Monitoring COM+ Server

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Chapter 1: Introduction

COM+ is an extension of Component Object Model (COM), Microsoft's strategic building block approach for developing application programs. COM+ is both an object-oriented programming architecture and a set of operating system services. It adds to COM a new set of system services for application components while they are running, such as notifying them of significant events or ensuring they are authorized to run. COM+ is intended to provide a model that makes it relatively easy to create business applications that work well with the Microsoft Transaction Server (MTS) in a Windows NT or subsequent system.

For any business-critical application built on the COM+ model to function smoothly, the key pre-requisite is the flawless operation of the underlying COM+ framework. Issues such as a sudden increase in the load on the COM+ server, or excessive resource usage by COM+ applications, or a general slowdown in the responsiveness of COM+ components, if not detected and resolved quickly, can upset the stability of the COM+ framework, thereby affecting application performance.

To avoid such negativities, the COM+ server should be continuously monitored. This can be easily done using a specialized COM+ monitoring model prescribed by eG Enterprise.

Chapter 1: Monitoring COM+ Server

eG Enterprise offers a specialized monitoring model (see Figure 1.1), which monitors the performance of the applications on top and the COM+ layer beneath, to figure out where the root-cause of application problems lie.
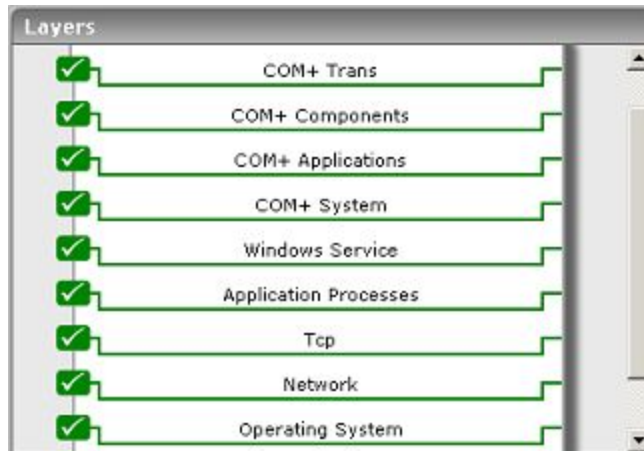
Figure 1.1: The layer model of a COM+ server

Since the bottom 5 layers of Figure 1.1 have been discussed extensively in the *Monitoring Unix and Windows Servers* document, the sections to come will discuss only the top 4 layers of Figure 1.1.

1.1 The COM+ System Layer

The COM+System test associated with this layer reports general statistics pertaining to the COM+ system.

Figure 1.2: The test associated with the COM+ System layer

1.1.1 COM+ System Test

This test reports general statistics pertaining to the COM+ system.

Target of the test : A COM+ Server

Agent deploying the test : An internal agent

Outputs of the test : One set of results for every COM+ server being monitored.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The host for which the test is to be configured.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Number of applications installed	The number of applications installed on the COM+ server.	Number	
Number of applications running	The number of applications running on the COM+ server.	Number	This measure gives the current workload on the COM+ server.
Number of components installed	The number of components installed on the COM+ server.	Number	
Number of components activated	The number of components activated.	Number	This measure can be used to identify when the first invocation has taken place in the newly installed or reinstalled components.
Number of objects in call	The number of objects being invoked.	Number	This measure gives the current workload due to the invocation on the COM+ server.
Number of instances available in the COM+ system	The number of instances created.	Number	This measure gives the current workload on the COM+ server.

1.1.2 COM+ Status Test

This test automatically discovers all the applications on the COM+ server and reports the status of each. This test is disabled by default. To enable the test, go to the **ENABLE / DISABLE TESTS** page using the menu sequence : Agents -> Tests -> Enable/Disable, pick COM+ as the desired **Component type**, set *Performance* as the **Test type**, choose the test from the **DISABLED TESTS** list, and click on the **<** button to move the test to the **ENABLED TESTS** list. Finally, click the **Update** button.

Target of the test : A COM+ Server

Agent deploying the test : An internal agent

Outputs of the test : One set of results for every COM+ server being monitored.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The host for which the test is to be configured.
Restart	If the Restart option is set to **Yes**, then the test will attempt to restart the applications that have stopped. Setting this flag to **No** will ensure that no such attempts are made by the test.
ExcludeApps	Provide a comma-separated list of COM+ applications that the test need not restart even if found not running. By default, this is set to **No**, indicating that, if the Restart option is set to **Yes**, then, by default, the test will attempt to restart all the discovered COM+ applications
Rediscover	Indicate how frequently the test needs to rediscover the COM+ applications. For example, specifying the value 2 here indicates that rediscovery will occur every second time this test runs. Accordingly, if the Test Period chosen is 30 seconds, then rediscovery will take place every 60 (30*2) seconds.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Availability	Whether the ComPlus application is running or not.	Number	The value 100 indicates that the application is running or has been successfully restarted. The value 0 indicates that the application restart has failed.

1.2 The COM+ Components Layer

Using the test mapped to this layer (see Figure 1.3), administrators can determine the health of components registered with the COM+ server.
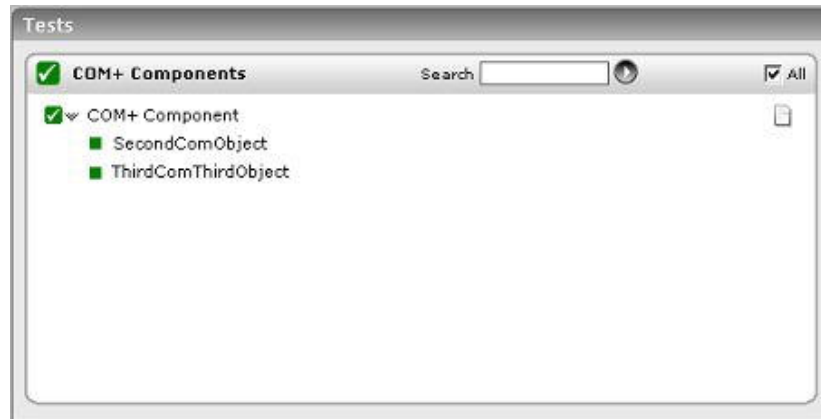
Figure 1.3: The test associated with the COM+ Components layer

1.2.1 COM+Component Test

This test reports key statistics pertaining to the components registered on the COM+ server. To simplify component management, you can create groups of components by clicking on the Click here link in the test configuration page. **By default, this test reports metrics only for those components that are part of a group.**

Target of the test : A COM+ Server

Agent deploying the test : An internal agent

Outputs of the test : One set of results for every component group configure using the eG administrative interface.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The host for which the test is to be configured.
AutoDiscovery	By default, the eG Enterprise suite allows administrators to configure component groups using the eG administrative interface, and reports metrics pertaining to every group so created. Accordingly, by default, AutoDiscovery is set to **No**. If you want the components to be discovered and monitored automatically, then select the **Yes** option against AutoDiscovery. When this is done, the eG agent automatically discovers all the components on the target COM+ server, and reports one set of measures for every component available on the server.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Objects invoked	The number of objects being invoked.	Number	A high value indicates high workload that corresponds to components.
Objects pooled	The total number of objects created by a pool including objects that are in use and objects that have been deactivated.	Number	
Maximum pool size	The maximum object pool size.	Number	
Object references	The total number of objects that are currently held by client references.	Number	
Response time	The average call duration of method calls.	Secs	A high response time denotes a problem.
Calls failed	The number of calls failed in the last measurement period.	Number	A high value denotes a problem.
Calls completed	The number of calls completed during the last measurement period.	Number	

1.2.2 COM+ Comp Test

This test reports key statistics pertaining to each of the components registered on the COM+ server. This test is disabled by default.

This test is disabled by default. To enable the test, go to the **ENABLE / DISABLE TESTS** page using the menu sequence : Agents -> Tests -> Enable/Disable, pick the desired **Component type**, set *Performance* as the **Test type**, choose the test from the **DISABLED TESTS** list, and click on the **<** button to move the test to the **ENABLED TESTS** list. Finally, click the **Update** button.

Target of the test : A COM+ Server

Agent deploying the test : An internal agent

Outputs of the test : One set of results for every component registered on the COM+ server.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The host for which the test is to be configured.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Objects invoked	The number of objects being invoked.	Number	A high value indicates high workload that corresponds to components.
Objects pooled	The total number of objects created by a pool including objects that are in use and objects that have been deactivated.	Number	
Maximum pool size	The maximum object pool size.	Number	
Object references	The total number of objects that are currently held by client references.	Number	
Response time	The average call duration of method calls.	Secs	A high response time denotes a problem.
Calls failed	The number of calls failed in the last measurement period.	Number	A high value denotes a problem.
Calls completed	The number of calls completed during the last measurement period.	Number	

1.3 The COM+ Trans Layer

This layer monitors the transactions to the COM+ server (see Figure 1.4).

Figure 1.4: The test associated with the COM+Trans layer

1.3.1 Com+Transactions Test

This test monitors the transactions executing on a COM+ Server.

Target of the test : A COM+ Server

Agent deploying the test : An internal agent

Outputs of the test : One set of results for every COM+ server being monitored.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The host for which the test is to be configured.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Aborted transactions	The number of transactions that were aborted during the last measurement period.	Number	A high value indicates a bottleneck on the COM+ server.
Aborted transactions rate	The rate at which the transactions on an COM+ server aborted during the last measurement period.	Trans/Sec	

Measurement	Description	Measurement Unit	Interpretation
Active transactions	The number of transactions that are currently active.	Number	A high value for this measure may indicate a large number of active transactions. Alternatively, this may also indicate that due to some reasons the users are not able to complete the transactions.
Max active transactions	The high watermark of active transactions during the last measurement period.	Number	
Committed transactions	The number of transactions that were committed during the last measurement period.	Number	
Committed transactions rate	The rate at which transactions were committed during the last measurement period.	Trans/Sec	
Forcefully aborted transactions	The number of transactions that were forcefully aborted during the last measurement period.	Number	
Forcefully committed transactions	The number of transactions that were forcefully committed during the last measurement period.	Number	
In doubt transactions	The number of transactions in doubt.	Number	
Avg response time	The average time taken by the COM+ Server to respond to user requests.	Secs	A high response time denotes poor responsiveness of the COM+ server. This could be due to the server being overloaded or misconfigured.
Maximum response	The maximum response	Secs	

Measurement	Description	Measurement Unit	Interpretation
time	time.		
Minimum response time	The minimum response time.	Secs	
Total transactions rate	The number of transactions per sec.	Trans/Sec	The high value of this metric indicates a lot of transactional activity happening on the server.

1.4 The COM+ Applications Layer

The test associated with this layer reports the resource usage of the applications installed on the COM+ server.

Figure 1.5: he test associated with the COM+ Applications layer

1.4.1 COM+ Application Test

This test reports statistics related to the COM+ applications installed on the COM+ Server.

Target of the test : A COM+ Server

Agent deploying the test : An internal agent

Outputs of the test : One set of results for every COM+ application installed on the COM+ server being monitored.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The host for which the test is to be configured.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Cpu usage	The CPU usage of the COM+ application.	Percent	
Memory usage	The memory utilization of COM+ Application.	MB	
Thread count	The number of threads running in the particular application.	Number	
Components activated	The number of components activated.	Number	This measure can be used to identify when the first invocation has taken place in the newly installed or reinstalled components.
Objects invoked	The number of objects being invoked	Number	This measure gives the current workload due to the invocation on the COM+ server.
Current instances	The number of instances currently created	Number	This measure gives the current workload on the COM+ server.

About eG Innovations

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

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

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