for the different Oracle tests should be maintained to be the same. For example, the entry in **eg_testparam.ini**: **OracleSqlNetTest= OracleLocksTest,OracleSessionsTest**, indicates that when the OracleSqlNet Test is configured for a server, the same configuration is to be applied to OracleLocks Test and OracleSessions Test as well. In some cases, the administrator may prefer to run different tests at different frequencies. For example, OraSqlNetTest may need to run every 15 mins, but OracleSessions Test ssmust run every 5 mins. In such situations, the administrator must modify the **eg_testparam.ini** entries to meet their specific needs.

2. *Some tests seem to be consuming too much CPU while collecting certain measures. How do we keep this under check?*

Most of the tests executed by the eG agents are not resource intensive. However, some command implementations can take more time and resources. Moreover, the volume of traffic and users on the server also have a bearing on resource consumption. To decrease the load on a server, consider disabling some of the tests, which according to you, return measures that add little value. To disable a test, open the **ENABLE/DISABLE TESTS** page by selecting the **Enable/Disable** option from the **Tests** menu of the **Agents** tile, and select the server-type for which a test is to be disabled. When the list of tests is displayed in the **ENABLED TESTS** list box, select the tests to be disabled, and click the **<** button in the page. Finally, click on the **Update** button to save the changes.

1.2.7 Configuring Thresholds

1. We are getting the "too many connections" alert for almost each server in our environment, even if there are around 400-500 connections. For our type of setup, these number of connections are normal. How do I fine-tune this threshold setting?

Threshold values have to be tuned according to the target environment's load, requirement and standard practices. The default threshold type for "Tcp Test:Current Connections" measure is relative. This type allows eG to learn the norms in the environment and raise alerts accordingly. However, if the load is very variant in your environment, it is advisable to change this to absolute and set up the maximum limit. For example, if 400-500 connections are normal in your environment, you may want to setup the maximum value to a value beyond which you would want to be alerted. Alternately if you do not want any alerts on this, you can set the threshold policy to none.

2. Can I switch off alarms for specific descriptors of a test? If so, how?

This can be done by selecting the **Specific** option from the **Thresholds** menu of the **Alerts** tile. On reaching the "Specific Thresholds" screen, select the component. Now click on the "Refine" button at the bottom. Then, click the "Modify" button against the descriptor for which you want to switch off the alerts. Change the thresholds as needed in this, so that alerts are not raised for that descriptor, and then click on "Update". This will take some time to reflect in the UI.

3. I have some network switches that normally use up 100 % bandwidth. This is not a problem, but we would like to reduce the number of alerts produced. Is there a way by which this can be achieved?

Yes. Change the threshold settings of this measure to *1.10*sqc*, which will offset the threshold settings to 110%. The new settings will be effective from the next threshold computation cycle.

1.2.8 Configuring Trouble Ticket - Mail (TTMail) Integration

1. Can eG integrate with HPOV service desk, which is essentially used for trouble ticketing purposes?

Yes. eG can be integrated with external trouble ticketing (TT) systems such as the HPOV service desk. This integration involves configuring the eG manager to forward to the TT system, the email alerts it generates upon problem detection and resolution in the monitored environment. However, the onus of configuring the TT system to receive and process the email alerts sent by the eG manager lies with the customer. **Please note that Trouble Ticket Integration is a license-controlled feature**.

2. While configuring TTMail integration, I noticed that the help desk system that was set to receive mails through the TTMail interface, actually receives a large number of alerts of all severities i.e., critical, major, and minor. This happens despite the fact that the help desk system was configured to receive major and critical alerts only, and not minor alerts. What happened and why?

All the alerts generated in the eG Enterprise system will be sent via the TTMail, regardless of priorities / user assignments. In other words, the eG Enterprise system will not filter based on priorities or user assignments while transmitting emails via the TTMail interface. The filtering based on priority and user ids will have to be done at the trouble ticketing system level based on the tag values.

1.2.9 Configuring Database Settings

1. How do I check whether my eG manager is double-byte enabled or not?

To check whether your eG manager is double-byte enabled or not, do the following:

- Connect to the eG manager via a web browser using the URL: **http://<eG_Manager_IP>:<eG_Manager_Port>** or **https://<eG_Manager_IP>:<eG_Manager_Port>**
- Login to the eG manager as *admin* with password *admin*.
- In the eG administrative interface, follow the menu sequence: *Configure -> Data Management -> Database Properties*
- In the page that then comes up, check the status of the **Double Byte Enabled** parameter. If this is **Yes**, it indicates that the eG manager is double-byte enabled. If it is **No**, then it indicates that the eG manager is not double-byte enabled.

1.3 Monitoring Using the eG Enterprise Suite

1.3.1 Monitoring Mail Servers

1. *I have provided a user account for the Mail test, but it is not working. How do I verify if the account is valid?*

Do the following to check if the account provided for the Mail Test to RETRIEVE mails via POP3 is a valid account:

```
<Command to enter>telnet <serverIP> 110

<server response:> +OK DPOP Version number suppressed.

<Command to enter>USER john
<server response:> +OK john nice to hear from you - password required
<Command to enter>PASS <Your password>
<server response:> +OK john has 0 mail messages
<Command to enter>LIST
<server response:> +OK 0 (0)
<Command to enter>quit
<server response:> +OK bye john
```

If you want to check if you are able to send mails, do the following:

```
<Command to enter> telnet <SMTP Server IP> 25
<server response:> 220 eginnovations.com DSMTP ESMTP Mail Server
<Command to enter> HELO localhost
<server response:> 250 eginnovations.com. Hello localhost
(61.11.72.169)
<Command to enter> MAIL FROM: victor@eginnovations.com
<server response:> 250 Command MAIL OK
<Command to enter>RCPT TO: john@eginnovations.com
<server response:> 250 Command RCPT OK
<Command to enter>DATA
<server response:> 354 Command DATA Start mail input; end with
<CRLF>.<CRLF>
<Command to enter>Subject: This is a test message
This message is a test message to check the eG mail test.
.. <End with "."">
<server response:> 250 Command DATA Processed mail data Ok
<Command to enter>quit
<server response:> 221 Command QUIT eginnovations.com Service closing
transmission channel to local host
```

Note: Ensure that the exact values of the parameters of the Mail Test are provided as arguments of the script above. There are instances where "john" can access Pop3 mail but "john@eginnovations.com" may not have rights to check mail.

2. The Mail Service test and the OWA Connectivity test are not working on Exchange 2010 servers. What do I do?

In this case, try the following:

- The Exchange 2010 Monitoring Management Pack can run synthetic transactions to help you measure the performance of monitored objects in your Exchange organization. The Exchange 2010 Monitoring Management Pack uses the Test-OwaConnectivity, Test-ActiveSyncConnectivity, and Test-WebServicesConnectivity cmdlets to test Microsoft Office Outlook Web App, Exchange ActiveSync, and Exchange Web Services connectivity from Client Access servers to Mailbox servers. These cmdlets require that a test mailbox be created in each Active Directory site that you want to test. For more information about synthetic transactions, see Monitoring by Using Synthetic Transactions in the System Center Operations Manager 2007 R2 documentation.

Caution:

If you don't create a test mailbox on one or more Mailbox servers, the Management Pack will return the following warning: "The test mailbox was not initialized. Run new-TestCasConnectivityUser.ps1 to ensure that the test mailbox is created."

Perform the following steps to create a test mailbox for Outlook Web App, Exchange ActiveSync, and Exchange Web Services connectivity monitoring.

In this procedure you create test mailboxes for Outlook Web App, Exchange ActiveSync, and Exchange Web Services to monitor connectivity by using PowerShell to run the New-TestCasConnectivityUser.ps1 script.

- Open the Exchange Management Shell.
- In the Shell, change directory to the C:\ Program Files\Microsoft\Exchange Server\V14\Scripts folder by running the following command:
- Set-Location C:\Program Files\Microsoft\Exchange Server\V14\Scripts
- Run the test-user script using the following command:

New-TestCasConnectivityUser.ps1

Follow the on-screen installation instructions in the Shell to create the test mailbox. You'll be prompted to enter a temporary secure password for creating test users. You'll also be prompted to specify the Mailbox server where you want the test user created.

Repeat this process on an Exchange 2010 Mailbox server in each Active Directory site that you want to test.

For more details please see this link http://technet.microsoft.com/en-us/library/ee758052(v=exchg.140).aspx

3. SNMP tests are not reporting metrics for the Lotus Domino mail server 9.x in my environment. What do I do?

This could happen if SNMP is not properly enabled for the Lotus Domino mail server. Please check the Domino documentation and configure SNMP correctly. Once done, please issue the following command:

snmpwalk –O nfq <iP> <community> .1.3.6.1.4.1.334.72

If this command provides results, then SNMP is enabled correctly for Domino and our tests should work

1.3.2 Monitoring Web Servers

1. What do we do if the Web Transactions Test does not give measures for an IIS web server?

- Try restarting the WWW service.
- If measures are still not reported, check the status of the **WebTransFilter**. If it is **BAD**, then try reloading the filter and then restart the WWW service.
- For detailed procedures refer to the *Configuring and Monitoring IIS web servers* .

2. When does eG consider that a HTTP connection has aborted?

A HTTP connection is considered as aborted, when:

- A HTTP request comes in and the web server tries to satisfy the request, but does not find the connection to complete the full response. For example, assume that a http request comes in, asking for a chunk of information from the web server. Say that the web server tries to respond to this request with 4 writes into this socket. Even if the first 3 writes were completed successfully and the final one could not be completed due to connection loss, this will be considered as an aborted connection at the http level.
- A HTTP connection is opened and is closed without any response being sent back into the connection.

3. My web server on Windows is up and running. But, the HTTP test reports web server availability as 0. Why did this happen and what do I do?

First, open the **error_log** file in the **<EG_AGENT_INSTALL_DIR>\agent\logs** directory and look for the following error:

```
java.io.IOException: Authentication failure

at
sun.net.www.protocol.http.HttpURLConnection.getInputStream(HttpURLCon

nection.java:1296)

at
java.net.HttpURLConnection.getResponseCode(HttpURLConnection.java:379
```

```
)
at HttpHelper.run(HttpHelper.java:304)
```

If you find this 'Authentication failure' in the **error_log**, then, proceed to do the following to resolve the issue:

- Open the Windows **Control Panel**.
- Follow the sequence of options detailed below:

  System and Security -> Administrative Tools -> Local Security Policy -> Local Policies -> Security Options

- Then, click on the **Network security option: LAN Manager authentication level 8** option. Change the setting to be: **Send LM & NTLM - use NTLMv2 session security if negotiated**.
- Save the settings, and then restart the eG agent.

The **Http test** will work now.

If the **Local Security Policy** option is not available in *Control Panel -> System and Security -> Administrative Tools*, follow the steps below to resolve the 'Authentication failure' captured by the **error_log**:

- Run the registry editor.
- Find the node:

  HKEY_LOCAL_MACHINE / System / CurrentControlSet / Control / Lsa

- Click on the **Lsa** node and create a new entry named **LmCompatibilityLevel** of type **REG_ DWORD** and with the value **1**.

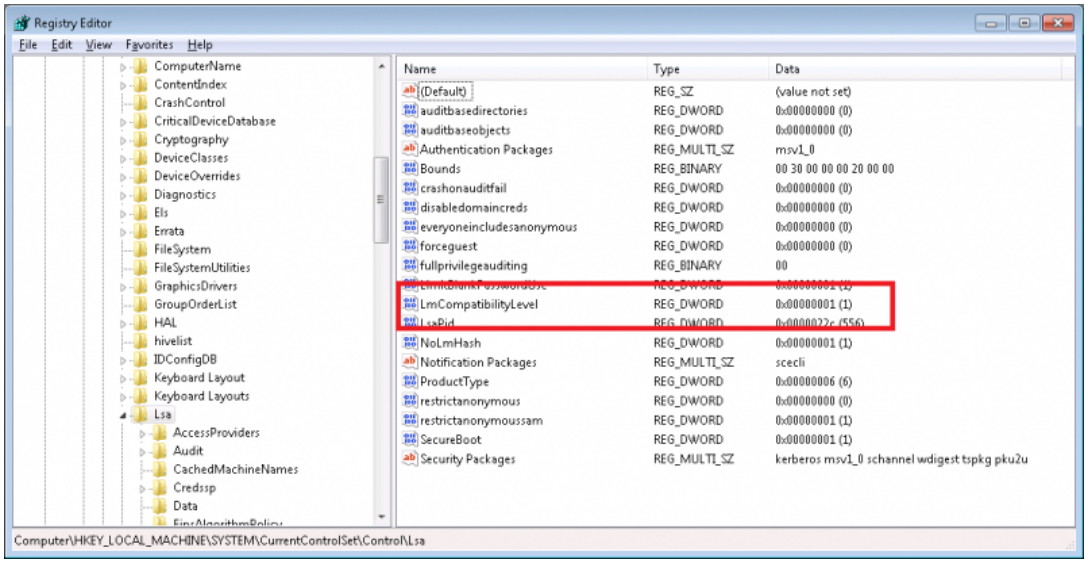

Figure 29: Adding a new registry entry to resolve the Authentication failure

- Finally, restart the eG agent

This issue can occur on Win 2008 / 2012 / 7/ 8.

4. How does eG verify web pages?

The eG agent verifies the web pages by making HTTP connection to the URL supplied in the Http test. If the agent receives a response code of 200, then it goes for content validation if specified; otherwise, it does not snoop the page contents.

5. How does eG check the availability of a page that requires a web-based login?

For checking the availability of a web page which needs web-based login you should be using HttpPostTest. HttpPostTest can give you the desired results if the login is in a web page, where you fill the form and submit.

However in cases where a separate login window appears, the Http Post Test will not be able to perform a content check. This is because the Http Post Test can verify the content only after the page is downloaded successfully. Therefore, you might have to use the eG Client Emulator module for simulating such logins and verifying the contents.

To put it in a nutshell, there are three basic ways for logging in via a http site:

- where the login information is inside the Html page - as a form
- where HTTP authentication is used (i.e., not tied to the OS)
- when windows authentication is used for logging in and getting a page.

eG's Http Post Test supports cases the two cases, but does not support the final case. This case can be achieved via the client emulator module.

6. I am monitoring a Web Server on Unix. I find that my Web Site and Web Transactions test are not reporting metrics. Why does this happen and what do I do?

If the Web Site and Web Transactions tests fail for a web server that is running on a Unix platform, then, check whether the eG web adapter has been properly configured on Unix. If the web adapter has been configured properly, then check whether the web server being monitored is a 32-bit or a 64-bit application. Then, check whether the eG agent installed on the web server is a 32-bit or a 64-bit agent.

If the bit-rates of the eG agent and the web server do not match, the Web Site test and the Web Transactions test will fail. This is because, a 32-bit web server on Unix can only be monitored by a 32-bit eG agent; likewise, a 64-bit web server on Unix, can only be monitored by a 64-bit eG agent. In the event of a mismatch therefore, uninstall the eG agent that pre-exists and install an eG agent with the same bit-rate as the web server.

7. The HTTP Post Test reports that my web site is unavailable, when in fact, that web site is up and running and very much accessible. Why did this happen and what do I do?

This can happen if the **HTTP Post** test is not configured correctly. Check the **URL** configuration of the test. For this test to work, you need to configure the **URL** parameter with the post page URL and not the login page URL. Also, the credentials for accessing the **URL** should be passed as a query string in the **URL** configuration itself, and not as values for the **USER** and **PASSWORD** parameters of the **HTTP Post** test.

To enable you to understand better, let us take the example of the **demo.eginnovations.com** web site. Let us figure out the HTTP Post URL of this web site and the authentication parameters that are to be passed as part of the URL query string.

- For this, first, right-click on the login page of the **demo.eginnovations.com** and choose the **View Source** (see Figure 24).

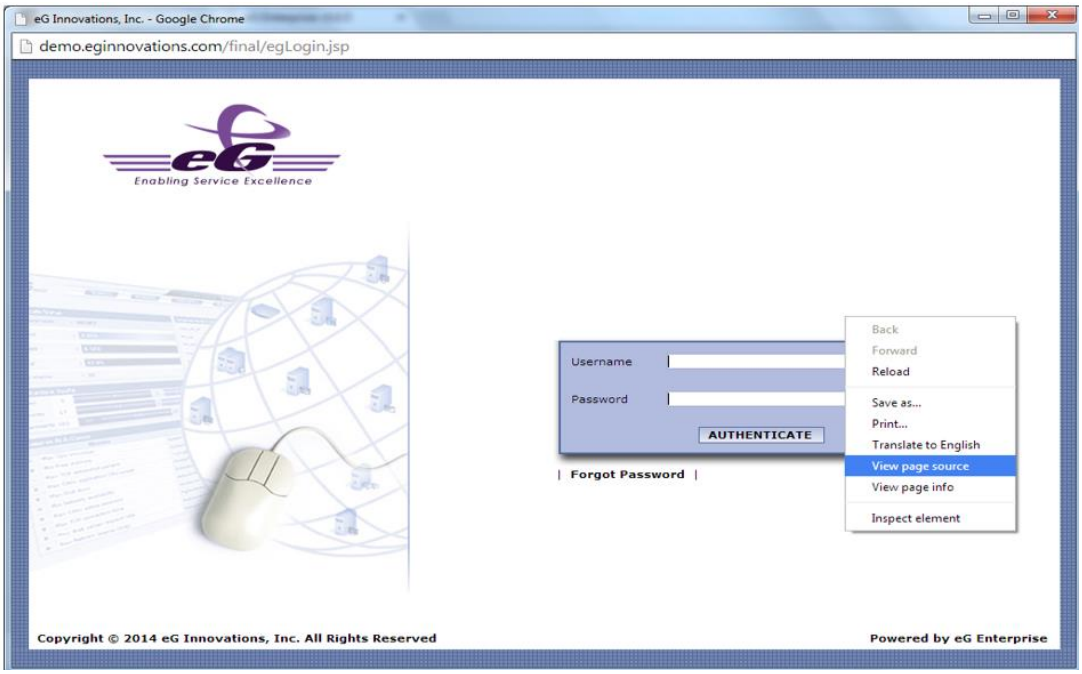

Figure 30: Choosing to View Source of the login page of the demo.eginnovations.com site

- Figure 25 will then appear, where the underlying source code will be visible. Search the code for the text string, *post,* as indicated by Figure 25 below.

Figure 31: Searching for a line of code with POST in it

- A line of code with the string *POST* in it will be found (see Figure 25). Take a close look at this line. As per the line of code, the *POST* URL is contained within a variable named *url.* So, now search for the variable *url* in the source code. For that, type *var url* in the **Search** text box. This will lead you to the line indicated by Figure 26.

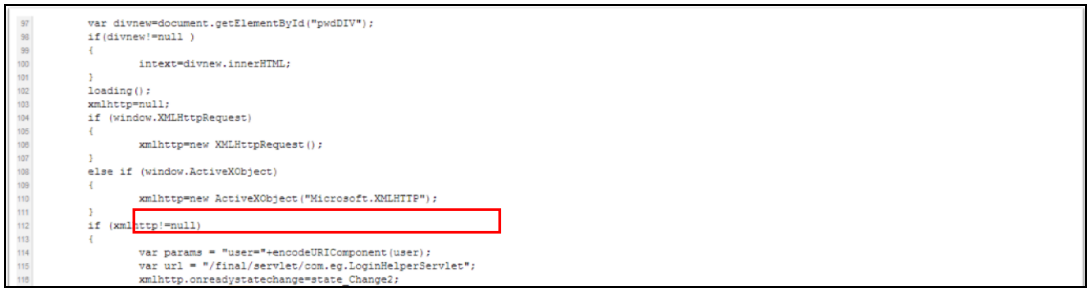

Figure 32: Identifying the HTTP POST URL in the source code

- This is the line where the variable *url* is declared. As is evident from Figure 26, the *url* has been initialized to */final/servlet/com.eg.LoginHelperServlet*. From this, you can conclude that the HTTP POST URL of the **demo.eginnovations.com** site is: *http://demo.eginnovations.com/ final/servlet/com.eg.LoginHelperServlet*

- Now that we have figured out the HTTP POST URL of the login page, let us proceed to figure out what parameters need to be passed to the URL to enable the test to login to the **demo.eginnovations.com** site via the login page. For this, run another search on the source code of the login page, but this time, search for the string *login_text*.

- This string appears twice in the source code, as indicated by Figure 27 below.

Figure 33: Searching for the text string *login_text* in the source code

- This string has been used in the source code to indicate that the text string that follows it is a field label used in the login page. For instance, the text that follows the first occurrence of *login_text* is **Username** – this is the label of the **Username** field in the login page. Likewise, the second occurrence of *login_text* is followed by **Password**, which is the label of the **Password** field in the login page. If you look closely at the **Username** label definition in the code, you will find that it includes pointers to the internal parameter that handles the **Username** provided at runtime. In the same way, the **Password** definition also points to the internal parameter that handles the **Password** input by the user. Both these parameters are indicated by Figure 28 below.

Figure 34: Identifying the names of the parameters to be passed to the HTTP POST URL

- As you can see, *uname* is the parameter for the **Username** field and *upass* is the parameter for the **Password** field.

- Now that we also know the parameters required for logging into the login page, let us proceed to build the complete HTTP POST URL. This URL consists of the following parts:

- HTTP POST URL for the login page;

- The parameter that corresponds to the **Username** field along with a valid username
- The parameter that corresponds to the **Password** field and a valid password

A '?' should separate the POST URL of the login page from the login parameters. A '&' should separate the *uname* parameter and the *upass* parameter. The complete URL should therefore be of this format:

http://demo.eginnovations.com/ final/servlet/com.eg.LoginHelperServlet?uname=<Name_of_user_registered_with_eG>&upass=<Password_of_registered_user>

A sample URL has been provided below with the parts explained:

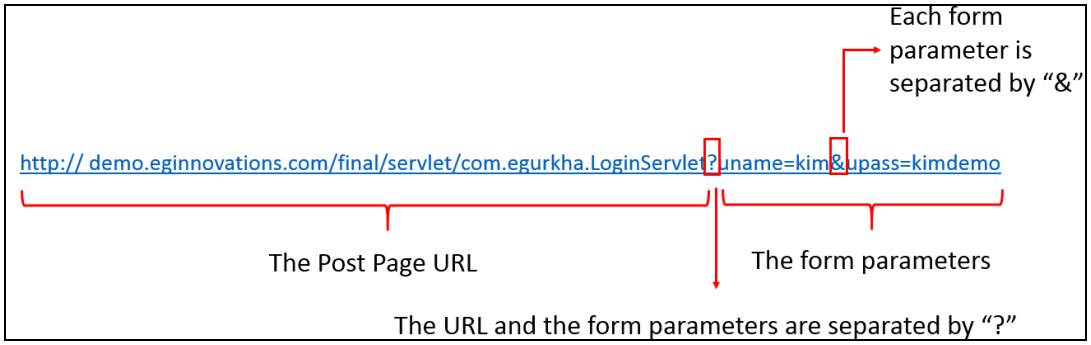

Figure 35: A sample URL with parts explained

- Now, proceed to configure the **URL** parameter of the **HTTP POST** test with this URL (see Figure 30).

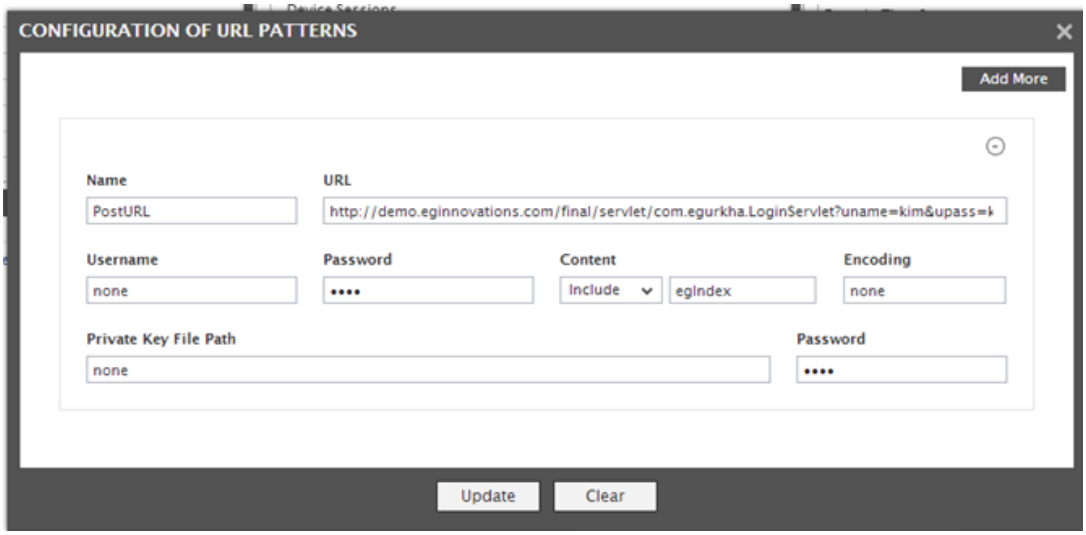

Figure 36: Configuring the URL parameter of the HTTP POST test

Alternatively, you can use tools like **Fiddler** or **HTTP Analyzer** to identify the HTTP POST URL and the login parameters used. Let us see how **Fiddler** can be used to determine the HTTP POST URL for the **demo.eginnovations.com** site.

- For this, first launch the **Fiddler** console. In the **Filters** tab page, select the **demo.eginnovations.com** option from the **Show only if URL contains** drop-down, so that **Fiddler** captures only those requests that go to the **demo.eginnovations.com** site.

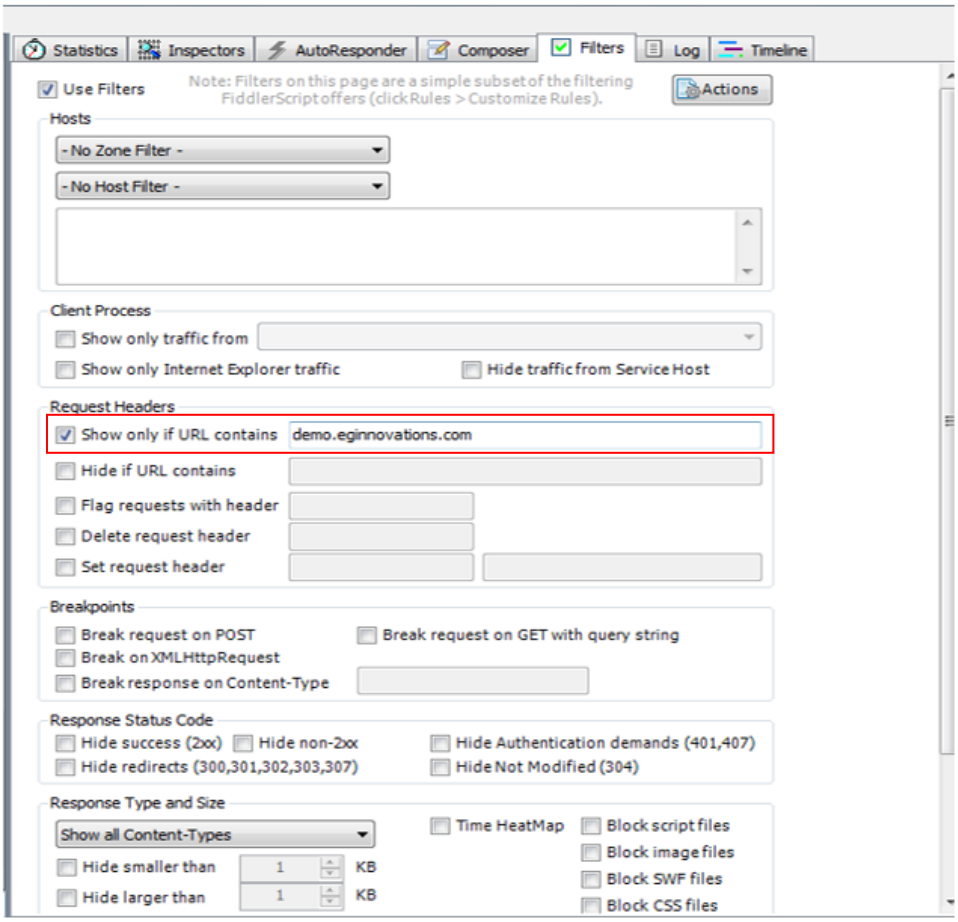

Figure 37: Configuring Fiddler to track requests to the demo.eginnovations.com site alone

- Then, connect to the **demo.eginnovations.com** site via a browser, and login to the eG management console by passing valid credentials at the login page.
- Then, switch to the **Fiddler** console to check whether this transaction has been captured. Figure 32 depicts the Fiddler console. The left pane of the console lists the web requests tracked. The request highlighted in the left pane of Figure 32 is the request to the demo.eginnovations.com site.

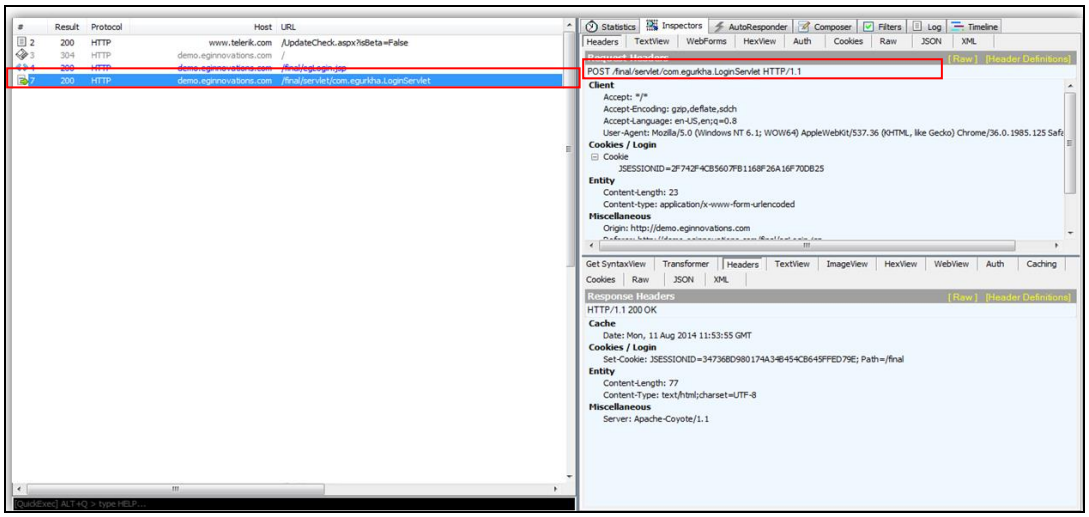

Figure 38: The request to the demo.eginnovations.com site tracked by Fiddler console

- Clicking on this request reveals the **Request Header** in the **Headers** tab page of the right pane. From the **Request Header**, it is clear that the selected request is a POST request. This implies that the URL of this request, which is displayed in the **URL** column of the left pane, is the HTTP POST URL. From Figure 32, it is clear that the HTTP POST URL is */final/servlet/com.eg.LoginHelperServlet*. From this, you can conclude that the HTTP POST URL of the **demo.eginnovations.com** site is: *http://demo.eginnovations.com/final/servlet/com.eg.LoginHelperServlet*

- Next, click on the **WebForms** tab page in the right pane (see Figure 33). This will list the names of the login parameters used in the login page and the values passed to these parameters at runtime. From the **Name** column of Figure 33, it is evident that *uname* and *upass* are the parameters.

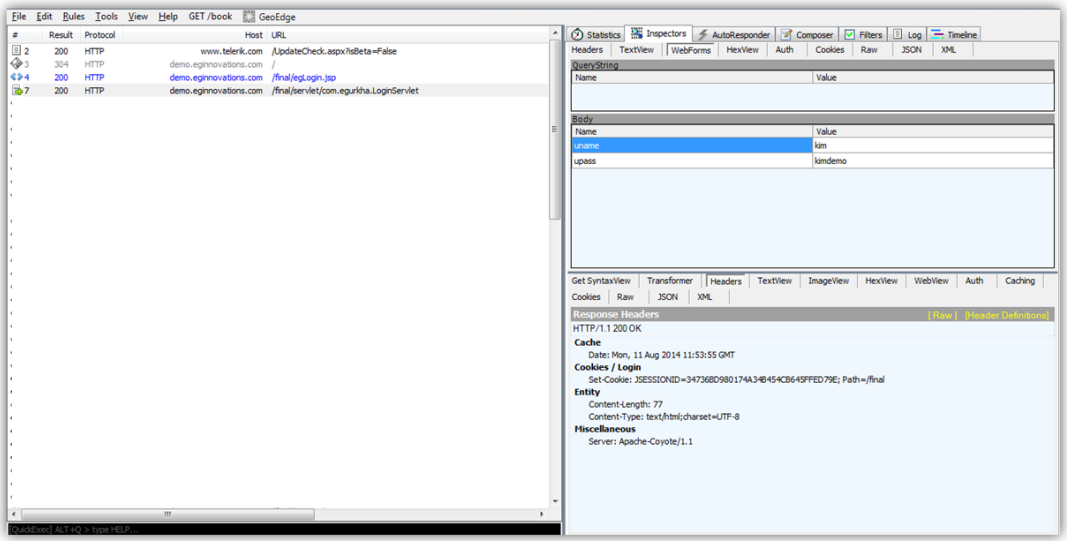

Figure 39: Identifying the login parameters

- Now, to view the content of the response to the HTTP POST request, click on the **TextView** tab page, in the series of tab pages that appear below the **WebParts** tab page

in the right pane of Figure 34.

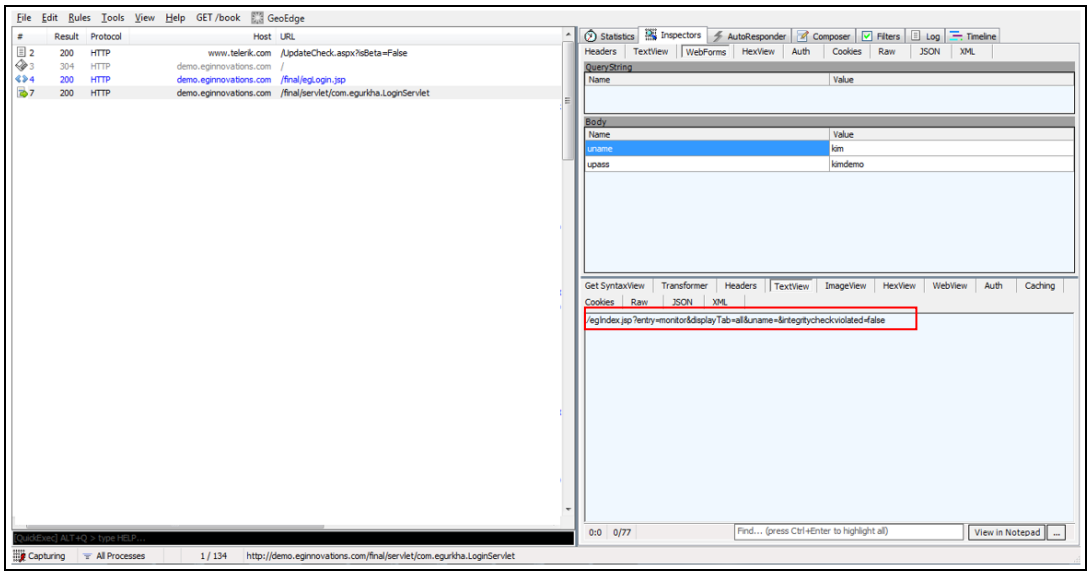

Figure 40: Viewing the content of the HTTP POST response

- You can configure the **HTTP POST** test with a part of this response content to validate the response. To do so, when configuring the **HTTP POST** test, select **Include** from the **Content** drop-down, and type *egindex* in the text box adjacent to that drop-down, as shown by Figure 35.

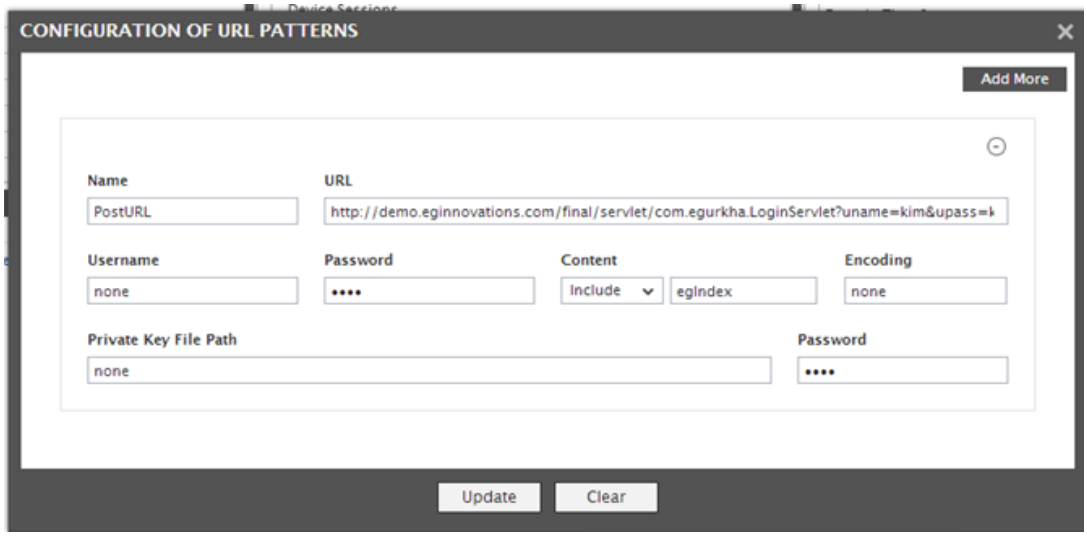

Figure 41: Validating the response content

- The test will then look for the text string 'egindex' in the HTTP response to the POST request, and if found, will report that the response content is valid.

8. The HTTP test repeatedly fails if the eG external agent is on Windows 2008/2012/7/8. What do I do?

In this case, make the following changes on the external agent host:

- Open Control Panel -> System and Security -> Administrative Tools -> Local Security Policy -> Local Policies -> Security Options -> Network security: LAN Manager authentication level
- Change the setting to be: "Send LM & NTLM - use NTLMv2 session security if negotiated".
- In case, *Local Security Policy* is not available, then do the following:
- Run registry editor (type regedit in the command line or in Run... prompt).
- Find the node:

HKEY_LOCAL_MACHINE / System / CurrentControlSet / Control / Lsa

- Click on **Lsa** node and create there a New DWORD (32-bit) Value, *LmCompatibilityLevel,* with the value 1.

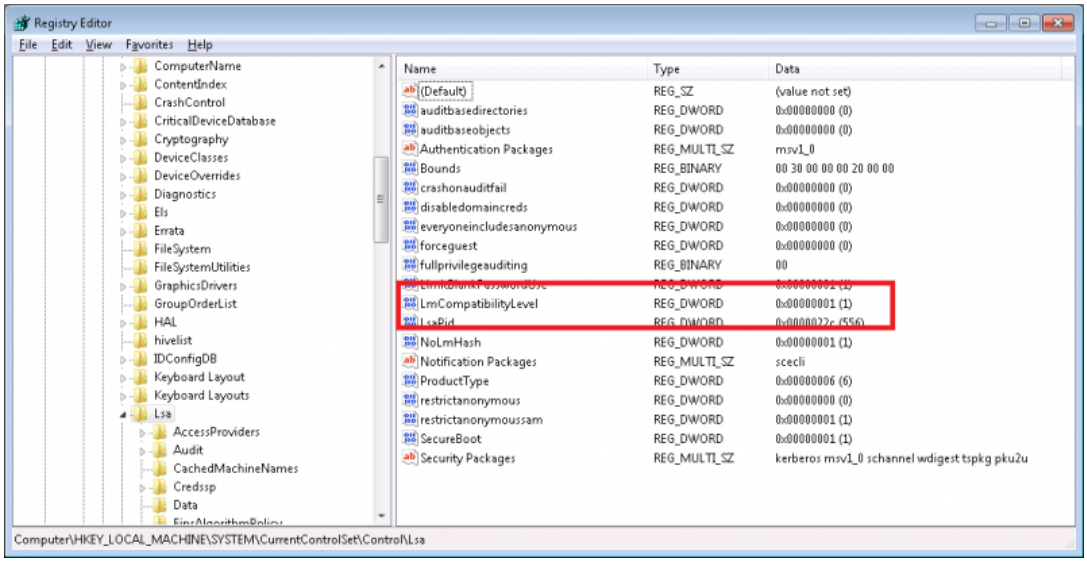

Figure 42: The new entry added to regedit and its value

9. The HTTP test to an HTTPS web site repeatedly fails, logging the following message in the error_log:

javax.net.ssl.SSLHandshakeException: java.security.cert.CertificateException: Certificates does not conform to algorithm constraints

Why does this happen and what do I do?

MD2 was widely recognized as insecure and thus disabled in Java in version JDK 6u17, as well as JDK 7. However, some servers are still sending the old MD2 signed certificate during the SSL handshake. The aforesaid error occurs when the eG external agent host is such a server.

To resolve this issue, you need to disable the *MD2* check in Java. For this, do the following:

- Edit the **java.security** file in the **<EG_AGENT_INSTALL_DIR>\JRE\lib\security** folder (on Windows; on Unix, this will be the **/opt/egurkha/JRE/lib/security** folder).
- Look for the following line in the file:

```
jdk.certpath.disabledAlgorithms=MD2, RSA keySize < 1024
```

- Comment this line, by prefixing it with a '#', as shown below:

```
#jdk.certpath.disabledAlgorithms=MD2, RSA keySize < 1024
```

- Save the file.

10. The 'Errors' measure of the 'IIS Web Server' test is reporting a non-zero value. Can I know what these errors are and where they come from?

The value of the *Errors* measure is derived from the *Not Found Errors/sec* counter reported by the *Web service* performance object. This counter reports the rate of errors due to requests that couldn't be satisfied by the server because the requested document could not be found. These are generally reported as an HTTP 404 error code to the client. The *Errors* measure of the *IIS Web Server* test reports the value of this counter in percentage. This percentage is computed using the following formula:

*(Not Found Errors/sec *100.0) / Total Method Requests/sec*

1.3.3 Monitoring Microsoft RDS Servers

1. Can eG monitor whether RDP login is working on a remote Microsoft RDS Server or not?

eG cannot monitor "RDP logins" on a Terminal Server currently. It does however, support a test by name "Terminal Authentication Test" for RDS server, which emulates a user logging into the server. This is an external Test. Using this test, eG can check if any user has login issues while connecting to the server.

1.3.4 Monitoring Citrix XenApp Servers

1. The Citrix Farm Users test of the Citrix ZDC server does not report any measures.

If the Citrix Farm Users test should report properly, then ensure that the farmname parameter (of the Citrix Users Test associated with a Citrix XenApp server) contains the same name that was specified against the **HOST/NICK NAME** field while managing the Citrix ZDC using the eG Enterprise system.

2. The following error appears while executing the Citrix Applications Test. Why does this happen and what do I do?

Figure 43: Error message that appears while executing the CitrixApplications Test

This could be because the App SDK pack is missing in this particular Citrix install. A temporary solution would be to disable the Citrix Applications Test, and run the other tests. Alternatively, if the same version of Citrix is available in another system, then the missing dll can be copied from that Citrix installation to the problem Citrix installation.

3. Why does the Citrix user latency reported by the Citrix Users test remain constant for a prolonged period of time?

In Citrix XenApp, the reported ICA session latency does not change until the client stimulates some activity by typing or moving the mouse. Enabling ICA keep-alives does not affect the metrics because ICA keep-alives are server-stimulated (the latency only tracks client initiated actions).

Citrix XenApp has a feature, called Active Latency, that is like a keep-alive. This can be enabled by a server-side registry entry that defines the period for the latency check. To enable Active Latency on a Citrix XenApp server, do the following:

- Navigate to the following registry key: **HKEY_LOCAL_MACHINE\SYSTEM\CURRENTCONTROLSET\CONTROL\TERMINALSERVER\WDS\ICAWD**
- Create a **REG_DWORD** entry called **ActiveLatencyPeriodInSeconds** with the required latency period (for example, 60).
- Once this value is set, the reported latency value will update periodically.

4. How does the User Profiles test compute the size of a user's profile on Citrix XenApp?

The size of a user's profile is expressed as the sum of the size of the following sub-folders that are available in the **C:\Users<UserName>** directory of that user, on XenApp:

AppData, Application Data, Cookies, Desktop, Favorites, My Documents, Recent, NetHood, PrintHood, SentTo, Start Menu, Templates, WINDOWS, NTUSER.DAT, and ntuser.dat.LOG

5. When computing and reporting the size of a User Profile on a Citrix Server, which are the files that are excluded by default by the User Profile test?

This list will vary from one Citrix XenApp server to another. To know the list of files that are excluded, do the following:

If the Citrix XenApp server is being monitored in an agent-based manner:

- Login to the eG agent host.
- Go to the command prompt.
- Issue the following command at the prompt:

  cscript <EG_INSTALL_DIR>\bin\UserProfile.vbs

  This command will list the names of the excluded files.

If the Citrix XenApp server is being monitored in an agentless manner:

- Login to the Citrix XenApp host.
- Go to the command prompt.
- Switch to the **C:\Windows** directory
- Issue the following command at the prompt:

  cscript UserProfile.vbs

  This command will list the names of the excluded files.

1.3.5 Monitoring WebLogic Servers

1. The Weblogic Tests turn blue though the egurkha.war is deployed properly. The measures are visible when the jsp is hit from the URL.

This occurrence could be attributed to a wrong value provided for the Version parameter of the Weblogic server tests. The value for this parameter is the version number of the Weblogic server.

2. How to check whether the egurkha.war has been properly deployed on the Weblogic Server?

The following URL can be used to check whether the war file has been deployed properly:

http://<weblogic_server_ip>:<WebLogic_Server_Port>/egurkha/Hello.jsp

The output of this jsp will be, "Hello World". If the war file has not been deployed, then an error message will appear instead.

3. How to check whether the WebLogic tests are working through URL?

You can hit the following URL to verify whether/not the WebLogic tests have been configured properly and are reporting metrics:

http://<WebLogic_IP>:<WebLogic_Port>/egurkha/<Internal_Test_Name>.jsp?name=egurkha&name1=monitoring&user=<WebLogic_User_Name>&password=<Encrypted_WebLogic_Password>&host=<WebLogic_IP>&port=<WebLogic_Port>&server=<WebLogic_Server_Name>&debug=true

If the WebLogic server is SSL-enabled, then use the following URL instead:

https://<WebLogic_IP>:<WebLogic_Port>/egurkha/<Internal_Test_Name>.jsp?name=egurkha&name1=monitoring&user=<WebLogic_User_Name>&password=<WebLogic_Password>&host=<WebLogic_IP>&port=<WebLogic_Port>&server=<WebLogic_Server_Name>&debug=true

Here, specify:

WebLogic_IP: The IP address of the host on which the monitored WebLogic server is running

WebLogic_Port: The port number at which the monitored WebLogic server listens

Internal_Test_Name: The internal name of the test, the configuration of which is being verified

WebLogic_User_Name: The value of the **USER** parameter of the test

WebLogic_Password: The value of the **PASSWORD** parameter of the test in encrypted format. To know the encrypted password, do the following:

- Open the **eg_agents.ini** file in the **<EG_INSTALL_DIR>\agents\config** directory (on Windows; on Unix, this will be the **/opt/egurkha/agents/config** folder.).
- Search for the internal name of the WebLogic test. For instance, if the URL is used to verify the configuration of the **WebLogic Servers** test (with internal name, **WLServerTest**), then search for **WLServerTest** in the eg_agents.ini file.
- Once a match is found, look for the **–password** parameter of the test. This parameter name will be followed by its encrypted value. Make a note of this value and use it in the URL.

WebLogic_Server_Name: The value of the **SERVERNAME** parameter of the test

Examples:

To test the configuration of the **WebLogic** test, the URL will be:

http://192.168.1.220:7001/egurkha/WebLogic.jsp?name=egurkha&name1=monitoring&user=weblogic&password=35:37:37:72:25:33:15:14&host=192.168.1.220&port=7001&server=AdminSever&debug=true

To test the configuration of the **WebLogic Threads Test**, the URL will be:

http://192.168.1.220:7001/egurkha/WLThreadTest.jsp?name=egurkha&name1=monitoring&user=weblogic&password=35:37:37:72:25:33:15:14&host=192.168.1.220&port=7001&server=AdminSever&debug=true

To test the configuration of the **WebLogic Rockit JVM Test**, the URL will be:

http://192.168.1.220:7001/egurkha/WLJVMRockitTest.jsp?name=egurkha&name1=monitoring&user=weblogic&password=35:37:37:72:25:33:15:14&host=192.168.1.220&port=7001&server=AdminSever&debug=true

To test the configuration of the **WebLogic Work Managers Test**, the URL will be:

http://192.168.1.220:7001/egurkha/WLWorkManagerTest.jsp?name=egurkha&name1=monitoring&user=weblogic&password=35:37:37:72:25:33:15:14&host=192.168.1.220&port=7001&server=AdminSever&debug=true

c.

To test the configuration of the **WebLogic Thread Pools Test**, the URL will be:

http://192.168.1.220:7001/egurkha/WLThreadPoolTest.jsp?name=egurkha&name1=monitoring&user=weblogic&password=35:37:37:72:25:33:15:14&host=192.168.1.220&port=7001&server=AdminSever&debug=true

To test the configuration of the **WebLogic JTA Test**, the URL will be:

http://192.168.1.220:7001/egurkha/WLJTATest.jsp?name=egurkha&name1=monitoring&user=weblogic&password=35:37:37:72:25:33:15:14&host=192.168.1.220&port=7001&server=AdminSever&debug=true

To test the configuration of the **WebLogic Servlets Test**, the URL will be:

http://192.168.1.220:7001/egurkha/WLServletTest.jsp?name=egurkha&name1=monitoring&user=weblogic&password=35:37:37:72:25:33:15:14&host=192.168.1.220&port=7001&server=AdminSever&debug=true

To test the configuration of the **WebLogic Web Applications Test**, the URL will be:

http://192.168.1.220:7001/egurkha/WLWebAppsTest.jsp?name=egurkha&name1=monitoring&user=weblogic&password=35:37:37:72:25:33:15:14&host=192.168.1.220&port=7001&server=AdminSever&debug=true

To test the configuration of the **WebLogic Queues Test**, the URL will be:

http://192.168.1.220:7001/egurkha/WLJMSQueueTest.jsp?name=egurkha&name1=monitoring&user=weblogic&password=35:37:37:72:25:33:15:14&host=192.168.1.220&port=7001&server=AdminSever&debug=true

To test the configuration of the **WebLogic Topics Test**, the URL will be:

http://192.168.1.220:7001/egurkha/WLJMSTopicTest.jsp?name=egurkha&name1=monitoring&user=weblogic&password=35:37:37:72:25:33:15:14&host=192.168.1.220&port=7001&server=AdminSever&debug=true

To test the configuration of the **WebLogic JMS Test**, the URL will be:

http://192.168.1.220:7001/egurkha/WLJMSTest.jsp?name=egurkha&name1=monitoring&user=weblogic&password=35:37:37:72:25:33:15:14&host=192.168.1.220&port=7001&server=AdminSever&debug=true

To test the configuration of the **WebLogic Clusters Test**, the URL will be:

http://192.168.1.220:7001/egurkha/WLClusterTest.jsp?name=egurkha&name1=monitoring&user=weblogic&password=35:37:37:72:25:33:15:14&host=192.168.1.220&port=7001&server=AdminSever&debug=true

To test the configuration of the **WebLogic Connectors Test**, the URL will be:

http://192.168.1.220:7001/egurkha/WLConnectorTest.jsp?name=egurkha&name1=monitoring&user=weblogic&password=35:37:37:72:25:33:15:14&host=192.168.1.220&port=7001&server=AdminSever&debug=true

To test the configuration of the **WebLogic JDBC Test**, the URL will be:

http://192.168.1.220:7001/egurkha/WLJDBCTest.jsp?name=egurkha&name1=monitoring&user=weblogic&password=35:37:37:72:25:33:15:14&host=192.168.1.220&port=7001&server=AdminSever&debug=true

To test the configuration of the **WebLogic EJB Locks Test**, the URL will be:

http://192.168.1.220:7001/egurkha/WLEJBLockTest.jsp?name=egurkha&name1=monitoring&user=weblogic&password=35:37:37:72:25:33:15:14&host=192.168.1.220&port=7001&server=AdminSever&debug=true

To test the configuration of the **WebLogic EJB Cache Test**, the URL will be:

http://192.168.1.220:7001/egurkha/WLEJBCacheTest.jsp?name=egurkha&name1=monitoring&user=weblogic&password=35:37:37:72:25:33:15:14&host=192.168.1.220&port=7001&server=AdminSever&debug=true

To test the configuration of the **WebLogic EJB Pools Test**, the URL will be:

http://192.168.1.220:7001/egurkha/WLEJBPoolsTest.jsp?name=egurkha&name1=monitoring&user=weblogic&password=35:37:37:72:25:33:15:14&host=192.168.1.220&port=7001&server=AdminSever&debug=true

To test the configuration of the **WebLogic EJB Transactions Test**, the URL will be:

http://192.168.1.220:7001/egurkha/WLEJBTransTest.jsp?name=egurkha&name1=monitoring&user=weblogic&password=35:37:37:72:25:33:15:14&host=192.168.1.220&port=7001&server=AdminSever&debug=true

To test the configuration of the **WebLogic Ejbs Test**, the URL will be:

http://192.168.1.220:7001/egurkha/WeblogicEjbTest.jsp?name=egurkha&name1=monitoring&user=weblogic&password=35:37:37:72:25:33:15:14&host=192.168.1.220&port=7001&server=AdminSever&debug=true

1.3.6 Monitoring WebSphere Servers

1. How to check whether the WebSphere tests are working through URL?

If any of the WebSphere tests (4.0/5.1) is not reporting measures, then try to connect to the URL of the following format:

http://<WebSphereIP>:<WebSpherePort>/egurkha/egurkha/EgWebSphere.jsp?module=<moduleName>&summary=true&hostname=<nodeName>&server=<servername>&user=<userName>&password=<password>&ndmanager=<nodemanagerhost>&connectorport=<connectorport>

Here, specify

hostIP = IP of the machine in which the WebSphere Server is running.

hostPort = The port on which the server is running.

moduleName = The name of the module for which measures are required. This will vary from one test to another.

nodeName = The name of the node for every server

servername = The value of the servername parameter of the test

user and password = If security is enabled for the WebSphere server being monitored, then provide a valid user name and password

ndmanager and connectorport = If the WebSphere server being monitored belongs to a WebSphere cluster, then provide the values of the ndmanager and connectorport parameters.

EXAMPLES:

=========

Note: All the examples provided below pertain to non-clustered WebSphere environments, where security is not enabled.

If the WsJdbc test is not reporting measures, then use the following URL:

http://192.168.10.77:9080/egurkha/egurkha/EgWebSphere.jsp?module=connectionPoolModule&summary=true&hostname=egitlab04&server=server1

If the WsGlobalTx test is not reporting measures, then connect to the following URL:

http://192.168.10.77:9080/egurkha/egurkha/EgWebSphere.jsp?module=transactionModule&summary=true&hostname=egitlab04&transaction=global&server= server1

If the WsLocalTx test is not reporting measures, then connect to the following URL:

http://192.168.10.77:9080/egurkha/egurkha/EgWebSphere.jsp?module=transactionModule&summary=true&hostname=egitlab04&transaction=local&server= server1

If the WsSrvltSession test is not reporting measures, then connect to the following URL:

http://192.168.10.77:9080/egurkha/egurkha/EgWebSphere.jsp?module=servletSessionsModule&summary=true&hostname=egitlab04&server= server1

If the WsWebApps test is not reporting measures, then connect to the following URL:

http://192.168.10.77:9080/egurkha/egurkha/EgWebSphere.jsp?module=webAppModule&summary=true&hostname=egitlab04&webapps=true&servlets=false&server= server1

If the WsThreadPool test is not reporting measures, then connect to the following URL:

http://192.168.10.77:9080/egurkha/egurkha/EgWebSphere.jsp?module=threadPoolModule&summary=true&hostname=egitlab04&server= server1

If the WsJvm test is not reporting measures, then connect to the following URL:

http://192.168.10.77:9080/egurkha/egurkha/EgWebSphere.jsp?module=jvmRuntimeModule&summary=true&hostname=egitlab04&server= server1

If the WsBeans test is not reporting measures, then connect to the following URL:

http://192.168.10.77:9080/egurkha/egurkha/EgWebSphere.jsp?module=beanModule&summary=true&hostname=egitlab04&server= server1

If the WsORBSum test is not reporting measures, then connect to the following URL:

http://192.168.10.77:9080/egurkha/egurkha/EgWebSphere.jsp?module=orbPerfModule&summary=false&hostname=egitlab04&server= server1

If the WsORB test is not reporting measures, then connect to the following URL:

http://192.168.10.77:9080/egurkha/egurkha/EgWebSphere.jsp?module=orbPerfModule&summary=false&hostname=egitlab04&server= server1

If the WsWebAppSum test is not reporting measures, then connect to the following URL:

http://192.168.10.77:9080/egurkha/egurkha/EgWebSphere.jsp?module=webAppModule&summary=true&hostname=egitlab04&webapps=true&servlets=false&server= server1

If the WsWebSrvSum test is not reporting measures, then connect to the following URL:

http://192.168.10.77:9080/egurkha/egurkha/EgWebSphere.jsp?module=webAppModule&summary=true&hostname=egitlab04&webapps=true&servlets=falseserver= server1

If the WsWebSrv test is not reporting measures, then connect to the following URL:

http://192.168.10.77:9080/egurkha/egurkha/EgWebSphere.jsp?module=webAppModule&summary=true&hostname=egitlab04&webapps=true&servlets=falseserver= server1

If the Ws test is not reporting measures, then connect to the following URL:

http://192.168.10.77:9080/egurkha/egurkha/EgWebSphere.jsp?module=jvmRuntimeModule&summary=true&hostname=egitlab04&server= server1

If the desired output is not available in the above-mentioned URLs, then you can troubleshoot further using the URL:

http://<WebSphereIP>:<WebSpherePort>/<moduleName>&summary=true&hostname=<nodeName>&server=<servername>&debug=true

For example, if the URL for Ws test does not display the performance metrics, then use the following URL to look for corresponding error information:

http://192.168.10.77:9080/egurkha/egurkha/EgWebSphere.jsp?module=jvmRuntimeModule&summary=true&hostname=egitlab04&server= server1&debug=true

If these URLs do not display the required statistics, then it could indicate either/all of the following:

- The ear file has not been deployed properly.
- The WebSphere server has not been started. In which case, you will have to start the WebSphere application server.

If any of the WebSphere tests (for WebSphere version 6.0 or above) is not reporting measures, then try to connect to the URL of the following format:

http://<WebSphereIP>:<WebSpherePort>/egurkha/egurkha/EgWebSphere.jsp?module=<moduleName>&hostname=<serverHostName>&&nodename=<nodeName>&connectorport=<SOAPConnectorPort>&server=<serverName>&user=<userName>&password=<password>

Here,

hostIP = IP of the machine in which the WebSphere Server is running.

hostPort = The port on which the server is running.

moduleName = The name of the module for which measures are required. This will vary from one test to another.

serverHostName = The value of the serverhostname parameter of the test

SOAPConnectorPort = The SOAP connector port that is mentioned against the connectorport parameter of the test

userName and password = If security is enabled for the WebSphere server being monitored, then provide a valid user name and password

server = The value of the servername parameter of the test

nodeName = The value of the nodename parameter of the test

EXAMPLES:

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Note: All the examples provided below pertain to WebSphere environments, where security is not enabled.

If the WAS Bean test is not reporting measures, then use the following URL:

http://192.168.10.77:9080/egurkha/egurkha/EgWebSphere?module=beanModule&
hostname=egitlab04&nodename=egurkha07Node01&connectorport=8880&server=server1

If the WAS Connection Pools test is not reporting measures, then use the following URL:

http://192.168.10.77:9080/egurkha/egurkha/EgWebSphere?module=connectionPoolModule&
hostname=egitlab04&nodename=egurkha07Node01&connectorport=8880&server=server1

If the WAS Cache test is not reporting measures, then use the following URL:

http://192.168.10.77:9080/egurkha/egurkha/EgWebSphere?module=cacheModule&
hostname=egitlab04&nodename=egurkha07Node01&connectorport=8880&server=server1

If the WAS Object Pools test is not reporting measures, then use the following URL:

http://192.168.10.77:9080/egurkha/egurkha/EgWebSphere?module=objectPoolModule&
hostname=egitlab04&nodename=egurkha07Node01&connectorport=8880&server=server1

If the WAS Gateway test is not reporting measures, then use the following URL:

http://192.168.10.77:9080/egurkha/egurkha/EgWebSphere?module=wsgwModule&
hostname=egitlab04&nodename=egurkha07Node01&connectorport=8880&server=server1

If the WAS ORB Performance test is not reporting measures, then use the following URL:

http://192.168.10.77:9080/egurkha/egurkha/EgWebSphere?module=orbPerfModule&
hostname=egitlab04&nodename=egurkha07Node01&connectorport=8880&server=server1

If the WAS Web Applications test is not reporting measures, then use the following URL:

http://192.168.10.77:9080/egurkha/egurkha/EgWebSphere?module=webAppModule&hostname=egitlab04&nodename=egurkha07Node01&connectorport=8880&server=server1

If the WAS Web Service test is not reporting measures, then use the following URL:

http://192.168.10.77:9080/egurkha/egurkha/EgWebSphere?module=webServicesModule&hostname=egitlab04&nodename=egurkha07Node01&connectorport=8880&server=server1

If the WAS Sessions test is not reporting measures, then use the following URL:

http://192.168.10.77:9080/egurkha/egurkha/EgWebSphere?module=servletSessionsModule&hostname=egitlab04&nodename=egurkha07Node01&connectorport=8880&server=server1

If the WAS Transactions test is not reporting measures, then use the following URL:

http://192.168.10.77:9080/egurkha/egurkha/EgWebSphere?module=transactionModule&hostname=egitlab04&nodename=egurkha07Node01&connectorport=8880&server=server1

If the WAS JVM test is not reporting measures, then use the following URL:

http://192.168.10.77:9080/egurkha/egurkha/EgWebSphere?module=jvmRuntimeModule&hostname=egitlab04&nodename=egurkha07Node01&connectorport=8880&server=server1

If the WAS Threads test is not reporting measures, then use the following URL:

http://192.168.10.77:9080/egurkha/egurkha/EgWebSphere?module=threadPoolModule&hostname=egitlab04&nodename=egurkha07Node01&connectorport=8880&server=server1

If these URLs do not display the required statistics, then it could indicate either/all of the following:

- The ear file has not been deployed properly. To verify whether the *egurkha* application has been deployed properly or not, do the following:

- Open the Internet Explorer and specify the following URL in its Address bar: **http://<WebSphere_IP>:<WebSphere_Port>/egurkha/hello.jsp**
- If the ear file has been deployed properly, then Figure 44 will appear:

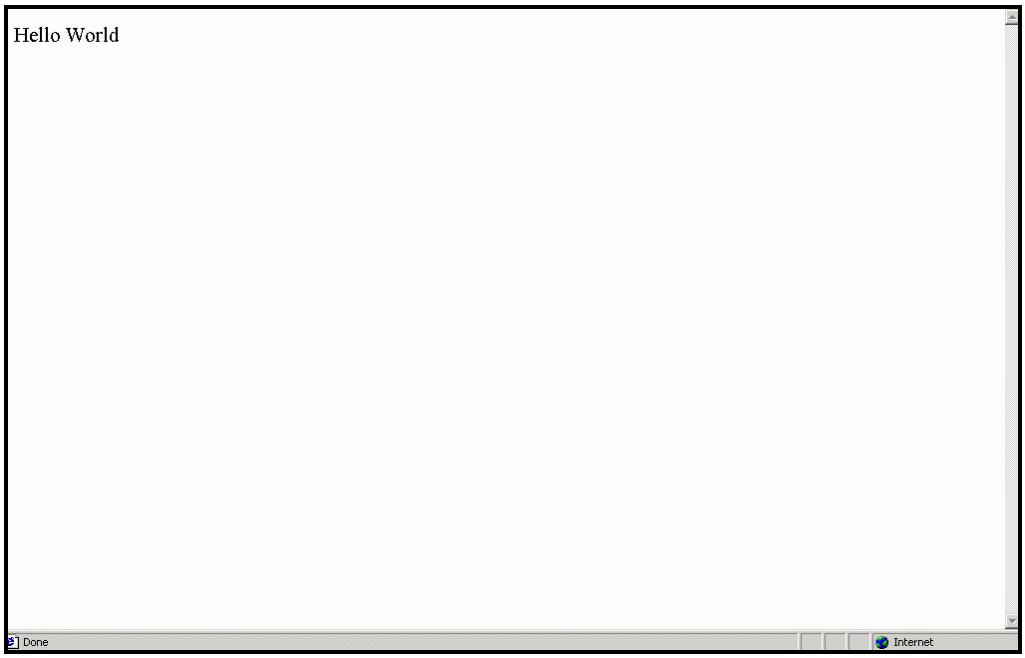


Figure 44: The page that appears upon typing the specified URL in the Internet Explorer

- If the ear file has not been deployed, then an error message will appear instead. In such a case, try redeployment of the ear file.
- The WebSphere server has not been started. In which case, you will have to start the WebSphere application server.

1.3.7 Monitoring Network / Network Devices

1. *Agents monitoring network devices such as routers do not report any measurements. What do I need to do?*

The eG Enterprise suite does not need agents on the routers. You need to have an agent running on the system where the eG manager is installed. This is an "external" agent. If you are not seeing metrics, please make sure that the external agent is running.

Secondly, you need to make sure that SNMP is enabled on the network device (switch/hub/router) you are managing and that the SNMP community string is available. You can check this by running the command:

<EG_INSTALL_DIR>\bin\snmpwalk <IP of router> <community>

For example: c:\egurkha\bin\snmpwalk 192.168.10.10 public

If SNMP is enabled and if the SNMP community is known correctly, you should see a lot of output for the above command. Otherwise, you will see a message that the request timed out.

If you do not see any output using the snmpwalk command, you need to check:

- if the network device is enabled for SNMP monitoring (many routers are not enabled for SNMP monitoring by default - there are explicit commands for enabling SNMP).
- if you have the correct SNMP community string

In some cases, routers have access control lists - only programs executing on these IP addresses can access SNMP MIB values from the routers. You need to make sure that the eG manager system (where the external agent is running) is a part of the list of addresses in the access control list for the router.

2. I am monitoring a couple of network devices, but I am unable to receive data from SNMP walk. Instead, I get to see the following error message:

```
06/10/2014 12:20:20 ERROR NetworkInterfaceTest: Failed to run snmpwalk -t 5 for jfl_je_rdp-pix with community ?????and MIB=.1.3.6.1.2.1.2.2.1.10

06/10/2014 12:20:20 ERROR NetworkInterfaceTest: Failed to run snmpwalk -t 5 for jfl_je_rdp-pix1 with community ????? and MIB=.1.3.6.1.2.1.2.2.1.8
```

What could be the problem and what do I do?

This could happen if the timeout specified is too short for the Network Interfaces Test against the targets. Please open the test configuration page for the Network Interfaces Test and change the default timeout setting.

3. I am monitoring a Network node with the Network Interfaces Test. I see very often that the bandwidth utilization is being reported as 100%, which is not correct. What is the issue?

eG's Network Interfaces Test uses SNMP MIB-II support in the network device to monitor bandwidth into and out of each network interface. The percentage bandwidth utilization is computed by finding the speed of the interface (available from SNMP MIB-II - ifSpeed variable) and comparing the data transmit/receive rates with the interface speed.

The most likely reason for why the percentage bandwidth utilization is not being reported correctly is that the ifSpeed setting for the router interfaces (as reported by MIB-II) is not correct.

The speed setting for each of the router interfaces by executing the following command from an eG agent system:

```
<EG_DIR>\bin\snmpwalk -O nfq <IP> <Community> .1.3.6.1.2.1.2.2.1.5
```

Cisco network devices support "bandwidth" interface sub-command that can be used to set the speed on the different network interfaces in such a way that the correct values are available to the eG agent via SNMP MIB-II.

4. To monitor bandwidth usage of Network Interfaces on Windows, you provide the Windows Network Traffic test. But the Network Traffic test on Linux does not report bandwidth usage. So, how do I track bandwidth usage of interfaces on Linux?

The only way to get this data is through SNMP. You will need to:

- Enable SNMP on the Linux box.
- Then go to eg_specs.ini on the manager. In the eg_specs.ini file of the manager, in the TEST_SPECIFICATION section, add this line:

  NetworkInterfaceTest:Linux_server:$hostName=$hostName,-auto, -host $hostIp -snmpPort 161 -snmpCommunity $community -timeout 10 -snmpversion v1 -username none -authpass none -authtype md5 -encryptflag false -encrypttype des -encryptpassword none -useExtension no -useAlias yes -discoverByState yes -onlyUp no -show_alias_and_interface_name no -exclude Null0|Nu0 -fullduplex Yes -ddFreq 1:1 -ShowDetails Yes -rptName $hostName, 300

  The above line is specific to Linux_server. For each component type you need this supported in, you will need to add a corresponding entry.
- In the TEST_MAPPING and DEFAULT_TEST_MAPPING sections, add "NetworkInterfaceTest" to the list of tests for Linux_server (similar entries needed for other component types).
- Login to the admin console, go to the **Manage/Unmanage** page, choose any component type and hit the **Update** button (no need to manage/unmanage anything).
- Now, **Network Interfaces** Test will appear in the **UNCONFIGURED TESTS** list. Configure this by specifying the SNMP community string. **Network Interfaces** Test will report bandwidth usage for each of the network interfaces of a Linux server.

5. The detailed diagnosis of the 'Avg delay' measure of Network test lists only the first 3 hops and not all of them. Why is this so, and what do I do if I want to see more / all the hops?

The **MaxHopsForNetworkTestDD** parameter in the **[AGENT_SETTINGS]** section of the **eg_tests.ini** file (in the **<EG_INSTALL_DIR>\manager\config** directory) governs how many hops are to be displayed in the detailed diagnosis of the *Avg delay* measure. By default, this parameter is set to 3. This is why, 3 hops are listed in the detailed diagnosis by default. To make sure that more hops are displayed, modify the value of the **MaxHopsForNetworkTestDD** parameter.

6. eG reports that the packet loss on my network is 80%. But, what is confusing is that it reports that network 'Availability' is 100%. Why is this so?

eG runs the *ping* command to test network health. When running *ping* , it send 5 packets to the target and only if all the packets are lost, it will report that *Packet loss* is 100% and network *Availability* is 0. If the eG agent receives a response for even one of the packets sent, then eG will report *Availability* as 100% with *Packet loss* of *80%*. This indicates that the network is still available but not very stable.

7. eG reports the speed of a network interface, which has only 1 GB max connection, as 4.2 GB. Is this even possible? Also, the speed value never changes. Isn't this wrong?

The speed value is a static setting – in other words, it is a value that is explicitly set for a network interface through tools such as Cisco admin interface or through commands. This value will hence NOT change with time. eG uses this value to compute the percentage bandwidth usage of a network interface. This value cannot be used to determine how well the network interface is working.

If you think that the above value is incorrect for a network interface, you can use the "bandwidth" interface sub-command of Cisco IOS (provided the network device being monitored is a Cisco device) to manually set the correct speed values for each network interface.

8. Do you collect configuration metrics from Network devices?

Yes. The eG agent does support configuration tracking for network devices. Three basic configuration tests are enabled for network devices – these are, **System Details** test, **IP Details** test, and **Network Interface Details** test. These tests are mapped to the following components:

- Network node
- Cisco router
- Cisco Catalyst Switch
- Local Director
- Cisco PIX firewall
- Fibre Channel Switch

9. How do I know whether/not a Cisco router is Netflow-enabled?

When configuring the Netflow test, click the **Validate** button in the test configuration page. If Netflow is not enabled at all or is not configured correctly, then the **Validate** window will clearly indicate the same by marking the **Netflow Enabled** validation parameter with a 'X' mark.

1.3.8 Monitoring Java Applications

1. I am monitoring a Java application in my environment using JMX. I have configured the tests correctly, but yet, I noticed that none of the tests run. I checked the agentout.log file for errors, found an error of the following format logged therein:

```
JMXCONNECTORTEST : Connection to JVM is not established for Host :
<Nick name of the Java Application being monitored
```

Such error messages were found for each test mapped to the Java application. What do these error messages imply and what do I do?

This error message appears if the eG agent is unable to connect to the JMX of the target Java application for collecting metrics.

To resolve this issue, do the following:

- Check whether the eG tests have been configured with the correct JMX port and user credentials for connecting to JMX. If not, then, make sure that the tests are configured with proper values.

- If the problem is not with test configuration, then, edit the startup script of the target Java application, and include the following line in it:

```
-Djava.rmi.server.hostname=<IP Address>
```

In this line, set the **<IP Address>** to the IP address using which the Java application has been managed in the eG Enterprise system. Alternatively, you can add the following line to the startup script:

```
-Djava.rmi.server.hostname=localhost
```

- Finally, save the startup script and restart the application.

1.3.9 Monitoring Database Servers

1. What permissions are needed for the user account that eG Enterprise needs to monitor an Oracle database?

a. create session privilege

b. select_catalog_role privilege

The sample script recommended for user creation for eG monitoring is:

```
create user oraeg identified by oraeg

create role oratest;

grant create session to oratest;

grant select_catalog_role to oratest;

grant oratest to oraeg;
```

2. How do I find the version of SQL server?

Using the ISQL, ISQL/W, SQL Enterprise Manager or any other tool, submit the following query to the SQL server:

SELECT @@version

The result of this query will be as given hereunder:

```
Microsoft SQL Server 2000 - 8.00.760 (Intel X86) Dec 17 2002 14:22:05
Copyright (c) 1988-2003 Microsoft Corporation Standard Edition on
Windows

NT 5.0 (Build 2195: Service Pack 4)
```

3. Can your monitoring solution alert an administrator if one of the MS SQL databases has been taken offline?

The eG Enterprise suite addresses this requirement. Here, the SQL Network Test has been modified to accept a comma-separated list of databases that need to be monitored.

4. What privileges are required for monitoring a Sybase Adaptive server (of a version less than 15)?

sa_role and *sybase_ts_role*

5. Why do you need both sa_role and sybase_ts_role for monitoring a Sybase Adaptive server (version less than 15)? Wouldn't the sa_role alone suffice?

Both roles are essential because, while a few tests require the *sa_role* for pulling out the metrics, a few others demand the *sybase_ts_role*.

The following tests will **NOT** work if *sa_role* is not enabled:

- Sybase Network Test
- Sybase Locks Test
- Sybase Cache Test
- Sybase Proc Cache Test
- Sybase Devices Test
- Sybase Transactions Test

- Sybase Transaction Log Test
- Sybase Tasks Test
- Sybase Database Space Usage Test

The following tests will **NOT** work if a *sybase_ts_role* is not enabled:

- Sybase Applicationss Test
- Sybase Blockers Test

A 'public' role will suffice for the following tests:

- Sybase Connection Test
- Sybase Responses Test
- Sybase System Processes Test
- Sybase Lock Stats Test

6. When monitoring Oracle 11G R2 on Linux, I found that the Oracle Lock test and the Oracle Lock Wait test took too long to execute. Why does this happen and what do I do?

Such a phenomenon can be noticed on an Oracle 11G server that is upgraded from a previous version. On such servers, first, execute the following PL/SQL block to analyze the fixed objects:

```
exec dbms_stats.GATHER_FIXED_OBJECTS_STATS
```

Then, proceed to re-organize the system tables as suggested by the Oracle metalink notes with Doc ID 1328789.1: "Query Against v$lock Run from OEM Performs Slowly".

7. The SQL Database Space test for a SQL Cluster Service is reporting the value "not available" for all databases other than the 'master' and 'msdb' databases. The error logged in the agenterr log was as follows:

java.sql.SQLException: The server principal "egagent" is not able to access the database "dba" under the current security context.

How do I resolve this issue?

From the log output, it is clear that the error occurred because the 'egagent' user has been configured with insufficient privileges. To run the MSSQL Database Space test for **all databases on the MS SQL server**, the eG agent has to be configured with the privileges of a **Sysadmin** user. Apparently, in your environment, the eG agent runs with the privileges of a user who has access to the 'master' and 'msdb' databases alone - this should explain why this test reports valid measures when monitoring either of these databases alone. If you do not want to expose your **Sysadmin**

credentials owing to security constraints, then alternatively, you can create a special user for this purpose on each of the databases to be monitored, and make sure that you assign any of the following privileges to that user:

- Assign the **db_datareader** privilege to that user in each of the databases to be monitored; (OR)
- Assign the **PUBLIC** role to that user, and grant **execute** permission to that user for the **sp_spaceused** procedure in every database to be monitored

Note that the name of the special user should be the same in all the databases

8. *The Oracle Instance Status test is failing with this error, ORA-12505, TNS:listener does not currently know of SID given in connect descriptor. This happens only on those servers that host multiple instances of the Oracle database server. What do I do?*

Where multiple instances of Oracle are at work on a single host, follow the steps below to ensure that the **Oracle Instance Status** test reports metrics:

- Edit the **listener.ora** file in the **<ORACLE_HOME>\network\admin** directory.
- Look for a code block that begins with the text, **SID_LIST_<LISTENER_NAME>=,** in the file.
- If no such block exists, then insert the following in the file, for one of the Oracle instances on the host:

```
SID_LIST_LISTENER=
  (SID_LIST=
    (SID_DESC=
      (GLOBAL_DBNAME=<Name_of_DB_of_Instance1>)
      (ORACLE_HOME=<HomeDir_of_Instance1>)
      (SID_NAME=<SID_of_Instance1>)
    )
```

- Then, below the code block mentioned above, insert the following block for every remaining Oracle instance running on that host.

```
    (SID_DESC=
      (GLOBAL_DBNAME=<Name_of-DB_of_Instance2>)
      (ORACLE_HOME=<HomeDir_of_Instance2>)
      (SID_NAME=<SID_of_Instance2>)
    )
    (SID_DESC=
      (GLOBAL_DBNAME=<Name_of-DB_of_Instance3>)
      (ORACLE_HOME=<HomeDir_of_Instance3>)
```

```
      (SID_NAME=<SID_of_Instance3>)
    )
   ...
   ...
  )
```

- For example, assume that there are 3 Oracle instances running on a host, the details of which are as follows:

Instance Name	Global DB Name	Oracle Home Dir	SID
Orainst1	globus	Oracle10G	eginstance1
Orainst2	ccdb	Oracle11i	eginstance2
Orainst3	empdb	Oracle9i	eginstance3

In this case, make the following entries in your **listener.ora** file:

```
SID_LIST_LISTENER=
  (SID_LIST=
    (SID_DESC=
      (GLOBAL_DBNAME=globus)
      (ORACLE_HOME=/Oracle10G)
      (SID_NAME=eginstance1)
    )
    (SID_DESC=
     (GLOBAL_DBNAME=ccdb)
      (ORACLE_HOME=Oracle11i)
      (SID_NAME=eginstance2)
    )
    (SID_DESC=
      (GLOBAL_DBNAME=empdb)
      (ORACLE_HOME=Oracle9i)
      (SID_NAME=eginstance3)
    )
  )
```

- Finally, save the file
- On the other hand, if a block that begins with **SID_LIST_<LISTENER_NAME>=**, pre-exists in the **listener.ora** file, but for only a single Oracle instance, then, below the **SID_DESC** block of that instance, append the following block for every other instance running on that host:

```
    (SID_DESC=
      (GLOBAL_DBNAME=<Name_of-DB_of_Instance2>)
      (ORACLE_HOME=<HomeDir_of_Instance2>)
      (SID_NAME=<SID_of_Instance2>)
    )
    (SID_DESC=
      (GLOBAL_DBNAME=<Name_of-DB_of_Instance3>)
      (ORACLE_HOME=<HomeDir_of_Instance3>)
      (SID_NAME=<SID_of_Instance3>)
    )
    ...
    ...
  )
```

- Then, save the file.

9. *The SQL Waits test has been frequently alerting me that the Avg wait time is abnormally high for Network IO waits. Should I be concerned?*

"Network IO Waits" happen due to applications that query large results sets but do not process more than a few rows at a time. If the wait time of network IO waits is unusually high, then do the following:

- Ensure that the client application processes all rows it is requesting. If not all rows will be needed or used - consider only querying the rows that are needed (TOP X for example).
- Look at your NIC configuration on the server and make sure there are no issues (physical card issue, auto-detect not picking the fastest speed).
- Validate the network components between the application/clients and the SQL Server instance (router, for example).
- If you are doing server-side data loads that are still showing NETWORKIO, check to see if shared memory protocol is enabled for the SQL Server instance (and then check to see if session is connected using net_transport = 'Shared memory" via sys.dm_exec_connections).

10. *In the detailed diagnosis of the 'SQL Blocker Processes' test, I noticed that the SPID of the Waiting process and the Blocking process was 64. Looks like the process with SPID 68 was blocking itself. Can something like this occur in the real world? If so, when?*

Yes. When an SPID is waiting for an I/O page latch, then detailed diagnostics will briefly report that the SPID is blocking itself. This can happen in the following manner:

- SPID 64 wants to read a data page that does not exist in the buffer pool.
- SPID 64 acquires an EX latch on the page. Because the page does not exist yet in memory, the requested latch mode is EX. The EX latch mode forces other SPIDs that may also want to access the page to wait for the I/O request to finish. The EX latch mode also prevents other SPIDs from issuing a duplicate I/O request for the same page.
- SPID 64 issues the I/O request to read the page from disk.
- Because SPID 64 wants to read the page, SPID 64 must wait for the I/O request to finish. To wait for the I/O request to finish, SPID 64 tries to acquire another latch that has the shared (SH) latch mode on the same page. Because an EX latch has already been acquired, the SH latch request is blocked, and the SPID is suspended. Because the EX latch that blocks the SH latch request was also acquired by SPID 64, the SPID is temporarily reported as blocking itself.
- When the I/O request finishes, the EX latch on the page is released.
- The release of the EX latch gives the SH latch to SPID 64.
- SPID 64 can now read the page.

11. *I am monitoring a Microsoft SQL server that has been configured using a named instance. The TCP Port Status test of this server is not reporting metrics. Why? What do I do now?*

Since the SQL server is instance-based, the port allocation to the server could have been dynamic. The TCP Port Status test must be checking the port that you have configured for monitoring, and this port may have changed dynamically, causing the test to fail. In this case, it is best to disable this test for the SQL server.

1.3.10 Monitoring the SAP Environment

1. *How do I download the SAPJCO adapter that is required for monitoring the SAP ABAP instance?*

To download the JCO Adapter, complete the following steps:

- Go to http://service.sap.com/connectors.
- Login with your service market place ID.

- Click on the **SAP Java Connectors** link.
- Click on **Tools & Services**.
- Scroll down to the **Download SAP JCo Release 3.0** section.
- Locate the appropriate zip file for the operating system and bit version of the eG agent. For example, if a Windows 2008 64-bit agent is to be used for monitoring the SAP ABAP instance, choose the zip file link *64bit x86* under the *Microsoft Windows and Windows Server:* section.
- Download the zip file to any location on the eG agent host.
- Extract the contents of the zip file to the same location.
- From the extracted contents, copy the following files alone to the **<EG_AGENT_INSTALL_DIR>\agent\lib** directory (on Windows; on Unix, this will be the **opt/egurkha/agent/lib** directory):
- sapjco3.jar
- sapjco3.dll
- If you have downloaded the Windows JCO 3, then remember that for it to work, appropriate Visual c++ runtime DLL files should also be installed on the eG agent host. For that, first go to the URL: http://www.microsoft.com/en-us/download/details.aspx?id=14431
- Click **Download** and choose the correct **vcredist_<bit_version>.exe** file as per the eG agent's bit version.
- Execute the downloaded **vcredist.exe** file to install the appropriate VC++ runtime dlls.
- Restart the eG agent.

1.3.11 Monitoring - General

1. *How do I know how much bandwidth is being consumed by an application?*

eG does not provide an application-wise breakup of the network bandwidth usage. However, it does provide the application-level traffic for certain applications. A few examples have been cited below:

Oracle Sql Network Test of an Oracle Database server: This test gives information about rate of data sent to and received from clients by a database server.

Web Server Test of a Web server: This test gives request rate, data transmit rate and data receive rate.

2. How should I monitor a component on a remote privately addressed network behind a firewall?

The steps involved are:

- Install an eG external agent on a system behind the firewall.
- Add the component for monitoring on the eG manager.
- Assign the component to the eG external agent for monitoring.
- Configure the SNMP community strings for the component using the eG admin interface, if the component is a network device.

Note: It is best to have the eG manager on port 80 or 443. Most firewalls will allow traffic through port 80 or 443 and there is no need to change any firewall rules.

3. The Disk Activity test does not report measures in Linux platforms. Why is this happening?

The Disk Activity test uses the command "iostat" to collect the metrics. For this command to work properly the latest "sysstat" package needs to installed on the machine.

4. The Disk Activity Test fails to report metrics on CentOS operating systems, and instead, throws the following exception:

```
Exception in DiskActivityTest (CENT OS )
java.io.IOException: java.io.IOException: iostat: not found
at java.lang.UNIXProcess.<init>(Unknown Source)
Error in executing the command ... iostat -x -d 5 2
```

What do I do to solve it?

If such an error appears, then run the following command from the Cent OS prompt:

yum install sysstat

This will solve your issue.

5. The eG manager in an environment was unavailable for a while for want of tablespace. Soon after the manager came up, it was noticed that while a few tests executing on a server function smoothly, data pertaining to a few other tests executing on the same server do not get uploaded to the eG manager properly. Why does this happen and what needs to be done?

During the period of non-availability of the eG manager, data files are created and data is stored in those files. After restarting the manager, the agents begin reporting the data. The data for a given

test gets pumped in chunks from the datafile only when the test runs the next time. Therefore, there's bound to be a time delay in uploading. Observe the following, when this issue occurs:

- Wait for a minimum time of that specific test frequency plus 10 mins to see if the data is getting cleared up.
- Note that the data will not go in one chunk but in small chunks and hence may take some time. Observe that if the records on the top of the file are getting submitted by eG.
- Observe if the file time is getting updated once approximately every test frequency
- If the file has more than 3000 lines observe if the stale data is being removed from the top of the file and new data getting added to the bottom. This can be tracked using the **msmt_time** field values stored in each row of data in the file.

6. *I have the different instances on each and every server configured with a separate IP address and a unique nick. This creates 6 components for a web server for example. I do not have the internal agent set to the same component. Would this increase the space consumed in the DB?*

If you use different nicknames, the space consumed will increase. Even if you map them to the same internal agent, it will not help from a space perspective - the results will be reported for different nick names. The only way to solve this is to use the same nick name.

7. *Can the alarm window be made to refresh faster? If so, how?*

The alarm window can be made to refresh faster by changing the default refresh frequency. The flag for this is in the file, **/opt/egurkha/manager/config/eg_ui.ini**

```
[REFRESH]
...
...
EgAlarms=60
...
...
```

Change the number 60 to 30, this will make the Alarms page refresh every 30 secs instead of the default 60.

8. *What happens if a new System event log error is generated on a monitored server?*

When system event log errors occur, eG alerts you the number of system error events that has occurred in your email. You can use the eG Detailed Diagnosis feature to get "Event Log Viewer" equivalent information.

9. *The Tcp Traffic Test is not reporting any measures. What do I do?*

Tcp Traffic Test on Windows servers uses the "TCP" or "TCPv4" perfmon objects. The SNMP service needs to be running on the monitored servers for this test to function.

10. How do I enable auto-indexing?

The **eg_services.ini** file in the **<EG_INSTALL_DIR>\manager\config** directory comprises of an **IndexRebuild** flag (in its **[MISC_ARGS]** section). If this flag is set to **YES**, then the trend manager, upon execution, will automatically initiate an index recreation process. If this process is to be performed manually, then set the **IndexRebuild** flag to **NO**.

A file named **eg_indextables.ini** also exists in the **<EG_INSTALL_DIR>\manager\config** directory, which consists of the following entries:

- **MaxIndexTime**, which indicates the duration (in minutes) for which auto index creation will run. If this parameter is set to 60, it means that the auto index creation will run for 60 minutes, i.e., 1 hour.
- **ReBuildFrequency**, which governs how frequently the auto index creation process should run. If this parameter is set to 2, it means that the auto index creation process will run every two days.

11. I had a DHCP IP allocated during the manager installation, but later got static IP and configured all the agents. Later, I noticed that the home link in the email alert always points to the DHCP address- i.e. the older address. Why does this happen and what do I do to fix it?

This is because the **Home page URL in mail messages** parameter in the eG administrative interface continues to point to the DHCP IP allocated address. All you need to do is to change this parameter to point to the static address.

To accomplish this, do the following:

- Login to the eG administrative interface.
- Select the **Alert Settings** option from the **Mail Settings** menu of the **Alerts** tile.
- From the **MAIL ALERT SETTINGS** tree in the left panel, select the **Mail/SMS Alert Preferences** node.
- In the **MAIL/SMS ALERT CONFIGURATION** section in the right panel you will find the **Home page URL in mail messages** text box set to the DHCP IP address, in your case. Change this to reflect the static IP address.
- Click the **Update** button.

12. How do I change the alarm sound?

On Unix environments, please go to the **/opt/egurkha/manager/tomcat/webapps/final/monitor/eg_waves** directory on your eG manager system. On Windows environment, go to the **<EG_INSTALL_DIR>\manager\tomcat\webapps\final\monitor\eg_waves** directory.

There you will find three wave files, each named after the alarm priority it corresponds to. For example, for a **Critical** priority alarm, the corresponding sound file is **high.wav**. Accordingly, **medium.wav** will correspond to a **Major** priority alarm, and **low.wav** will correspond to a **Minor** priority alarm. You can change the alert sound for a specific priority, using the procedure detailed below. For example, to change the alert sound for a **Critical** priority alarm, do the following.

- Rename **high.wav** as **high.wav.org**
- Copy **chimedwn.wav** (or any other wav file that you wish to assign to a **Critical** priority alarm) to the opt/egurkha/manager/tomcat/webapps/final/monitor/eg_waves directory, and rename it to **high.wav**.
- Clear the cache in your browser and try.
- You will hear the new sound for the **Critical** priority alarm.

13. *I would like to have the eG manager alert me when agents have stopped running. Is this possible?*

Yes. To do this, follow the steps below:

- Login to the eG administrative interface.
- Select the **Alert Settings** option from the **Mail Settings** menu of the **Alerts** tile.
- From the **MAIL ALERT SETTINGS** tree in the left panel, select the **Mail/SMS Alert Preferences** node.
- In the **MAIL/SMS ALERT CONFIGURATION** section, set the **Alert if an agent is not running** flag to **Yes**.
- Click the **Update** button.

14. *Currently reports are to be displayed as bar charts. Is there any way that we can select the graph output such as line, bar chart, etc?*

The graph types displayed are defaults and are not configurable to other types.

15. *We are trying to use a custom logo on the monitor interface screens. We have uploaded a gif image within the dimensions and size mentioned in the manuals but we are unable to display the new logo. All that happens is that the eG logo is displayed. I believe that everything is correct within the system as setting the logo image to "none" results in the eG logo not appearing in the monitor interface. What more needs to be done?*

The browser, for optimizing the access speed, will cache the images during the first access and store it locally. Whenever, the URL is accessed subsequently, it looks for the locally stored static items like images and if available uses that without downloading. This is the issue in your case. Please clear the browser cache on the client side and then check if you get the same issue. To clear the browser cache, on Internet Explorer, use the menu item "Tools > Internet Options", and then use the "Delete

Files" option. If prompted for confirmation to delete all offline contents, select the option and clear the offline contents. After this, you should be fine.

The alternative is to check if this is really a browser cache issue. Towards this end, try to access the eG Monitoring suite from a box from which you have not accessed the monitoring solution before. If this displays the right logo, then it is indeed a browser cache issue.

16. Both the Network Test and Tcp Port Status Test that are executed by an external agent have not been reporting measurements. However, the manual ping tests and traceroute tests work correctly. Why does this happen and what do I do?

This generally happens if there is a mismatch in the nick names given to the host and the external agent configurations. To verify this, check if the "eg_agents.ini" file on the <EG_INSTALL_DIR>\agent\config directory on the agent host has the needed entries for running the Network test and Tcp Port Status test. If this ini file does not have such entries, it could indicate a mismatch in the nick names.

Next, ensure the following:

- The name configured for the external agent name should be the same as the name used for the host in the eG Enterprise system. For example, if the component is managed with "name1" and IP "192.168.10.5", the external agent should also be added with the same name "name1" and IP "192.168.10.5". Accordingly, the eg_nick.ini file <EG_INSTALL_DIR>\agent\config directory on the agent host should contain the following entry:

```
[NICKNAME]
Nick=name1
```

- If you want to add the external agent configuration in a different name, the new name given to the external agent should also be added in the eg_nick.ini file in the <EG_INSTALL_DIR>\agent\config directory. For example, if the component is managed with "name1" and IP "192.168.10.5", and the external agent is added using the same IP but a different nick, say "name2", the eg_nick.ini file should contain the following entry:

```
[NICKNAME]
Nick=name1:name2
```

17. I understand that one CitraTest license would be required to test from the location where we are required to do the emulation. I also realize that an external agent is required on the system running the eG Client Emulation package. Is the location where the emulation is performed defined as a logical location (e.g. the physical network has visibility to all countries hosting components of the Citrix farm) or is it a physical location (e.g. one license is required at each location where components of the Citrix farm are located)?

This is a logical location. If all the farms can be reached via network from that box, and the needed checks performed too, then CitraTest can record and play back the same.

18. The icons used on some of the eG screens to indicate that an agent is running don't currently appear to be working on our system. Is this something we should be concerned about and how can we fix the problem?

The images that eG uses represent the statuses, which are as follows:

- A user icon flanked by a red dot - Indicates that the agent is not running;
- A user icon flanked by a green dot that blinks – Indicates that the agent is running and is reporting measures.

If you can see a user icon with a green dot, but the dot does not blink, there it could be owing to a Gif rendering issue:

Some versions of the browser have problems rendering this active gif. Sometimes, this image file may not be downloaded properly on the browser side. To check if this is the case, check the same image from a different version of the browser and/or from a different box. If it turns out that it is a browser-specific issue, then do the following:

- Clear the browser cache and temporary files and check the image again and see if the browser is rendering it properly.
- Install a different version of the browser in that box.
- This can also be a browser setting issue, where you may have to set "play animation in web pages" under the "multimedia" in browser options.

19. Can the eG Enterprise suite integrate and utilize Windows WMI/MOM?

The eG Enterprise suite uses different ways to interface with applications being monitored. WMI is one of the interfaces used by the eG agents to extract performance metrics from the Microsoft applications/operating system.

The eG Enterprise suite can integrate with third party management products such that SNMP traps generated by the eG Enterprise suite are received and displayed by these management products. Seamless integration with Microsoft SCOM is possible via eG's proprietary eG SCOM Connector plugin.

20. Can the eG Enterprise suite monitor SAN/NAS health?

Yes. eG Enterprise does provide monitoring support to Storage Area Networks (SANs). SANs are an integral component of most infrastructures, and in particular, virtualized infrastructures, where the datastores of a vSphere, XenServer, or Hyper-V server are often mapped to SAN devices. In a typical multi-tier IT infrastructure, users connect to applications hosted on application/web servers. In turn, the applications use backend database servers for data access. In turn, the database servers rely on storage sub-systems for providing the essential data storage services. Switches handle the network connectivity between the servers and the storage sub-systems (see Figure 17).

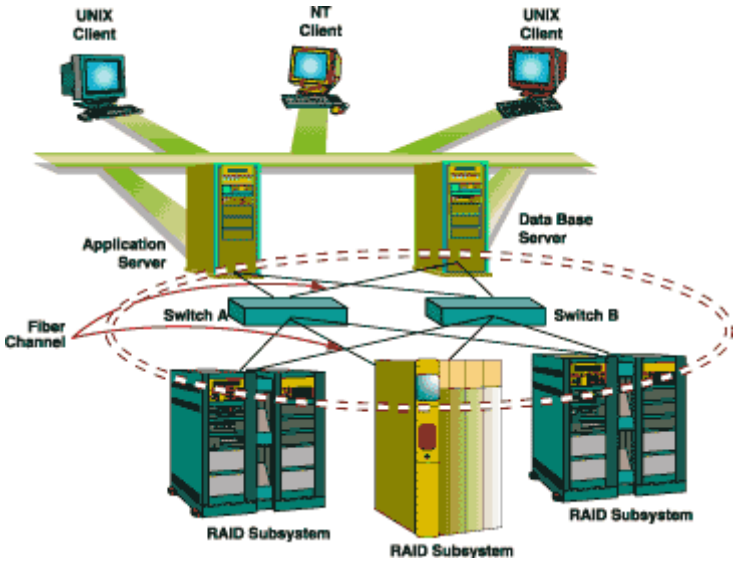


Figure 45: A typical SAN infrastructure

A complete SAN monitoring solution is one that can not only monitor each of the SAN component silos independently, but can also provide a holistic view of the performance of the entire SAN environment, so that the root-cause of performance issues experienced by the environment can be accurately ascertained.

eG Enterprise embeds the capability to provide end-to-end visibility into the performance and problems pertaining to the SAN infrastructure as a whole. In addition to the extensive web, application and database monitoring capabilities, eG Enterprise v5 provides the following:

- Specialized monitoring for Brocade SAN and Cisco SAN switches
- Specialized monitors for Generic Fibre Channel switches
- Dedicated monitors for popular storage sub-systems such as IBM DS Raid Storage, HP EVA StorageWorks, Hitachi AMS and USP storage, NetApp USD, IBM Storwize, EMC CLARiiON, EMC VNX, etc.

While the new and improved switch monitors can proactively alert you to switch failures, the dedicated monitoring models that eG Enterprise provides for storage devices can give you a heads up on issues related to the critical components of your storage sub-system such as host ports, controllers, LUNs, physical disks, caches, enclosures, and even the hosts connecting to the SAN. Add the solution's proven expertise in application monitoring and its patented correlation capabilities to this mix and you have a single, central monitoring solution that can perform the following with ease:

- Monitor the entire spectrum of components that are part of a typical SAN environment!
- Automatically correlate performance across the SAN infrastructure on the basis of the inter-dependencies between the components;
- Easily isolate the source of performance issues in the SAN environment

With respect to storage sub-system monitoring in particular, note that the number and nature of metrics collected by the eG agent will vary according to the type of storage device being monitored. For instance, the eG agent monitoring HP EVA StorageWorks Storage arrays can enable administrators find quick and accurate answers for the following performance queries:

- Has any temperature sensor failed?

- Is the temperature of any sensor abnormally high?
- Have any communication buses failed?
- Has any enclosure EMU failed? Is any enclosure module in an abnormal state currently? If so, which one?
- Are the fans operating normally in the enclosure and on the controller?
- Has any power supply unit failed in the enclosure or in the controller? Is any unit about to fail?
- Is any disk group running out of space?
- Is the I/O traffic on any disk group abnormally high?
- Are all physical disks on the array healthy? Is any disk inaccessible?
- Is any physical disk experiencing slowdowns in read/write operations?
- Are the LUN groups utilizing their caches effectively, or are too may read/write requests to the LUN groups being serviced by direct disk accesses?
- Has any LUN failed?
- Are all LUNs utilizing their caches effectively, or is any LUN servicing many of its read/write requests by directly accessing the disk?
- Are all device ports on the controller functioning normally?
- Is any device port down?
- Is any device port experiencing too many errors? If so, what type of errors are these?
- Has any fibre channel port failed or is about to fail?
- Are there any invalid/bad fibre channel ports on the controller?
- Is the EVA system operating normally? Does the system have adequate free spaace?
- Has any cache battery failed?
- Is the temperature of any controller very high?
- Is any controller utilizing CPU resources excessively?
- Is the array able to quickly process all requests from external hosts, or are too many outstanding requests in queue? Which external host is responsible for the maximum number of requests?
- Is any host port experiencing a bottleneck during request processing?
- Are too many requests awaiting processing by a host port? If so, which host port is it?

21. Can eG monitor vital statistics of servers and its operating environment i.e. humidity, temperature?

The eG agents can integrate with Dell Open Manage and HP/Compaq Insight agents to extract hardware/environment statistics using SNMP.

22. Can the eG solution send out email alerts if a previously critical problem has been resolved and has hence been restored to normal state?

Yes. The eG Enterprise suite can be configured to send out email alerts when a problem test/component is restored to normalcy. To ensure this, set the **Send mails/SMS when alarms are cleared** flag to **Yes**.

23. In a target environment, a router has been used to connect to the monitored components distributed across multiple locations. However, the firewall setting is such that the PING command cannot be used to connect to the servers. Can eG still monitor the components?

Yes. eG will be able to monitor these components, provided the following are in place:

- The firewall settings will have to be changed to allow the eG agent to communicate with the eG manager - for example, if the manager listens on port 7077, then the port 7077 will have to be opened.
- The Network Test, which uses PING command, will have to be disabled.

24. Can eG integrate with HP OpenView?

Yes. eG can be integrated with HP OpenView. eG alarms can be forwarded to the HPOV console as SNMP traps. To configure the HPOV manager as an SNMP trap receiver, select the **Receivers And Settings** option from the **SNMP Traps** menu of the **Alerts** tile in the eG administrative interface.

25. Is it possible to configure two different rotating log files in different directories using one single test? For instance: I want to search string "x" in /opt/x.log."ddmmyy" and string "y" in /data/y.log."ddmmyy". Is it possible using one single test?

Yes, it is possible to configure two different rotating log files in different directories using one single test. However, the only pre-requisite here is that the search strings "x" and "y" should be common to both log files. In other words, the eG Enterprise system cannot search for the string "x" alone in the x.log file.

26. I am monitoring a Generic server using an internal agent. No external agent is operational in my environment, and hence I have disabled the external tests such as Tcp Port Status test and Network test for the Generic server. I then unplugged the server from the network to simulate a server crash, and then waited for a while expecting eG to alert me of the non-availability of the server.

However, no such event occurred. Instead, the state of the Generic server component changed from green to blue. Why does this happen?

The internal tests are designed to measure the internal attributes like CPU, memory, disk usage, network traffic etc. The external tests like Network test, Tcp Port Status test, Http test etc., monitor the external availability of a component at different levels and are run by the external agent.

When you pull out the network cable, due to loss of connectivity, the internal agent will not be able to send the metrics to the eG manager. Instead, the agent stores the measure data locally in the data directory, until such time that the connection to the eG manager is restored. Since the eG manager does not receive any data from the internal agent, it marks all the internal tests as UNKNOWN.

At this juncture, only an external agent can inform the eG manager about the non-availability of the Generic server, as it continuously monitors the network connectivity to and from the server. Since no external agent has been configured in your environment, even this is not possible.

This is the expected behavior in a target environment where external agents do not exist and the network cable is unplugged.

27. *I want to externally monitor a few components that reside within a firewall. Do I have to poke holes in my firewall to enable this monitoring?*

If you are monitoring a component inside a firewall zone, you can configure an external agent on one of the other boxes within the zone to externally monitor the target component. Hence, there is no need to poke any hole in the firewall to allow external accesses.

28. *I installed Citra Test on a remote host using a Remote Desktop connection. In the same manner, I created a Citra Test script on the remote host, and configured an eG external agent to execute the script and report measures. Now, the test is in the UNKNOWN state. What could be the problem, and how do I resolve it?*

This change of state could be because the eG agent is unable to execute the CitraTest script. If CitraTest had been installed and the script created in a normal Remote Desktop session, then the eGurkhaAgent service will not be able to execute the CitraTest script due to lack of the requisite permissions. On the contrary, if all the above-mentioned processes had been implemented using the 'mstsc /console' of the Remote Desktop, then the eGurkhaAgent service will execute the script and report measures to the eG manager.

29. *The Oracle 10G application server that is being monitored is not reporting measures. What could be the problem, and how do I fix it?*

In this case, do the following:

- Check if the **dmstool** is available in opt/app/oracle/product/10.1.3/OracleAS_1/bin/dmstool; if not, then the Oracle application server-related tests will not run

- Next, check if the eG user has permission to run the **dmstool** utility. If not, you will

either need to install the eG agent as the Oracle application server user, or you will need to ensure that the eG user is in the same group as the Oracle application server user

30. In the Windows servers that are being monitored in my environment, the perfmon object 'PhysicalDisk' is not present; owing to this, Disk Activity test has failed to report measures. I tried enabling the perfmon counters and even rebooted the server, but in vain. What else can I do to load the perfmon object that is missing?

Sometimes, when using the Performance Monitor tool, a performance object/counter may unexpectedly fail to appear. This may occur because of any of the following reasons:

- The extensible performance DLL may be marked as "disabled".
- The counters may have been disabled in the Windows registry
- The performance counter libraries may have become corrupted and may need to be rebuilt

The object/counter can be made to re-appear using any of the following procedures, depending upon the operating system in use on the host being monitored:

Operating System	Procedure
Windows 2003	Use the ExCtrlLst utility from the Windows Resource Kit
Windows 2008 R2 and Windows 2008 64-bit	Check whether the missing performance counters are disabled in the registry, and if so, enable them; If the counters do not appear even after step 1 above, then manually rebuild performance objects and counters

All these procedures have been discussed below:

Re-enabling an extension by using ExCtrlLst on Windows 2003

- **Exctrlst.exe** is a utility that is available in the Windows Resource Kit (which works on both Windows 2000 and Windows 2003).
- Download the setup file (if it is not already available) of this utility from the Microsoft site to the local host, rename it to contain a **.exe** extension, and execute it to install the utility.
- Once installed, start **Exctrlst** to view the details of all the perfmon objects installed on the machine in the **Extensible Performance Counters** list in Figure 42.

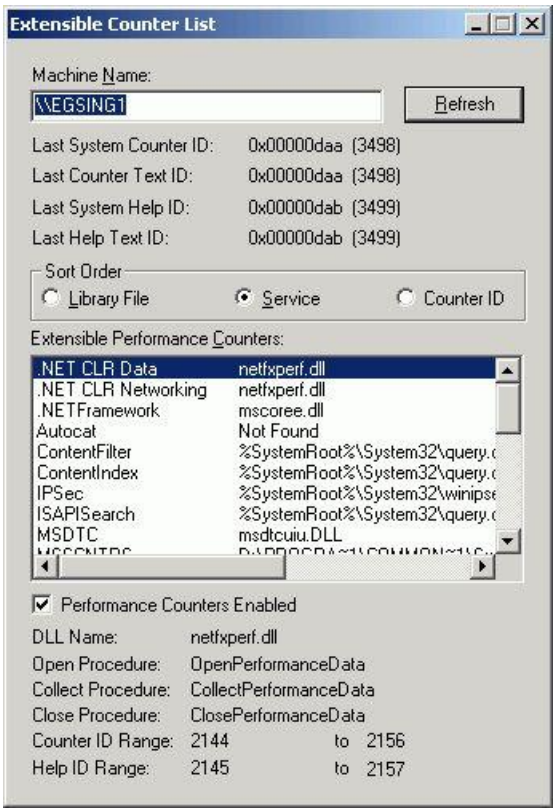


Figure 46: Enabling perfmon counters

- To enable a counter, first select it from the **Extensible Performance Counters** list box.
- Inspect the status of the **Performance Counters Enabled** checkbox that appears just below the list box. If the checkbox is selected, the counter is enabled. If it is cleared, then select the checkbox to enable it.

Re-enabling disabled counters in the registry on Windows 2008

- The first step is to ensure that the counters are not disabled in the registry. To achieve this, first, check the following registry location:

  HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\%servicename%\Performance

  Here, **%servicename%** represents any service with a performance counter. For example: PerfDisk, PerfOS, etc.

- There may be registry keys for "**DisablePerformanceCounters**" in this location. This value should be set to 0 for a performance counter to be enabled. If the value is anything other than 0, the counter may be disabled. Typically, a value of *1* means the counter is disabled. The value *2* means that the 32-bit counter is disabled. The value *4* means that the 64-bit counter is disabled.

Manually re-building all performance counters on Windows 2008

- Login to the target Windows host.
- Go to the command prompt and issue the following commands for rebuilding the counters. Press the **Enter** key on your keyboard after each command:

```
cd c:\windows\system32
lodctr /R
cd c:\windows\sysWOW64
lodctr /R
```

- Then, for resyncing the counters with Window Management Instrumentation (WMI), issue the following command:

```
WINMGMT.EXE /RESYNCPERF
```

- Stop and restart the Performance Logs and Alert services.
- Stop and restart the Windows Management Instrumentation Service.
- Create a new Data Collector Set (do not use an existing Data Collector Set). The steps in this regard are as follows:
- In the Windows Performance Monitor navigation pane, expand **Data Collector Sets**, right-click **User Defined**, point to **New**, and click **Data Collector Set**. The Create new Data Collector Set Wizard starts.
- Select the **Create manually** option and click **Next**.
- Select the **Performance Counter Alert** option and click **Next**.
- Click **Add** to open the **Add Counters** dialog box. When you are finished adding counters, click **OK** to return to the wizard.
- Define alerts based on the values of performance counters you have selected.
- From the list of Performance counters, select the counter to monitor and trigger an alert.
- From the **Alert when** drop-down, choose whether to alert when the performance counter value is above or below the limit.
- In the **Limit** box, enter the threshold value.
- When you are finished defining alerts, click **Next** to continue configuration or **Finish** to exit and save the current configuration.
- After clicking **Next**, you can configure the Data Collector Set to run as a particular user. Click the **Change** button to enter the user name and password for a different user than

the default listed.

Note that if you are a member of the Performance Log Users group, you must configure Data Collector Sets you create to run under your own credentials.

- Click **Finish** to return to Windows Performance Monitor.
- To start the Data Collector Set immediately and begin saving data, select **Start this data collector set now**.

31. *In my environment, I find that the Disk Space test and Disk Activity test report 'Not Available' and 'Unknown' respectively for a particular drive, 'G:\'. What is strange is that these tests report valid measures for all the other disk drives, except 'G:\'. What is the issue and how do I resolve it?*

This could be a permission issue. If the eG service is executed without specific user privileges, then the permissions in some drives could restrict access to metrics; in this case, the permissions configured for G:\ deny the eG service access to metrics. To solve the issue, first associate the service with a specific user and then execute the tests.

32. *I managed a Windows 2003 host as an SNMP Generic server, and configured all its tests using the community string, 'public'. I know for a fact that the SNMP service has been installed and is currently running on the Windows 2003 host, but in spite of this the tests are not executing. What could be wrong?*

Typically, the SNMP-based tests that are executed by the eG agent perform an 'SNMP walk' on the host's MIB to extract the relevant statistics. To perform the SNMP walk, the tests are configured with an SNMP port and community string. While 'public' is the default community string for a Windows 2000 host, no community string is set by default at the time of installation of the SNMP service on a Windows 2003 host. However, you have configured your tests to use a 'public' community string that does not exist - therefore, SNMP walk could not be performed, and subsequently, your tests failed. You are hence presented with the following options:

- Manually configure the SNMP service on your host to use the 'public' community string, or,
- Manually configure the SNMP service on your host to use any community string, and then reconfigure your tests to use the same string

Either way, the following procedure needs to be adhered to:

- Click **Start**, point to **Control Panel**, point to **Administrative Tools**, and then click **Computer Management**.
- In the console tree, expand **Services and Applications**, and then click **Services**.
- In the right pane, double-click **SNMP Service**.
- Click the **Security** tab (see Figure 47).

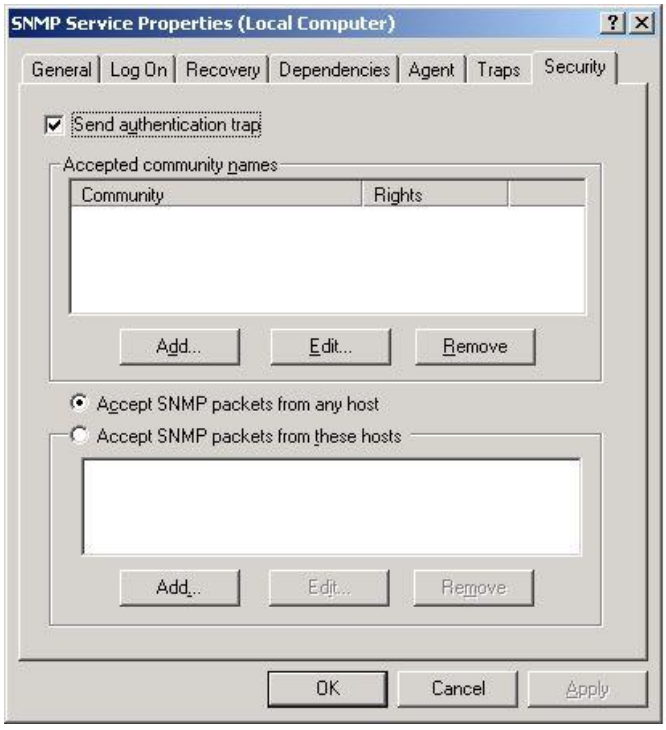


Figure 47: The Security tab

- Select the **Accept SNMP packets from any host** option in Figure 47.
- Next, to add a community string, under **Accepted community names**, click **Add**. Figure 48 will then appear wherein you can specify a community string. Here, you have the option of providing 'public' or any community string of your choice. Note that the community string is **case-sensitive**.

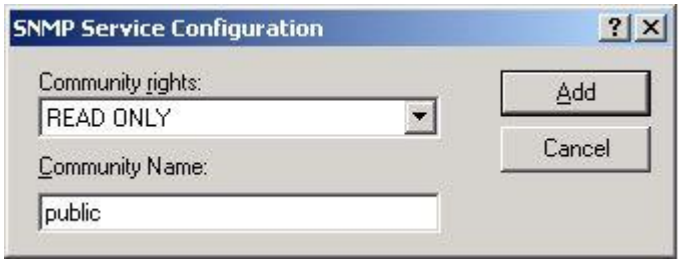


Figure 48: Adding 'public' as the community string

- Click **Add** in Figure 48. When Figure 49 appears, click **Apply** and **OK**.

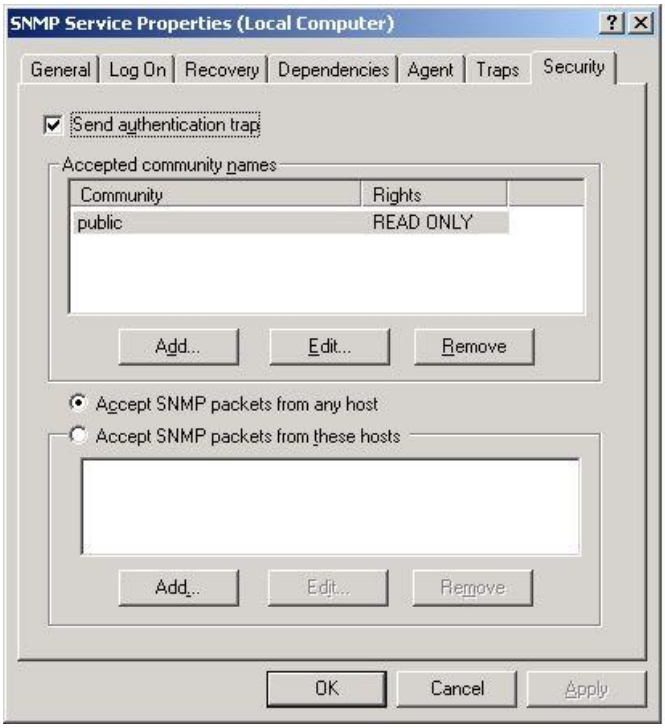


Figure 49: The 'public' community string has been added

Note:

If you choose to provide a different community string other than 'public', then ensure that the tests are reconfigured to use that community string while performing an SNMP walk.

33. Whenever the eG manager tries to send an email alert, the following error gets logged in the error log.

nested exception is:

javax.mail.SendFailedException: 550 5.7.1 Unable to relay for <username>@<company>.com;

Why does this happen, and what needs to be done?

The possible causes for such an exception and the recommended recourse are discussed hereunder:

- Many SMTP servers use some sort of protection against email spamming. If such an SMTP server is in use in your environment, then it will not allow relaying unless you are sending the email from a trusted IP. Therefore, make sure that your email server is setup to allow SMTP relaying from trusted local internal IP addresses. Some mail servers require authentication before sending emails. In this case, use the SMTP or java authentication methods.

- Your Microsoft Exchange server could be configured to block SMTP relaying. If so, ensure that it is reconfigured to allow SMTP relaying either for trusted IP addresses, or

for users that are authenticated.

- Your mail server could disallow specific mail accounts from sending mails to external email addresses. If this is the case, make sure that your email administrator has configured your IP address / account to send internal and external emails.

- Your SMTP server could require the mail sender to login and check his/her POP3 email at least once on the given IP before permitting that user to send SMTP mail from that IP. Once the POP3 email is checked using a valid user/password, the host's IP is then automatically added to a safe list on the server. If this is the case, then check your POP3 email first before sending SMTP email from a new computer. If your email server allows SMTP relaying only if you log in and check email within the last 1 hour/day, then you will have to use the POP3 authentication method to send email.

- Relaying denied is a common safety measure used by SMTP servers when a certain email address and its mail server are put on a blacklist for email relay spam violations. Many honest mail servers get attached to this list because someone broke through and used their server to relay spam. There are various blacklists available and SMTP servers may subscribe to none, a few or many of these lists. In your case therefore, the SMTP server that is being used could be subscribing to a blacklist that contains the email address(es) to which alert mails are to be sent.

34. What does the message: "No measures found for this test in the database", imply? It appears when I click on a few tests in the eG monitoring console.

This message appears whenever the agent is unable to execute a test and report measures to the eG manager. If the test configuration is incorrect, then an agent will not be able to execute the test and retrieve the desired metrics. Therefore, while configuring a test, always ensure that valid values are passed to the test parameters.

35. I find that the values for CPU usage as depicted by the graph and by the detailed diagnosis are different for the same processor? Why is it so?

The reasons for the difference are:

- System Details test monitors the CPU usage of the box continuously. What is reported by this test is the average CPU usage of the system over the last 5 minutes.

- Detailed diagnosis is a more expensive task that is run by the eG agent less frequently than the tests. The goal here is to provide an idea of where the problem may lie. For System Details test, the detailed diagnosis will involve detecting what processes are running and monitoring the CPU usage for each process. If there are 100s of processes running (most likely on a busy server), collecting this information continuously can generate a lot of load on the system being monitored. Hence, detailed diagnosis provides a "snapshot" of what activity is going on on the server. This is run for a few seconds and the top processes are reported.

- Since the System Details test and its detailed diagnosis do not run at the same time

period, and the results are not computed from the same set of operating system hooks, you will not be able to exactly add up the results of the detailed diagnosis and match them to the results of the test itself.

36. *Due to some reason, I was forced to terminate an agent uninstall process, midway. Soon after the incomplete uninstall, I tried to install an agent on the same box. While doing so, I encountered the following error message: "The InstallShield Engine (iKernel.exe) could not be launched. Access is denied.". Owing to this error, I could not proceed with the agent install. Why did this message appear, and how do I install the eG agent now?*

Typically, the agent installation process creates a file named **iKernel.exe** in the **C:\Program Files\Common Files\InstallShield\Engine\6\Intel 32** directory. If the eG agent had been uninstalled completely, then the **iKernel.exe** would have been removed automatically. In your case however, since the agent uninstallation was incomplete, the **iKernel.exe** would continue to exist in the aforesaid directory, thus preventing you from installing an agent on the same box. To proceed with the agent installation therefore, you will first have to manually remove the **iKernel.exe** from the **C:\Program Files\Common Files\InstallShield\Engine\6\Intel 32** directory.

37. *How do I change the eG manager's time settings to reflect DST (day-light savings time)?*

The eG Time Zone feature will automatically take care of DST provided the eG manager system's Time settings has the Daylight Savings Time Settings enabled.

To enable/check the eG manager system's DST settings, follow the procedure explained below:

- Stop the eG Manager.
- Click on the Date and Time settings in the Task bar.
- Click on the Time Zone Tab.
- Select the Eastern Time or Central time settings from the drop-down time list.
- If the option "Automatically adjust clock for daylight saving changes" is not enabled, enable it, and then apply the changes; this ensures that the DST option is automatically enabled for all time zones
- Change the time zone back to your original time zone.
- Start the eG Manager.

38. *All my perfmon-based tests stopped working. When I checked the Windows Performance Monitor, I found that the performance objects and counters show up as 'numbers' and not 'text' (see Figure 40).*

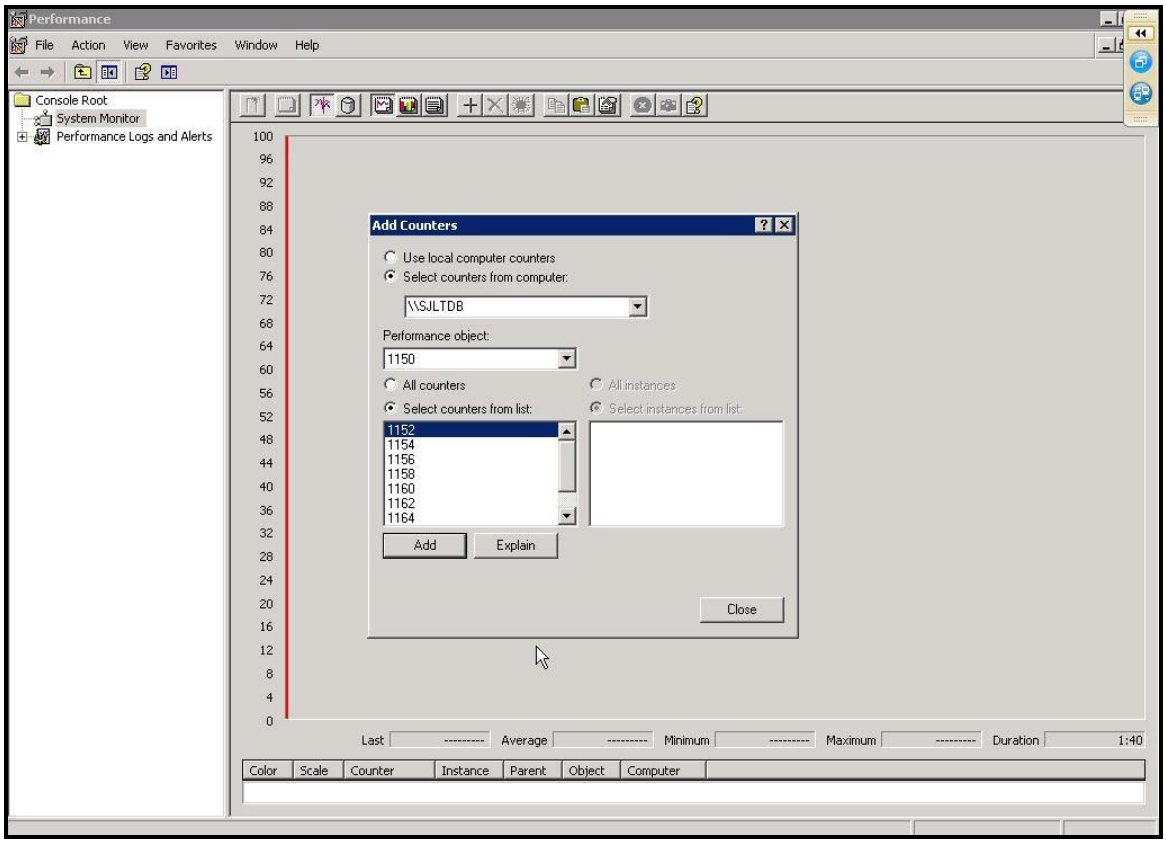


Figure 50: Performance objects and perfmon counters in numbers

How do I resolve this issue?

To resolve this issue, do the following:

- Login to a Windows host other than the one hosting the problem perfmon counters.
- Copy the **PerfStringBackup.ini** file from the **C:\Windows\System32** folder on that host to the **C:\Windows\System32** folder on the problematic Windows host.
- Then, go to the command prompt of the Windows box where the performance objects and counters show up as numbers.
- Issue the following command at the prompt: **lodctr /r: PerfStringBackup.ini**

39. All tests that use WMI scripts (eg., event log-related tests) to collect metrics have been failing in my environment, after throwing the following exception:

"Microsoft VBScript runtime error: Out of memory:" or " Not enough storage is available to process this command"

What do I do?

When you encounter such an exception while monitoring a Windows 2003 host, follow the steps below on that host:

- Login to the agent host.
- Go to the command prompt and run the following commands, one after another:

  wmiadap /f

  net stop winmgmt

  net start winmgmt

When you encounter such an exception while monitoring a Windows 2008 host, follow the steps below on that host:

- Login to the agent host.
- Go to the command prompt and run the following commands, one after another:

  winmgmt /resyncperf

  net stop winmgmt

  net start winmgmt

40. My Event Viewer is crowded with 'information' events indicating the starting / stopping of the WMI Performance Adapter. These events stop occurring once I stop the eG agent. Why does this happen and what do I do?

If the **WMI Performance Adapter** service is set to start manually, then, three events of type 'information' will appear in the Event Viewer. These events occur every time the **Performance Data Helper** (PDF.dll) is used by an application from a Windows service. To avoid these events from occurring, you need to change the start mode of the **WMI Performance Adapter** service to 'Automatic'.

41. I monitor a virtualized environment - what is the eGRemote Execution service inside the VM and how do I delete it?

While monitoring a virtualized environment in an 'agentless manner' using a remote Windows agent, a **eGRemote Execution** service is automatically created by that remote agent on each of the Windows VMs it monitors - this service enables the remote agent to execute certain key scripts/executables on the Windows VM for collecting the *inside view* metrics. To uninstall this service, an executable named **ServiceInstaller.exe** should be made available on the Windows VM. Typically, every eG agent deployed on a Windows host is bundled with a **ServiceInstaller.exe**. Therefore, login to the Windows host on which the remote agent operates, and copy the **ServiceInstaller.exe** from the **<EG_AGENT_INSTALL_DIR>\bin** directory on the agent host to any location on the Windows VM. Then, follow the steps given below:

- Next, login to the Windows VM.
- Go to the command prompt of the VM, switch to the directory that contains the

ServiceInstaller.exe, and run the following command:

ServiceInstaller.exe uninstall eGRemoteExec

This command uninstalls the ***eGRemote Execution*** service.

- Then, delete the **eGRExecSvc.exe** in the **C:\Windows** directory of the VM.
- Finally, delete the **C:\Windows\eg** folder on the VM.

42. The Disk Space test failed on a Windows 2008 R2 server in my environment. When I tried running the VB script, eg_diskspace.vbs, from the command prompt, I received the following error message:

```
Input Error: There is no script engine for file extension ".vbs"
```

Why does this happen and what do I do?

This system error occurs because of an incorrectly registered VBScript.dll. To fix this, follow the steps below:

- Follow the Start -> Run menu sequence on the target box.
- In the **Run** dialog box that appears, type the following command:

  regsvr32 %systemroot%\system32\vbscript.dll
- Click **OK** in the **Run** dialog box.
- If the command executes successfully, the following message will appear:

  ```
  DllRegisterServer in C:\Windows\system32\vbscript.dll succeeded
  ```
- Now, open the command prompt and run the VB script again.

43. The configuration tests related to the Tomcat server 6.0 are not reporting metrics. When I checked the error_log, I found the following error message logged therein:

```
tomcat-users.xml has invalid encoding "cp1252" when using endorsed
library

xercesImpl.jar when tomcat is run for the first time.
```

Why does this error occur and what do I do?

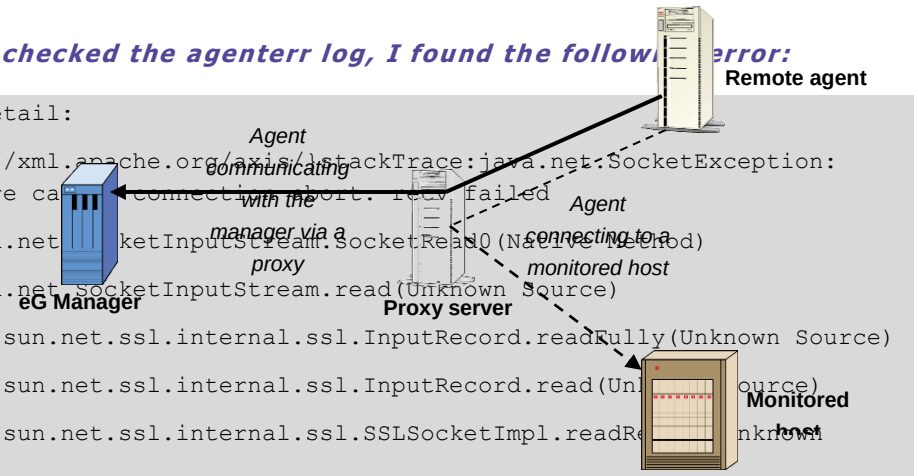
This is owing to a bug in Tomcat 6.0.18. Till Tomcat 6.0.16, the default encoding for the **tomcat-users.xml** file was **utf-8**. This was changed to **cp1252** in Tomcat 6.0.18; this change is causing the above-mentioned problem.

The workaround for this problem is to deploy a copy of **tomcat-users.xml** file with the encoding set to **utf-8** to the conf directory before tomcat is attempted to be started.

44. I have a remote agent that is not reporting metrics. The agent is up and running, and is communicating with the eG manager via a proxy server.

When I checked the agenterr log, I found the following error:

```
faultDetail:
{http://xml.apache.org/axis/}stackTrace:java.net.SocketException:
Software caused connection abort: recv failed
at java.net.SocketInputStream.socketRead0(Native Method)
at java.net.SocketInputStream.read(Unknown Source)
at com.sun.net.ssl.internal.ssl.InputRecord.readFully(Unknown Source)
at com.sun.net.ssl.internal.ssl.InputRecord.read(Unknown Source)
at com.sun.net.ssl.internal.ssl.SSLSocketImpl.readRecord(Unknown
Source)
.....
.....
```



Why does this error occur and what do I do?

If an eG agent in your environment has been configured to use a proxy server for communicating with the eG manager, then such an agent uses the same proxy server for collecting metrics from the target servers as well (see

Figure 51).

Figure 51: Agent communications via a proxy server

The error above occurs when the agent is unable to use the proxy server to collect metrics.

To resolve this issue, you can reconfigure the eG agent to bypass the proxy server while establishing HTTP/S connections with target hosts. This way, you can ensure that the agents continue to interact with the eG manager via a proxy, but do not use that proxy for monitoring components. To perform this reconfiguration, follow the steps below on each Windows agent that is monitoring via the proxy server:

- Edit the **debugoff.bat** file in the **<EG_INSTALL_DIR>\lib** directory.
- Search for the string **-Djava.class.path**
- Insert the following line before the above-mentioned string:

  -Dhttp.nonProxyHosts="<Pipe-separated IP/host names of target hosts that are to be monitored by this agent directly and not via a proxy>"

  For instance, if the eG agent should connect to the target hosts, *192.168.10.20* and *192.168.10.144*, directly, then you have to insert the following line before the -**Djava.class.path** string:

  -Dhttp.nonProxyHosts="<192.168.10.20|192.168.10.144>"

  On the other hand, if the eG agent should not use the proxy server for any internal communication with any host in its internal network, then your entry would be as follows:

  -Dhttp.nonProxyHosts="<192.168.10.>"*, where the pattern, *192.168.10.**, refers to all hosts within the private network.

  After the insertion, the whole line should read as follows:

  -Dhttp.nonProxyHosts="<Pipe-separated IP/host names of target hosts that are to be monitored by this agent directly and not via a proxy>" -Djava.class.path=%classpath%

- Save the file.
- Execute the **debugooff.bat** file and start the agent.
- Then, edit the **debugon.bat** file in the **<EG_INSTALL_DIR>\lib** directory, and update it with the changes discussed in steps 2-4 above. Save the file.
- Finally, start the agent in the debugon mode as well.

Note:

In order to configure a Linux, AIX, or HPUX agent to connect to monitored targets directly (and not via a proxy), you will have to edit the **start_agent** script (in the **/opt/egurkha/bin** directory), make the changes discussed in steps 2 - 4 above, and save the file.

In order to configure a Solaris agent to connect to monitored targets directly (and not via a proxy), you will have to edit the **starta** script (in the **/opt/egurkha/bin** directory), make the changes discussed in steps 2 - 4 above, and save the file.

Finally, restart the respective agents.

45. The PCoIP Session – VM test is failing on many virtual desktops. Why does it happen and what do I do to make it work?

The PCoIP Session test uses PCoIP related Perfmon objects. If the Perfmon objects are missing inside a few desktops, the test will not run in those desktops. In such cases, you may want to register the Perfmon objects again on the problematic virtual desktops. For this, at the command prompt of each of these Windows desktops, run the following command as *administrator*:

C:\Program Files\Common Files\VMware\Teradici PCoIP Server\pcoip_perf_installer.exe /s "C:\Program Files\Common Files\VMware\Teradici PCoIP Server\pcoip_perf_provider32.dll".

46. I wanted to configure the location of zones using Zone Maps, but I am unable to view the Zone Maps in the eG UI. What could be the reason and what do I do?

One of the common reasons for zone map failures is the deactivation of the **Google Maps API key** that governs the display of the zone map. When faced with a zone map failure therefore, you can do one of the following:

- Activate the **Google Maps API key** that is associated with your eG installation. Typically, this key is bundled with the eG manager. To activate this key therefore, please contact **support@eginnovations.com**.
- Alternatively, you can create your own **Google Maps API key** and assign it to the eG manager. For this, follow the steps below:

- First, you need to sign up to acquire a Google Maps API key. For that, first, go to the URL: http://code.google.com/apis/maps/signup.html.
- Read the terms of usage in the page that appears, and then scroll down until you come to the bottom of the page.
- Accept the terms by selecting the I have read and agree with the terms and conditions check box.
- Then, in the **My web site URL** text box, specify the IP address or domain within which the integration, once enabled, will need to work. If you want both the administrative and monitor interfaces of eG Enterprise to integrate with the Google Map API, provide the URL to connect to the eG manager in the **My web site URL** text box. For example, if the eG manager executes on *192.168.10.12:7077*, then, your URL specification in the above case will be: **http://192.168.10.12:7077/**. On the other hand, if you want Google maps to be available only to the admin console, then your specification would be:

http://192.168.10.12:7077/final/admin. Similarly, if you want the Google maps to be available only while monitoring the target infrastructure, then the URL would be: **http://192.168.10.12:7077/final/monitor**.

- Finally, to generate the API key, click on the **Generate API Key** button in the page. You will then be requested to sign in using the credentials of your Google account.

> **Note:**
>
> A Google account is a key pre-requisite for signing up for a Google Map API key.

- Upon successfully signing in, a page appears displaying the Google Map API key. Make a note of the key, and then close the browser.
- Then, login to the eG administrative interface as *admin* with password *admin*.
- Follow the Configure -> Settings menu sequence.
- In the **SETTINGS** tree that appears, navigate to the **Other Display Settings** sub-node under the **Monitor Settings -> General** node.
- Enter the API key you generated earlier in the **Google map key** text box.
- Click **Update** to save the changes.

47. Whenever I try to access the zone map in the eG monitoring console, I receive a stack overflow error. Why does this happen and what do I do?

This can happen if the Google Maps API key you are using is in a deactivated state presently. You will have to activate the key in order to access zone maps. For this, follow the steps below:

- Connect to the URL: https://code.google.com/apis/console
- Login using a valid Google account. Typically, this should be the google account using which the Google Map API key was generated. Since this key is set by default in eG, use eG's default google account – i.e., *eginnovations@gmail.com* – to login.
- Once the **Google apis** console opens, click on **Services** in its left panel to view the list of services provided by Google and their current status. For Google Maps, we are using the "**Google Maps API v3**" service. If this service is set to **OFF** it means that the service is deactivated. To activate the service, set it to **ON**.

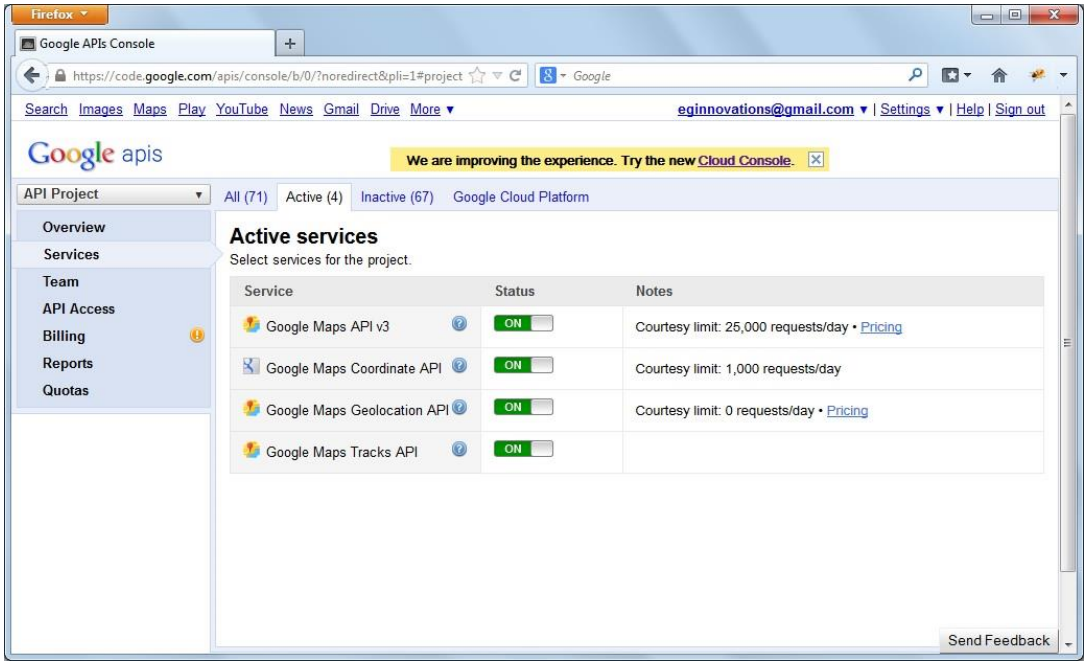


Figure 52: Activating the Google Map API v3 service

- To view the API key associated with the Google account, click on **API Access** in the left panel. The API key, when it was activated, and who activated it will be listed here. After activating the key, switch to this page to check whether the activation date is updated.

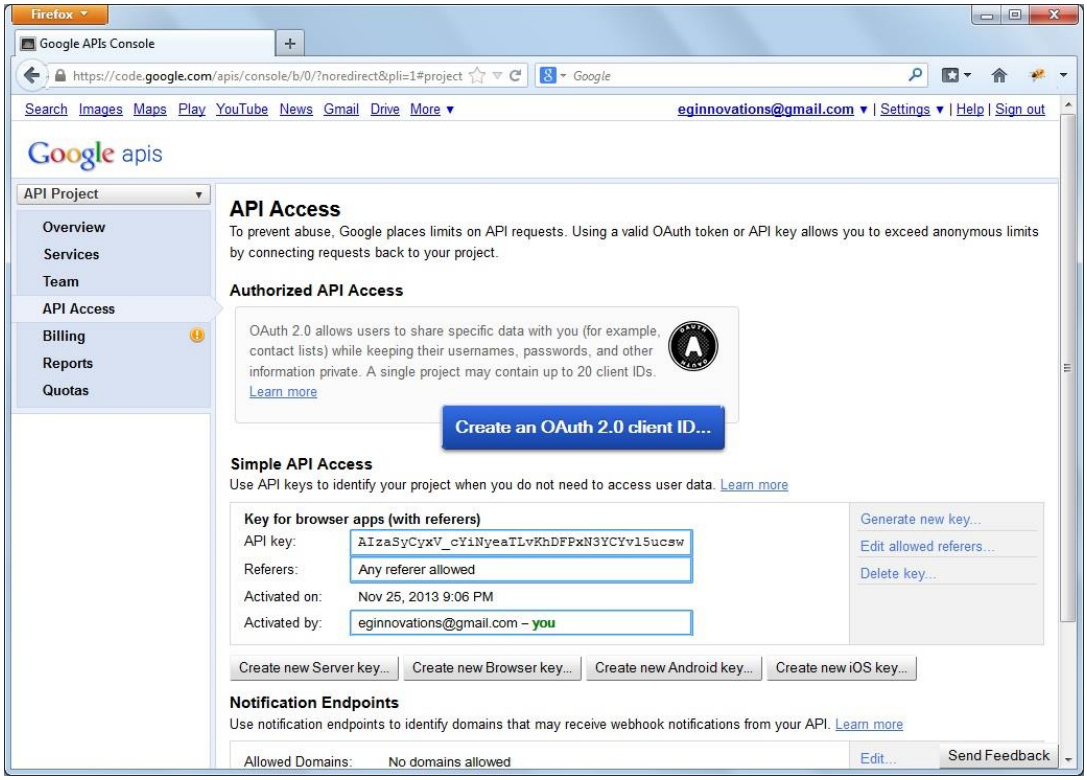


Figure 53: Viewing the details of the Google map API key

48. The Desktop ICA Channel test mapped to the VMware VDI component is not visible in the eG monitoring console. Why did this happen and what do I do to make it appear?

If this happens, then first check whether the "ICA Session" Perfmon object is available on the Windows 7 VMs. If not, then the test will not work.

49. The C drive on my Windows system filled up rapidly. Further investigation revealed that the Windows temp directory has grown substantially within a short span of time. When I checked the contents of this directory, I found numerous 'cab' files created therein. Could these files have been created by the eG agent on that host?

The CAB-xxxx files that you see in the **C:\Windows\Temp** folder are some temporary files created by different Windows Operations, like installing Updates. **The eG agent does not create these files**.

While you can safely delete these files, deleting them may cause them to regenerate after a while. To avoid this, first check the **C:\Windows\Logs\CBS** folder. You will find many log files and some cab files there. Pick the oldest log file therein and delete it; alternatively, you can delete all the log files created in the **CBS** directory. Next, open the **C:\Windows\Temp** directory and delete each of the cab files it contains.

50. The Processes test appears to be taking too much CPU on the AIX servers in our environment. I have also noticed the test causing core dumps. Why does this happen and what do I do to contain this rapid and excessive CPU usage?

By default, the **Processes** test runs the built-in *tprof* command on AIX to collect top CPU consuming processes. This command can be very CPU-intensive. To reduce the CPU usage on your AIX servers therefore, you may want to use the resource-thin *ps* command instead. For this, set the **USEPS** flag of the **Processes** test to **Yes**.

51. I have turned on the USEPS flag of Processes test to reduce the CPU consumption on my AIX server. But I find that the 'ps' command is reporting inaccurate values for CPU and memory usage of configured processes. These usage metrics have now flatlined to 1.5%! Do I now have to turn off the flag and risk a CPU contention?

There is a fundamental difference between PS command and tprof command. TProf is a monitoring tool command like "top" whereas PS command is a snapshot command. PS command calculates the data for the entire life time of the process consuming the CPU and can give correct results after a period of time (meaning it needs lot of data to arrive at an estimated value as long as the process does not die over a period of time). What PS says is that the process is consuming 1.5% of the CPU time in the total uptime of the machine.

If the values reported by PS are not agreeable to you, then you can turn off the **USEPS** flag and switch to the *tprof* command. However, remember that *tprof* will spawn numerous trace sessions, which can result in a CPU contention on your AIX server.

52. I am using an IE 11 browser. Using this browser, I tried to navigate from the SERVER LIST page of the eG monitoring console to the layer model of a particular server. But while doing so, only a blank page appeared. Why did this happen and what do I do?

To address this issue, change the document mode of the IE 11 browser to *Edge.* The *Edge* mode provides the highest support available for modern standards. Typically, when upgrading from IE 8 to IE 11, the default mode set is *7,* due to which latest standards are not supported. This is why the browser is unable to render the layer model page.

To change the document mode, open the IE 11 browser and press F12 on your keyboard to launch the **DOM Explorer**. Then, switch to the **Emulation** tab and select *Edge* from the **Document mode** drop-down.

53. We have attempted to deliver the eG mobile app via Citrix XenMobile. Unfortunately, we have run into issues with both iOS and Android devices. In iOS, we can wrap the app using the XenMobile MDX toolkit, however the app crashes when launched on an iOS device. In Android, we get an error when trying to wrap the application with the MDX toolkit. What do we do?

You can use either of the following approaches for wrapping the eG mobile app for XenMobile:,

- Wrap the mobile app inside the MDX toolkit, and upload it with the XenMobile controller. If this is done, then the app will be distributed as an ad-hoc app from Xen Mobile .

- Create a pointer inside MDX for the mobile app that resides in play store. Then, upload the MDX file to AppController, and install the app via Worx Home on the mobile device, The app will now get installed via play store.

54. I am using IE 11 browser on Windows 7 desktop for accessing the eG management console. Every time I click on the 'Admin' or 'Monitor' tab pages in the console, the browser editor throws the following error:

CSS3111: @font-face failed encountered unknown error

What is the problem and how do I resolve it?

This error is specific to the IE browser. IE has a problem finding the .eot file if the family name is different from the full name of the font. For instance, if the font name is *bello-script* and font family is *bello,* then this error will occur. Make sure that the font name and font family name are the same to resolve this issue.

55. I am monitoring a Citrix XenServer 6.5 in my environment. When doing so, I noticed that the 'System Details – VM' test is reporting incorrect values for the 'Free memory in VM' measure on multiple Windows VMs. What do I do?

eG retrieves performance data from Windows VMs using the **PerfLib** libraries exposed in one of the major OS binary "AdvAPI32.dll". If the performance library detects any problems with any of the performance counters, it will automatically disable the source of the library. An example would be a library which kept generating exceptions / crashes. So, if certain performance counters, like the *Free memory in VM* measure, are reporting incorrect values, first check the event logs on the Windows VM to determine whether any PerfLib warnings/errors have been captured. If so, then rebuild the performance counters.

56. I can see that the HISTORY OF ALARMS page in the eG monitoring console does not display more than 15 records in one page. Is there some means by which I can increase this record count per page?

Yes. The number of problem events to be displayed per page of the **HISTORY OF ALARMS** page is governed by the *Row_multiplier* flag in the **eg_ui.ini** file (in the **<EG_INSTALL_DIR\manager\config** directory on Windows, or the **/opt/egurkha/manager/config** directory on Unix). Set this flag to any number to view that many events in a single page.

57. In My Dashboard, is it possible to show the detailed diagnostics for one particular descriptor? If so, how?

Yes. However, note that, when configuring the **Detailed Diagnosis** widget with the measure for which the widget needs to display detailed diagnostics, you will not be able to select a particular descriptor. This selection can be made at run time from the **Detailed Diagnosis** widget.

58. Disk Activity test on Linux fails to report metrics even after I granted sudo privileges to the eG install user. How do I resolve this issue?

If sudo does not work, then do the following:

- Login to the Linux host as root user.
- Go to the Shell prompt and run the following command:

setcap cap_net_admin+ep /usr/bin/python

If this command executes successfully, then */usr/bin/python* will be configured with the *net_admin* capability. This in turn empowers Linux to execute code run by non-privileged users.

59. Disk Activity test on Linux failed with the following error message: "sudo: sorry, you must have a tty to run sudo". How do I resolve this issue?

Such an error occurs if sudo on the target Linux host requires a tty. This is generally enforced by having *Defaults requiretty* in the */etc/sudoers*.

To resolve this issue, you can either disable requiretty globally or to a single command. To disable globally, do the following:

- Replace **Defaults requiretty** by **Defaults !requiretty** in your /etc/sudoers. This will impact your global sudo configuration.

To disable for the agent install user alone:

- Edit the /etc/sudoers file.
- *Defaults:<name of agent install user> !requiretty*

60. The Virtual Clusters test of a VMware vCenter server stopped reporting CPU utilization and Memory utilization measures, after the server was upgraded to v5.5 update 3. Why did this happen and what do I do?

Its typical for performance data to go missing once a vCenter server is upgraded to v5.5 update 3. This issue occurs if the vCenter Server database stored procedures are not upgraded correctly and prevent temptable stored procedures from executing successfully.

To resolve this issue:

- Stop the VMware VirtualCenter Server service.
- Take a complete backup of the vCenter Server database. Do not skip this step.
- Remove the affected stored procedures from the vCenter Server database:
    - Log into the SQL Management Studio.
    - Select the vCenter Server database and expand *Programmability > Stored Procedures.*
    - Delete these stored procedures:

process_temptable0_proc
process_temptable1_proc
process_temptable2_proc

    - Refresh the SQL Management Studio and confirm that the stored procedures are removed.
- Browse to the vCenter Server installation directory and locate the SQL scripts with the same names. For example: *process_temptable#_proc_MSSQL.sql*.
- Paste the contents of the updated stored procedure into the new query window and click **Execute**. You should see the message:

Command(s) completed successfully

- Execute each query to recreate the stored procedures.
- Refresh the SQL Management Studio and confirm that the stored procedures are recreated.
- Manually run the *process_temptable0_proc* stored procedure to move data into the vpx_hist_stat1 table.
- Verify a row change on vpx_hist_stat1 table.
- To verify row change on vpx_hist_stat1, manually run this SQL query:

  exec sp_spaceused vpx_hist_stat1 ;

61. Can eG monitor the hardware of an HP DL380 Gen9 box running a Citrix XenServer hypervisor?

Yes.

Though the XenServer API does not support hardware monitoring, eG can monitor the hardware of the server using SNMP.

You can try to get the snmpwalk for the OID **.1.3.6.1.4.1.232** from the ILO Management Card IP of that HOST.

If you are getting proper outputs when you run the snmpwalk command for the given base OID when it is run against the Management Card IP of that Host, then you can map all the HP ILO Hardware Tests to that component.

If you are not getting any outputs , then you would be required to install the HP Native Agent (HP INSIGHT AGENT) on that host . You can again try to get the snmpwalk for the same Base OID given above and if you get outputs, you can map the generic hardware tests and monitor the hardware of the host.

62. The System Dashboard for a VMware vSphere VDI server does not show System Uptime. However, the same is available in the System Dsahboard for the VMware vSphere ESX server. How do I make sure that the System Dashboard for the VMware vSphere VDI server also displays System Uptime?

For this, do the following:

- Edit the **eg_serverdashboard.ini** file (in the **<EG_INSTALL_DIR>\manager\config** directory).
- Append the following entry to the **[DASHBOARD_UPTIME_TESTS]** section of the file:

VmVdi_i_server=EsxUptimeTest

- Then, save the file.

63. What are Linux cores? Can eG agents be deployed on them?

. For example, Citrix XenMobile and Citrix NetScaler appliances which we are familiar with use Linux core and have a very limited interactive shell. They do not allow agents to be deployed on these appliances/operating systems. It is best to monitor these as network nodes or using the outside view of VMs.

64. Why does the HDX Users test of the Citrix NetScaler Insight component report a Bandwidth measure, the value of which is different from what is displayed in NetScaler Insight Center?

NetScaler Insight allows data to be collected in the following intervals only: last 5 minutes, last 1 hour, last 1 day and last month. The eG agent has been engineered to use the least interval which is last 5 minutes. This means that the eG agent collects data every 5 minutes from Insight Center, regardless of how frequently the test runs.

NetScaler Insight center on the other hand collects and plots the data every 1 minute. So while insight will have 60 samples for 1 hour, eG would have collected only12 samples in the last hour. This is why, the graph and data you see in Insight Center is different from what you see in the eG monitoring console

65. How do I know that WMI is corrupted? How do I fix a WMI corruption?

The WMI Repository "%windir%System32\Wbem\Repository" is the database that stores meta-information and definitions for WMI classes; in some cases the repository also stores static class data as well. If the Repository becomes corrupted, then the WMI service will not be able to function correctly. This could cause all or many of the WMI-based tests to fail in eG.

If WMI is corrupted, you can receive various errors depending on what activity was being accomplished at the time.

Below are a few scenarios/errors that indicate repository corruption:

- Unable to connect to root\default or root\cimv2 namespaces thru wbemtest. Fails returning error code 0x80041002 pointing to WBEM_E_NOT_FOUND
- When we open Computer Management and Right Click on Computer Management(Local) and select Properties, you get the following error: "WMI: Not Found" or it hangs trying connect
- 0x80041010 WBEM_E_INVALID_CLASS
- Trying to use wbemtest, it hangs

To confirm that WMI is broken, do the following:

- Launch the WMI MMC snapin by **Start -> Run ->** then enter **WMIMGMT.MSC**
- Right click **WMI Control (Local)** and click **Properties**.
- If WMI is working properly then it will show that Good Properties. If you **see Invalid class** then your WMI is not working correctly.

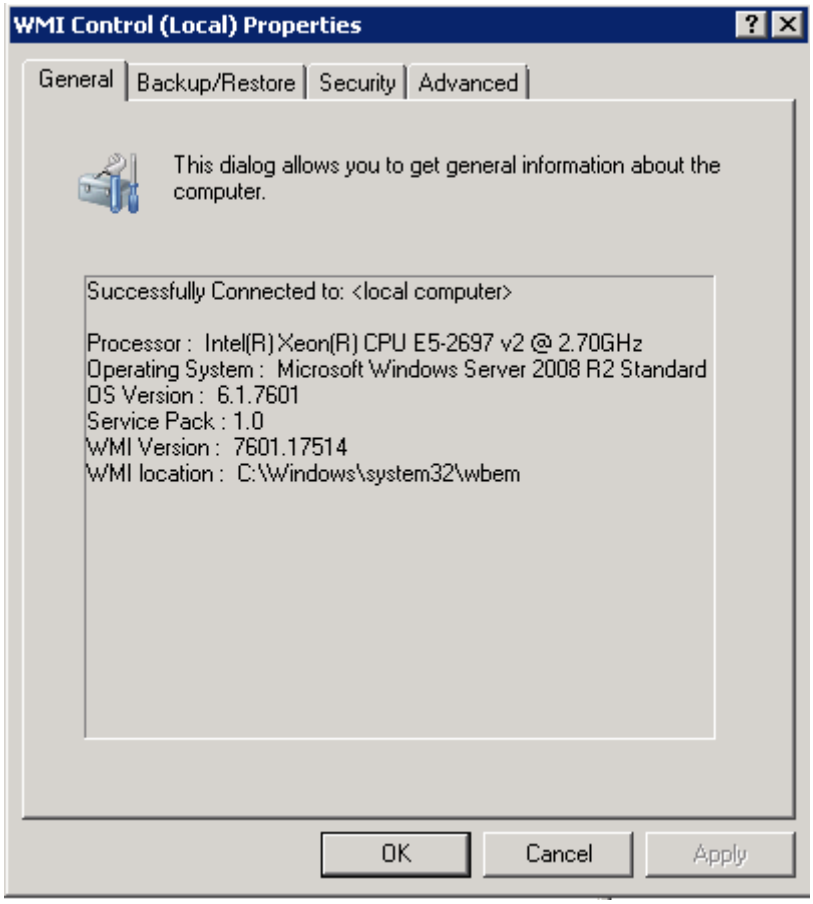


Figure 54: Good properties

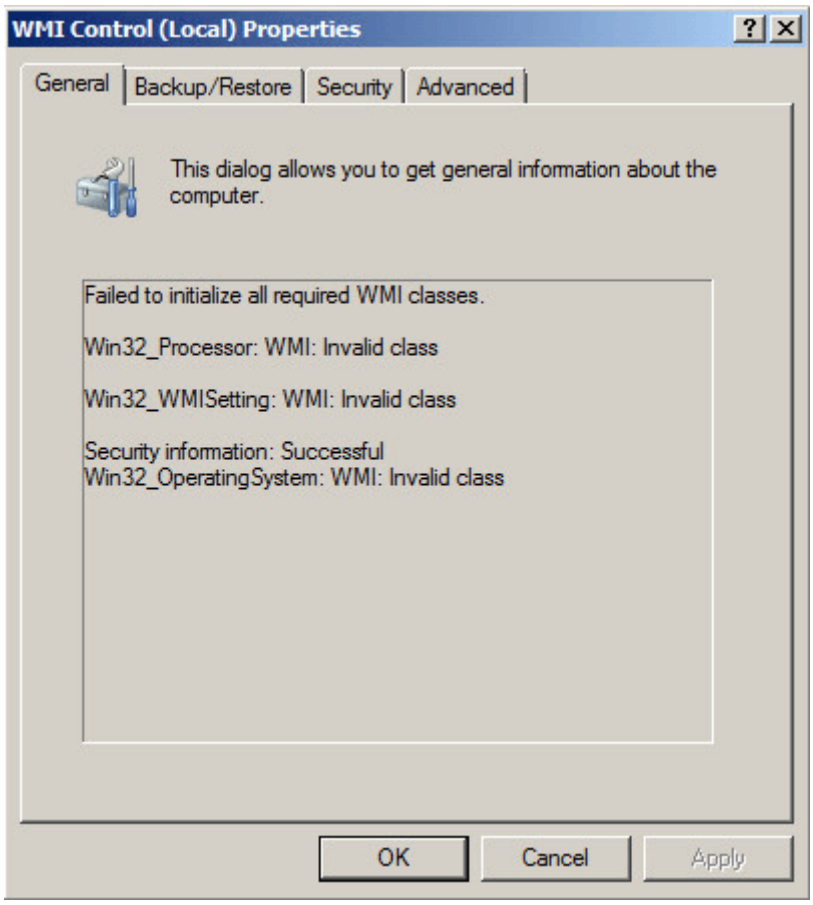


Figure 55: Bad properties

To resolve this, try one of the following actions:

- Re-register all of the dlls and recompile the .mofs in the wbem folder and re-register WMI Service and Provider. You can use the following script by saving to txt file then renaming to .bat and running from command prompt with admin right and changing focus to following directory: C:\Windows\System32\Wbem.

```
@echo off

sc config winmgmt start= disabled

net stop winmgmt /y

%systemdrive%
cd %windir%\system32\wbem

for /f %%s in (‘dir /b *.dll’) do regsvr32 /s %%s

wmiprvse /regserver

winmgmt /regserver

sc config winmgmt start= auto

net start winmgmt

for /f %%s in (‘dir /s /b *.mof *.mfl’) do mofcomp %%s
```

- Reboot the machine and test WMI.
- Next, check the repository for consistencies. For Windows Vista, Windows 7, Windows Server 2008, and Windows Server 2008 R2, you can run the following command from a command prompt:

  winmgmt /verifyrepository from a command prompt

- If repository is found to be inconsistent, then run the following command from the elevated command prompt:

Winmgmt /salvagerepository

Note that this command will take the content of the inconsistent repository and merge it into the rebuilt repository if it is readable.

- If the above doesn't work, then run:

Winmgmt /resetrepository

Note that this will reset repository to the initial state when the OS was first installed

- If /salvagerepository or /resetrepository does not resolve the issue, then manually rebuild repository. The steps to be followed in this regard are as follows"
  - Change startup type to Window Management Instrumentation (WMI) Service to disabled
  - Stop the WMI Service; you may need to stop IP Helper Service first or other dependent services before it allows you to stop WMI Service
  - Rename the repository folder: C:\WINDOWS\system32\wbem\Repository to Repository.old
  - Open a CMD Prompt with elevated privileges
  - CD windows\system32\wbem
  - for /f %%s in ('dir /b /s *.dll') do regsvr32 /s %%s
  - Set the WMI Service type back to Automatic and start WMI Service
  - cd /d c:\ ((go to the root of the c drive, this is important))
  - for /f %%s in ('dir /s /b *.mof *.mfl') do mofcomp %%s
  - Reboot the server
- Finally, install latest hotfixes for WMI as they can help prevent issue from recurring. If you continue to have recurring WMI repository corruption issues on same machine, please engage a Microsoft Support Engineer for further troubleshooting and assistance.

Alternatively, you can also do the following:

- Download the **Microsoft WMIDiag Tool**. It will analyze WMI and give you a report with any issues it finds.
- When you run the downloaded .EXE it will ask you where to extract the files. Once extracted right click the **WMIDiag VBScript** and click **Open with Command Prompt**.
- Once complete you will get a text file of the results. Here you should be able to narrow down the cause of your WMI issue. The sample results of Figure 56 indicates MOF registration errors.

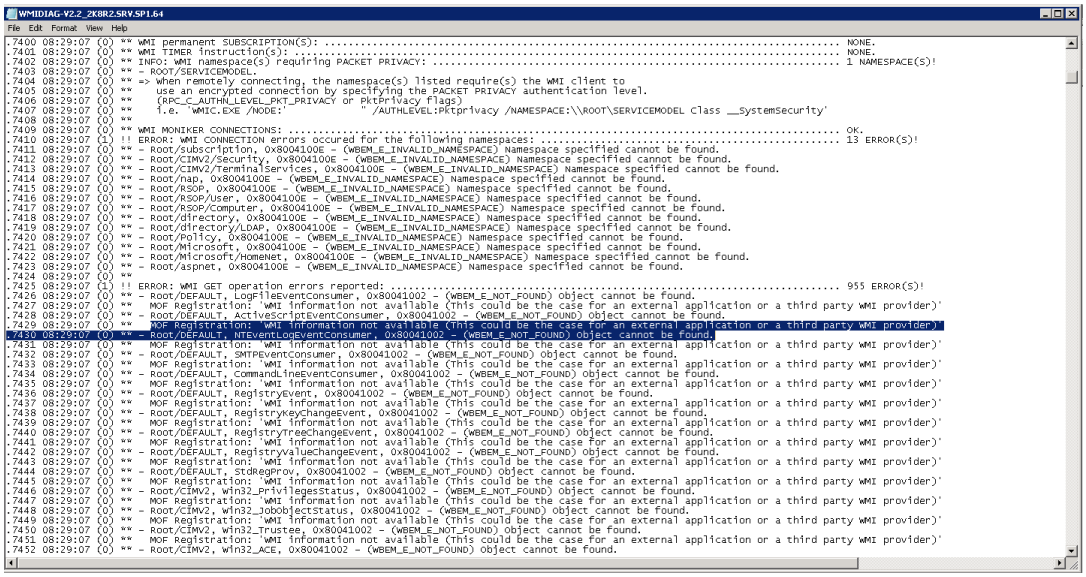


Figure 56: Results of the WMIDiag VBScript indicating MOF errors

- To resolve MOF Registration errors the following commands need to be ran from an elevated command prompt. It will reregister all .MOF files with WMI.

```
CD C:\Windows\System32\WBEM

dir /b *.mof *.mfl | findstr /v /i uninstall > moflist.txt & for
/F %s in (moflist.txt) do mofcomp %s
```

- Once finished check **WMIMGMT.MSC** to see if it is populating the Properties correctly.

.

66. I have configured my gmail account for receiving email alerts. But no alerts could be sent to this account, as I received a 'Sign-in attempt prevented' email from Google mail. Why did this happen and what do I do?

Google increased the security checks performed when users log in. These additional checks will ensure that only the intended user has access to their account, whether through a browser, device or application. These changes will affect any application that sends a username and/or password to Google.

In summary, if any application currently uses plain passwords to authenticate to Google, It is encouraged to switch to OAuth 2.0 to minimize user disruption. Google supports **OAuth 2.0** as the recommended authentication mechanism for all of its APIs.

OAuth is an open standard for authorization, commonly used as a way for Internet users to log into third party websites using their Microsoft, Google, Facebook or Twitter accounts without exposing their password.

To get eG to work, disable OAuth2.0. For this, follow the steps below:

- Login to google email account
- Move to **My Account** option and in the **Sign in & Security** option turn on **Allow less secure apps**.

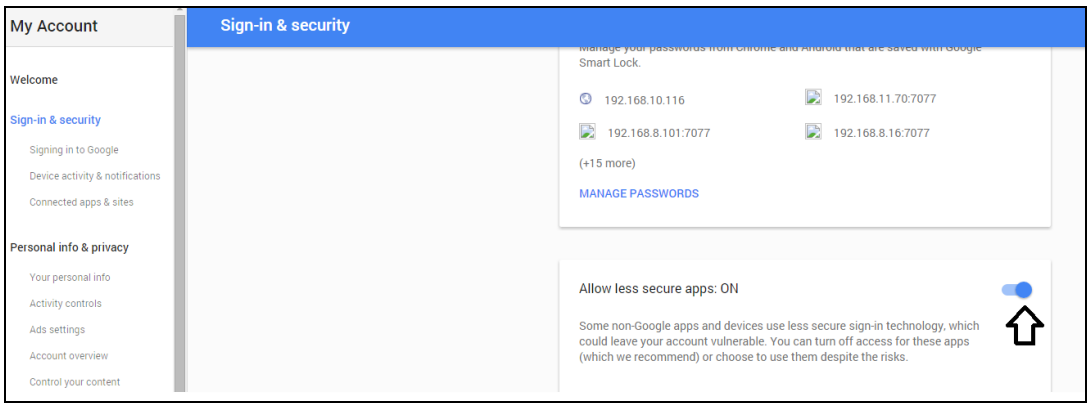


Figure 57: Disabling the OAuth standard

67. Is there a overhead difference between using an eG VM Agent to obtain the 'ínside view' of a VM and remotely connecting to a VM for 'inside view' metrics collection? If so, why?

Yes – there is an overhead difference between putting a small VM agent on a VM versus copying exes to the VM and executing them when connecting remotely to the VM.

With the VM agent approach, each agent runs independently and periodically collects all key metrics and keeps these ready. When the remote agent contacts a VM agent, the metrics are returned immediately. Since each VM agent operates independently, the load is evenly distributed over time. Further, a TCP-based connection to the VM agent port introduces less overhead than a Windows-based connection to the VM.

With the remote communication approach, the remote agent connects to each of the VMs. Since the connection is established using NetBios/file sharing, this connection is more expensive than a TCP-based connection. Since there is no agent running inside the VM, the metric collection is done after the remote agent connects to the VMs. All the metrics are collected in one script, so there will be a CPU spike for a few second 5-8 seconds when the agent connects to the VM. Further, the remote agent connects to multiple VMs in parallel, so data collection across VMs may happen at the same time. The advantage of this approach is no agent needs to be deployed on the VMs.

A VM agent-based approach will introduce significantly lower overhead as the data collection across VMs happens at different times.

68. The eG agent has been set to start automatically upon reboot. Yet, on some Windows workstations, my agent does not start even after reboot. Why does this happen and what do I do to avoid it?

The eGurkhaAgent service relies on the availability of a few Windows services to start. If the eGurkhaAgent service tries to start before these Windows services get up and running, then it is bound to result in agent failure. This is why, it is recommended that you delay the starting of the eGurkhaAgent service. For this, do the following:

- Open Regedit
- Navigate to this registry key **HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\services\eGurkhaAgent**.
- In the left pane, right click and choose "*New->DWORD (32-bit) Value*". Now enter the string "AutoStartDelay" in the highlighted area.
- Choose **Base** as *decimal* and enter "**300**" and close the Regedit console. This ensures that the eGurkhaAgent service starts after 300 seconds from reboot, and not the default 120 seconds.

69. I am monitoring an EMC VNX Storage device in my environment, and I find that eG is not reporting metrics for few of the LUNs. Why is this so and what do I do?

eG uses the following EMC Navisphere CLI command to retrieve LUN-related metrics :

naviseccli -h <controller IP> -user <user> -password <password> -scope <scope> -t <timeout> getlun

If the output of the above command from EMC does not report performance metrics for a few LUNs, then eG too will not be able to report metrics for such LUNs.

The aforesaid command may not be able to report metrics for those LUNs that have no raid type or association with a given raid group (no associated raid group ID). Metrics may also not be reported for metaLUNs or pool LUNs. To identify the list of metaLUNs and pool luns, you can execute the following commands using navisphere CLI.

- Open command prompt to the navisphere CLI location e.g., cd /d C:\Program Files\EMC\Navisphere CLI
- To get list of metaLUNs, execute :

naviseccli -h <controller IP> -user <user> -password <password> -scope <scope> -t <timeout> metalun –list

- To get list of pool LUNs, execute the following commands :

naviseccli -h <controller IP> -user <user> -password <password> -scope <scope> -t <timeout> storagepool –list

naviseccli -h <controller IP> -user <user> -password <password> -scope <scope> -t <timeout> storagepool –list -all

1.4 The eG Reporter

1. *I have 5 external agents that hit the same web page and give us the response time. Can I generate a report comparing these response times?*

Reporter does not consider multiple hosts.

2. *I am unable to see any of the graphs in eG Reporter. Why does this happen and what do I do?*

This will happen only if the browser being used does not support the Adobe Flash Plugin. A message to that effect will be displayed in the graph area itself along with a link to install the plugin. Click on the link to install the plugin and then proceed to view the graphs.

3. *I am not able to save any report as a PDF file. Everytime I click on the SAVE button in the eG Reporter Interface, the download pop-up appears, but disappears almost immediately. What could be the problem? How do I resolve it?*

Such an issue could occur in either or both the following situations:

- if the eG manager's IP address is missing from the list of trusted sites supported by your browser;
- if the eG manager is double-byte enabled, and the font file required for supporting double-byte characters is not available on the eG manager host.
- If the eG manager's IP address is missing from the trusted sites list, then you will have to add the manager IP to the trusted sites list of your browser. To achieve the same, do the following:
- Follow the Tools -> Internet Options menu sequence on your Internet Explorer browser.
- Click on the **Security** tab within. Figure 32 will then appear.

Figure 58: The Internet Options dialog box

- Click on the **Trusted Sites** button in Figure 32. This will invoke Figure 33 listing the trusted sites (if any) that pre-exist. To add your eG manager's IP address to this list, type the IP address in the format: **http://<eG_Manager_IP>** in the **Add this Web site to the zone** text box. Then, simply click the **Add** button.

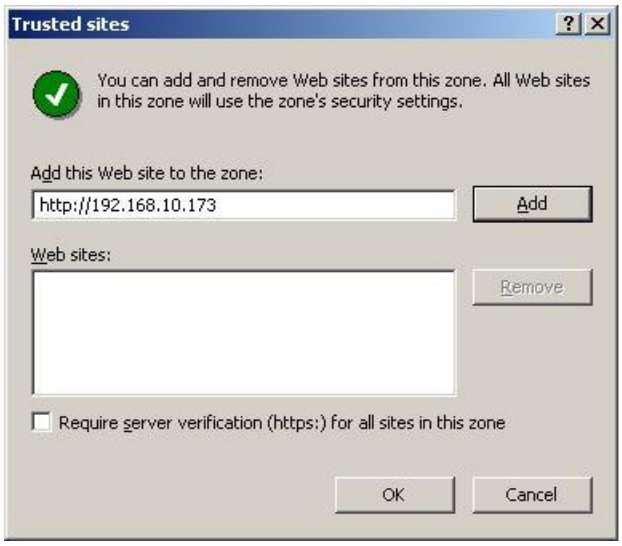


Figure 59: Specifying the eG manager's IP address

- This will add the eG manager's IP address to the **Web sites** list. Then, click the **OK** button.

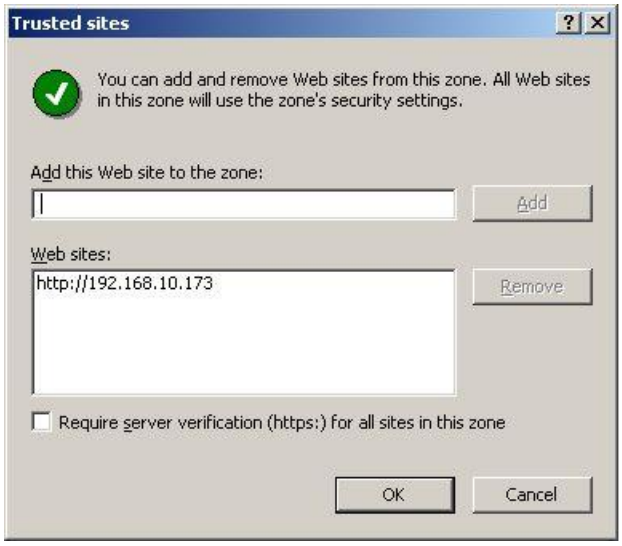


Figure 60: The eG manager's IP address added to the Web sites list

- You will then return to Figure 32. Now, click the **Custom** button in in Figure 32.

- In the **Security Settings** dialog box that then appears (see Figure 35), scroll down to the **Downloads** section, and **Enable** the **Automatic prompting for file downloads**. Set the security level to **Medium** by selecting the **Medium** option from the **Reset to** list in Figure 35, and then click the **OK** button.

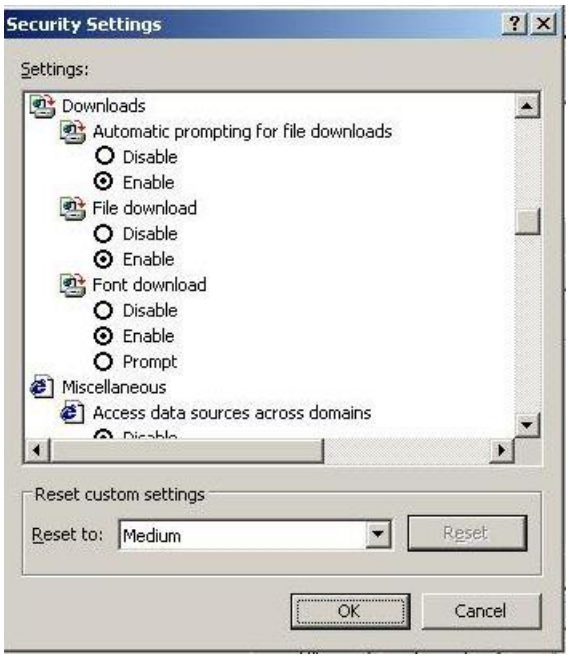


Figure 61: The Security Settings dialog box

- This will lead you back to Figure 32. Click **Apply** and **OK** buttons therein to save the changes.

On the other hand, if the problem is owing to the non-availability of a double-byte font file on the eG manager, then download the font file of interest to you, and copy it to the **<EG_INSTALL_DIR>\manager\fonts** directory.

4. *Using a browser on a Windows 2012 server, I accessed eG Reporter, generated a report for component, and then saved that report as PDF. From the 'Downloads' bar at the bottom of the browser, I opened the saved PDF to view its contents. Then, I generated another report of the same type for another component, and then saved that report also as PDF. Then, I double-clicked on the saved PDF document in the 'Downloads' bar to view it. Doing so, I found that the PDF contained the report for the first component only, and not the second component. Why did this happen and what do I do?*

This problem is specific to Windows 2012 servers/systems. Windows 2012 is bundled with a default PDF reader. This PDF reader is capable of caching PDF documents that are opened in it. When a saved PDF is opened from the 'Show downloads' bar of a browser on Windows 2012, the PDF is automatically opened using the default reader of Windows 2012. Since the reader caches the PDF documents it opens, the next time you try to open another PDF document from the 'Downloads' bar, the PDF automatically opens the cached document and not the document that is clicked on.

To resolve this issue, first, do not attempt to open PDF documents on Windows 2012 directly from the 'Downloads' bar of the browser you use. Instead, go the download destination, right-click on the

PDF to be opened, and choose to open the PDF using Adobe Reader or any other reader you prefer (but not the default reader bundled with Windows 2012).

5. *Data reports that are sent via email are incomplete – i.e., some columns of the report are trimmed out in the email. Why does this happen and what do I do to receive the complete report?*

By default, if you choose to email a report instantly or create a schedule for emailing a report, the report will be inserted in the body of the resultant email. In case of data reports characterized by tens of columns, all the columns may not fit into the body of an email. This is why, they get trimmed out. In such circumstances, you can do one of the following:

- Try saving the report in your email as an image (by right-clicking on the report in the body of the email and selecting 'Save As…'). You will find that the complete report is saved.
- You can choose to receive reports as email attachments. For this, you need to set the **SendMailAsAttachment** flag to **Yes** (or **True**). This flag is available in the **[MISC_ARGS]** section of the **eg_services.ini** file (in the **<EG_INSTALL_DIR>\manager\config** directory).