



# Monitoring Transaction Processor (TP)

eG Innovations Product Documentation

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## Chapter 1: Introduction

The advent of Internet technologies has probably had the most radical change in the banking and finance sector. Consumers and businesses alike can now perform transactions with banks on-line. Real-time payment and credit processing are now the norm.

Corillian, Inc.'s Voyager platform offers a secure, flexible, scalable set of Internet banking solutions for financial institutions. Voyager is a single platform that supports multiple lines of business - Consumer banking, Small Business Banking, Wealth Management, Credit Card Management, and Corporate Cash Management. Besides supporting all of Corillian's Line of Business Solutions and Enterprise Applications, Voyager also offers a quick and easy way to integrate the Corillian applications with third party and legacy applications.

To provide scalability, improved security, and enhanced performance, most Internet platforms are designed to include a number of tiers of applications. Corillian Voyager is no different. A web server front-end handles all user requests, while a Voyager Load Balancer (VLB) software on the web front-end serves to balance the load across all the servers in the farm. Along with the Transaction Processor (TP), the VLB handles session creation and management. Microsoft COM serves as the transport medium between the VLB and the TP. The Voyager TP processes customer requests received from the web server. Authentication and authorization of users is handled by the Authentication server (ATC) which is an integral part of the TP. Another component of the TP, the Voyager Response Engine interacts with the repositories to retrieve customer-specific data and providing responses back in XML format to the web front-end. The TP also includes a VLOG service which generates a comprehensive log of all customer operations. All log information as well as customer-specific data repositories are maintained in Microsoft SQL database. Some of the operations performed by Voyager involve interaction with third party hosts of the financial institution. The Host Servers handle these operations. The host servers are mainly responsible for communicating with the client systems and converting data from these systems into the Voyager format.

Figure 1.1 depicts the topology of the Voyager application.

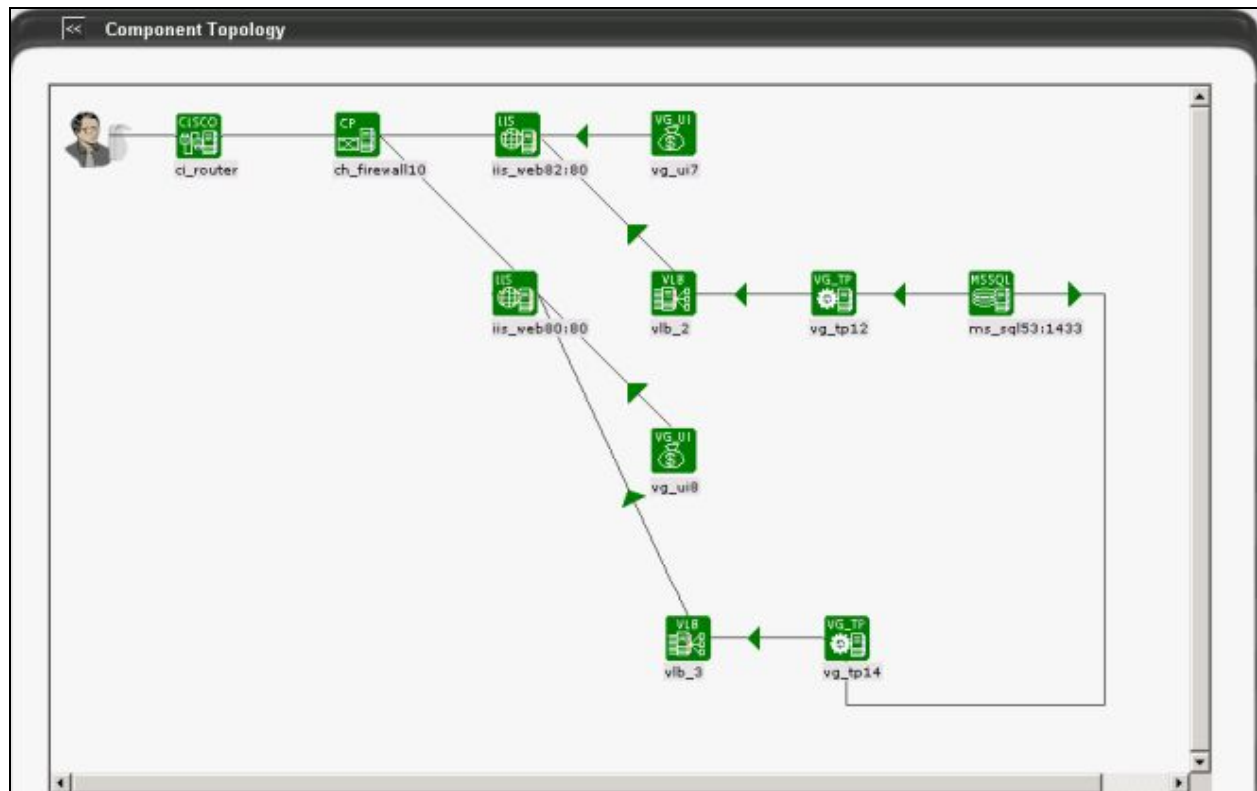


Figure 1.1: The topology of Voyager

The eG Enterprise system treats the Transaction Processor (TP) as a separate server and extracts critical performance statistics from it. This document deals with of the TP server in great detail.

## Chapter 2: How to Monitor Transaction Processor (TP) Server Using eG Enterprise?

eG Enterprise monitors the TP server in an agent-based manner. An eG agent installed on the target server pulls out the critical measures pertaining to its performance. Using these metrics, administrator can continuously track the server performance and address the issues immediately, if any.

### 2.1 Managing the TP Server

To achieve this, do the following:

1. Log into the eG administrative interface.
2. Add the TP server manually using the **COMPONENTS** page (Infrastructure -> Components -> Add/Modify). Remember that components manually added are managed automatically. Figure 2.1 clearly illustrates the process of adding a TP server.

COMPONENT BACK

This page enables the administrator to provide the details of a new component

Category: All Component type: TP

**Component information**

Host IP/Name: 192.168.10.1

Nick name: tp

**Monitoring approach**

Agentless: ☐

Internal agent assignment: ☒ Auto ☐ Manual

External agents:

192.168.8.57
ext_8.137
Rem_8.164
Rem_9.64

Add

Figure 2.1: Adding a TP server

3. Specify the **Host IP/Name** and **Nick name** for the TP server in the **COMPONENT** page. Then, click on the **Add** button to register the changes.
4. Then, try to sign out of the eG administrative interface. Upon doing so, Figure 2.2 will appear

listing the unconfigured tests for the TP server.

List of unconfigured tests for "TP"		
Performance		tp
ComFedQuery		

Figure 2.2: The list of unconfigured tests for the TP server

5. Click on the **ComFedQuery** test in Figure 1.3 to configure it. [Click here](#) to know how to configure this test.
6. Finally, signout of the eG administrative interface.

## Chapter 3: Monitoring the Transaction Processor (TP) Server

The eG Enterprise system monitors the Transaction Processor using the TP monitoring model (see Figure 3.1). The Voyager Transaction Processor handles many functions including the following:

- Session management: The Voyager Load Balancer (VLB) shares this responsibility with the Transaction Processor.
- Templates
- Response engine
- Host server well-being, and
- Garbage collection.

The layer model of the TP server is shown in Figure 3.1.

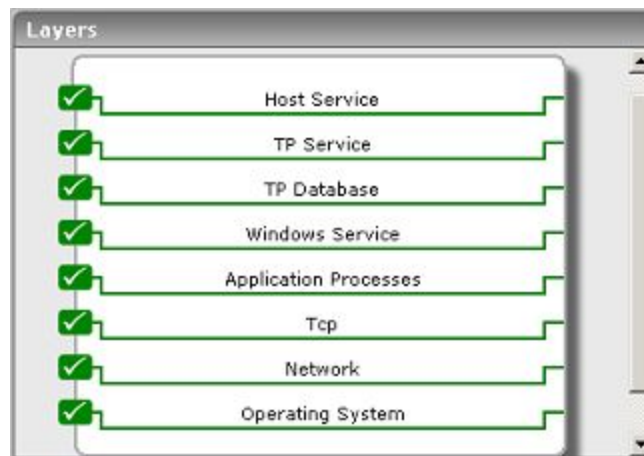


Figure 3.1: The layer model of the TP server

The sub-sections that will follow will elaborately discuss the top 3 layers of Figure 3.1 only as the remaining layers have been discussed extensively in the *Monitoring Unix and Windows Servers* document.

## 3.1 The TP Database Layer

This layer closely monitors the accesses to the TP database and authentication database and returns a wide variety of metrics pertaining to the database. The tests associated with this layer are as follows (see Figure 3.2):



Figure 3.2: The tests associated with the TP Database layer

### 3.1.1 Atc Database Test

This test reports statistics relating to the authentication database, which is a SQL database that contains data used in processing requests and responses. The authentication database consists of authentication data and authorization data, though there is no direct sharing of tables.

**Target of the test :** The TP server

**Agent deploying the test :** An internal agent

**Outputs of the test :** One set of outputs for every authentication database that is monitored.

**Configurable parameters for the test**

Parameter	Description
Test period	How often should the test be executed
Host	The host for which the test is to be configured.
Port	Refers to the port at which the specified host listens to.

### Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Average ADO response time	Indicates the average ADO response time over the last minute.	Secs	A significant increase in the value of this measure denotes a slowdown of the ATC database.
Average connections used	Indicates the average number of database connections used in the last minute.	Number	
Database pool size	Indicates the number of connections that are available in the DBManager Connection Pool to execute transactions through ADO.	Number	Compare the pool size with the connections in use. If the connections is use approaches the pool size, you may want to resize the pool.
Pool availability	Indicates whether the pool is available or not.	Percent	If the value of this measure is 0, it indicates that the pool is not available. The value 100, on the other hand, indicates that the pool is available.
Request execution rate	Indicates the rate of requests currently being executed through ADO.	Reqs/Sec	
Requests waiting rate	Indicates the rate at which requests are waiting to get executed.	Reqs/Sec	Ideally, this value should be close to 0. An increase in requests waiting for database execution could result in the login process being slow.
Error rate of SQL queries to ATC DB	Indicates the number of SQL errors thrown per second.	Errors/Sec	
Average transaction response time	Indicates the average transaction response time during the last minute.	Secs	

### 3.1.2 Tp Databases Test

This test reports statistics pertaining to the transaction processor's database.

**Target of the test :** The TP server

**Agent deploying the test :** An internal agent

**Outputs of the test :** One set of outputs for every TP database monitored.

### Configurable parameters for the test

Parameter	Description
Test period	How often should the test be executed
Host	The host for which the test is to be configured.
Port	Refers to the port at which the specified host listens to.

### Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Avg ADO response time	Indicates the average ADO response time over the last minute.	Secs	A significant increase in the value of this measure denotes a slowdown of the TP database.
Avg connections used	Indicates the average number of connections used in the last minute.	Number	
Database pool size	Indicates the number of connections that is available in the DBManager Connection Pool to execute transactions through ADO.	Number	Compare the pool size with the connections in use. If the connections in use approaches the pool size, you may want to resize the pool.
Database pool availability	Indicates whether the pool is available or not.	Percent	If the value of this measure is 0, it indicates that the pool is not available. The value 100, on the other hand, indicates that the pool is available.
Request execution rate	Indicates the rate of requests currently being executed through ADO.	Reqs/Sec	
Requests waiting rate	Indicates the rate at which requests are waiting to get executed.	Reqs/Sec	Ideally, this value should be close to 0. An increase in requests waiting for database execution could result in the login process being slow.

Measurement	Description	Measurement Unit	Interpretation
SQL error rate	Indicates the number of SQL errors thrown per second.	Errors/Sec	
Avg transaction response time	Indicates the average transaction response time during the last minute.	Secs	

## 3.2 The TP Service Layer

Figure 3.3 depicts the tests associated with this layer. These tests monitor the overall health of the transaction processor.

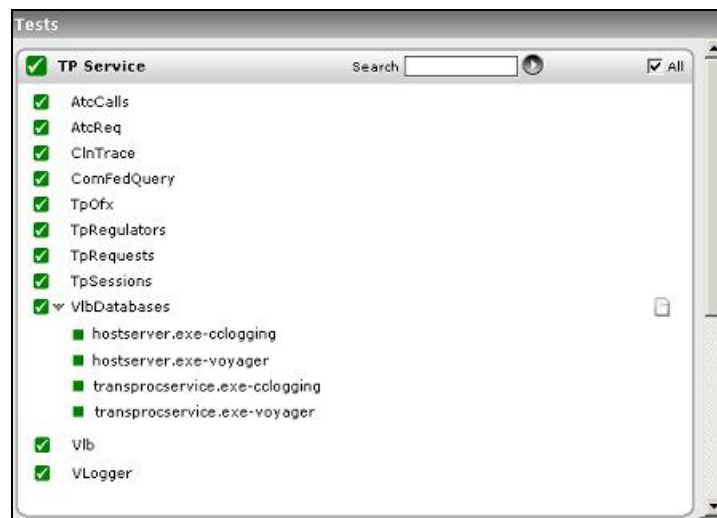


Figure 3.3: The tests associated with the TP Service layer

### 3.2.1 Atc Calls Test

This test reports statistics pertaining to the authentication service of the Voyager. The authentication service, which exists within each Transaction Processor, provides a central user authentication source for a number of Voyager products and add-ons, including consumer and business banking, bill payment, and One Source Register (OSR).

**Target of the test :** The TP server

**Agent deploying the test :** An internal agent

**Outputs of the test :** One set of outputs for the TP 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.
Port	Refers to the port at which the specified host listens to.

### Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Database calls	Indicates the rate of direct database calls during the last minute.	Calls/Sec	A decrease in the value of this measure would indicate that there is a significant slowing of the Authentication Service and it cannot keep up with the load required.
HostServer queue size	Indicates the length of a queue of transactions awaiting assignment to a host server.	Number	Ideally, the queue size should be low.
HostServer response rate	Indicates the rate of responses from the host server during the past minute.	Reqs/min	
Authentication calls pending	Indicates the count of authentication API calls currently in progress.	Number	A large increase in the value of this measure points towards a degraded response time between the Transaction Processor and the host, or a slowdown in the host itself.
Pending database calls	Indicates the count of database API calls currently in progress.	Number	A large increase in the value of this measure points towards a degraded response time between the Transaction Processor and the TP database.
Pending identity calls	Indicates the count of identity API calls currently in progress.	Number	
Pending pinvault	Indicates the count of pin	Number	

Measurement	Description	Measurement Unit	Interpretation
calls	vault API calls currently in progress.		
Pin vault calls	Indicates the rate of pin vault calls. The Pin Vault is where encrypted aliases are stored and the data is stored with the rest of the authorization and authentication database, but is managed by a distinct COM (in-proc) object.	Calls/Sec	A decrease in the value of this measure would indicate that there is a significant slowing of the Authentication Service and it cannot keep up with the load required.
Token cache ratio	Indicates the token cache ratio during the last minute	Percent	
Valid auth tokens	Indicates the count of valid authentication tokens. A token is a 32-character string that is a hex representation of a 128-bit random number. A token is created by combining a GUID with other environmental data; this information is then sent through an MD5 secure hash.	Number	A sharp increase in this measure may mean sessions are not expiring, there are too many users on the system, and response times are high. If this measure continues to increase even after peak load, make sure that the AuthTokenPurge Task in SQL Server is running regularly.

### 3.2.2 Atc Requests Test

This test monitors the requests placed with the authentication service.

**Target of the test :** The TP server

**Agent deploying the test :** An internal agent

**Outputs of the test :** One set of outputs for the TP 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.
Port	Refers to the port at which the specified host listens to.

**Measurements made by the test**

Measurement	Description	Measurement Unit	Interpretation
Active requests to the ATC	Indicates the number of requests that are actively executing.	Number	
Current requests to the ATC	Indicates the total number of requests upon the service.	Number	
Current signoff requests	Indicates the number of sign off requests that are currently being executed.	Number	
Current signon requests	Indicates the number of sign on requests that are currently being executed.	Number	Occasional spikes in this value are OK, as long as it is able to recover and this value returns to the normal level. However, a consistent increase in this value should be investigated, as it indicates a bottleneck elsewhere in the system (typically, the host or the database).
Avg. request wait time in ATC	Indicates the average time for which the requests that began active execution in the past second had to wait.	Secs	
Signon execution time in ATC	Indicates the average time it took to execute signon requests which completed in the past minute. This time includes time	Secs	

Measurement	Description	Measurement Unit	Interpretation
	authenticating against backend host and updating some of the user information.		
Signon requests to ATC	Indicates the total number of signon requests received since the last measurement period.	Number	
Signoff requests to ATC	Indicates the total number of signoff requests received since the last measurement period.	Number	
Waiting requests for ATC	Indicates the number of requests that are waiting to begin active execution.	Number	This value should be close to 0.
Requests timed out in the ATC	Indicates the number of requests that timed out in the past second while waiting to become active.	Number	

### 3.2.3 CIn Trace Test

The CCLogging database stores trace logging information generated by Voyager components and plug-ins. This information can be used for monitoring and troubleshooting Voyager. The **CIn Trace** test monitors the trace logs and reports metrics such as the number of enqueued requests and the number that can be traced to the database.

**Target of the test :** The TP server

**Agent deploying the test :** An internal agent

**Outputs of the test :** One set of outputs for every CCLogging database monitored.

**Configurable parameters for the test**

Parameter	Description
Test period	How often should the test be executed

Parameter	Description
Host	The host for which the test is to be configured.
Port	Refers to the port at which the specified host listens to.

### Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Logging queue length	Indicates the number of requests that are currently in the queue waiting to be logged.	Number	This should ideally be 0.
Logging threads count	Indicates the number of threads that are currently tracing to the database.	Number	Many threads indicate slow CCLogging database.

### 3.2.4 ComFedQuery Test

This test monitors the error statistics in the CCLogging database.

**Target of the test :** The TP server

**Agent deploying the test :** An internal agent

**Outputs of the test :** One set of outputs for every CCLogging database monitored.

#### Configurable parameters for the test

Parameter	Description
Test period	How often should the test be executed
Host	The host for which the test is to be configured.
Port	Refers to the port at which the specified host listens to.
Instance	Enter the name of a specific MS SQL instance that is to be monitored. The default value of this parameter is "default". To monitor an MS SQL instance named "CFS", enter this as the value of the Instance parameter.
DBHost	The IP/host name of the database host.

Parameter	Description
DBPort	The port at which the database host listens.
UserName	The user name to be used for logging into the database. This user should be authorized to connect to the CCLogging database.
Password	Enter the password for logging into the CCLogging database
Confirm Password	Confirm the password by retyping it in the Confirm Password text box.
Message	Provide a comma-separated list of error message patterns to be monitored in the format, <i>Displayname:messagepattern</i> . Here, the <i>Displayname</i> is just a name that is used to uniquely identify the message pattern, and will be displayed in the monitor interface. The <i>messagepattern</i> is an expression of the form - *expr* or expr or *expr or expr* or *expr1*expr2*... or expr1*expr2, etc. A leading '*' signifies any number of leading characters, while a trailing '*' signifies any number of trailing characters. For example, <i>Error1:*cc_err*,Error2:*login*</i> .
Detailed Diagnosis	<p>To make diagnosis more efficient and accurate, the eG Enterprise system embeds an optional detailed diagnostic capability. With this capability, the eG agents can be configured to run detailed, more elaborate tests as and when specific problems are detected. To enable the detailed diagnosis capability of this test for a particular server, choose the <b>On</b> option against Detailed Diagnosis. To disable the capability, click on the <b>Off</b> option.</p> <p>The option to selectively enabled/disable the detailed diagnosis capability will be available only if the following conditions are fulfilled:</p> <ul style="list-style-type: none"> <li>• The eG manager license should allow the detailed diagnosis capability</li> <li>• Both the bad and normal frequencies configured for the detailed diagnosis measures should not be 0.</li> </ul>

### Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Errors found	Indicates the number of error messages logged into the CCLogging database.	Number	The detailed diagnosis of this measure, if enabled, provides the details of the error messages that were logged into the CCLogging database.

### 3.2.5 TpOfx Test

The Voyager platform supports a wide variety of applications built to support the Online Banking community. One such application is OFX, which is a protocol used by Personal Finance Managers such as Intuit Quicken and Microsoft Money to download financial data. This test reports statistics pertaining to OFX.

**Target of the test :** The TP server

**Agent deploying the test :** An internal agent

**Outputs of the test :** One set of outputs for the TP 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.
Port	Refers to the port at which the specified host listens to.

**Measurements made by the test**

Measurement	Description	Measurement Unit	Interpretation
Current requests	Indicates the current number of OFX requests being handled by this TP.	Number	
Request execution time	Indicates the average time it took to execute OFX requests which completed in the past minute.	Secs	A high value indicates a TP slowdown.
Request rate	Indicates the number of OFX requests that have been executed by this TP in the past second.	Reqs/Sec	

### 3.2.6 Tp Regulators Test

This test monitors the performance of the regulator on a Transaction Processor (TP).

**Target of the test :** The TP server

**Agent deploying the test :** An internal agent

**Outputs of the test :** One set of outputs for every regulator monitored.

**Configurable parameters for the test**

Parameter	Description
Test period	How often should the test be executed
Host	The host for which the test is to be configured.
Port	Refers to the port at which the specified host listens to.

**Measurements made by the test**

Measurement	Description	Measurement Unit	Interpretation
Active requests	Indicates the number of requests that are actively executing. If the regulator is enabled, this value will never exceed the value of <b>RegulatorMaxActive</b> on the TP. When a new request arrives, the server checks to see if it is already processing the maximum number of requests. If it has reached the limit, it defers processing new requests until the number of active requests drops below the maximum amount.	Number	The number of active requests should ramp up as new users are added and remain constant once the highest load is reached.
Avg request wait time	Indicates average time for which requests that began active execution in the past second had to wait on the Regulator.	Secs	
Timed out requests	Indicates the number of requests that timed out in the	Number	A high value of this measure generally means that there are too

Measurement	Description	Measurement Unit	Interpretation
	past second while waiting to become active.		many users on the system and response times will be high.
Waiting requests	Indicates the number of requests that are waiting to begin active execution.	Number	If the value of this measure increases then it indicates that the time that will be spent on processing the transactions will increase as well.

### 3.2.7 Tp Requests Test

This test monitors the requests to a Transaction Processor (TP).

**Target of the test :** The TP server

**Agent deploying the test :** An internal agent

**Outputs of the test :** One set of outputs for the TP server monitored.

**Configurable parameters for the test**

Parameter	Description
Test period	How often should the test be executed
Host	The host for which the test is to be configured.
Port	Refers to the port at which the specified host listens to.

**Measurements made by the test**

Measurement	Description	Measurement Unit	Interpretation
Active requests	Indicates the number of requests that are actively executing.	Number	
Current requests to the TP	Indicates the current number of requests being handled by this TP.	Number	
Audit log requests	Indicates the number of current requests for the	Number	

Measurement	Description	Measurement Unit	Interpretation
	audit log.		
Requests to the TP	Indicates the total number of requests processed by this TP during the last measurement period. Does not include Create/Delete session.	Number	
Requests waiting in the TP	Indicates the number of requests that are waiting to begin active execution.	Number	
Requests timed out in the TP	Indicates the number of requests that timed out in the past second while waiting to become active.	Number	
Requests to the TP in the past minute	Indicates the no. of requests were executed by this TP in the last minute.	Number	
HTML response threads in the TP	Indicates the current HTML Response Threads on the TP.	Number	
HTML transactions in the TP	Indicates the current HTML transactions on the TP.	Number	A steady number of HTML Transactions on each TP usually is a good sign. If there is a steady decrease, it usually means that the occurrence of a few timeouts or fewer sessions to the TP. An increase in HTML Transactions on another TP may mean that a TP has died and the other TPs are inheriting the increased load.
Queued transactions for the Host Server	Indicates the number of requests in the HostServer queue waiting to be processed.	Number	
Avg request wait time in TP	Indicates the average time for which requests that	Secs	

Measurement	Description	Measurement Unit	Interpretation
	began active execution in the past second had to wait.		
Avg response time for the HostServer process	Indicates the average time it took all HostServers under this TP to process their requests in the past minute. Does not include time spent waiting in the HostServer queue.	Secs	If this value increases, it points towards a degraded response time between the TP and the host, or a slowdown in the host itself.
Avg response time for TP processing	Indicates the average TP response time per request for the past minute.	Secs	This value includes both queueing time and execution time.
Request execution time	Indicates the average time it took to execute requests which completed in the past minute. This time includes time spent to lookup the session key in the session map. It does not include time spent waiting on the Regulator.	Secs	

### 3.2.8 Tp Sessions Test

This test monitors the Transaction Processor sessions.

**Target of the test :** The TP server

**Agent deploying the test :** An internal agent

**Outputs of the test :** One set of outputs for the TP server monitored.

**Configurable parameters for the test**

Parameter	Description
Test period	How often should the test be executed

Parameter	Description
Host	The host for which the test is to be configured.
Port	Refers to the port at which the specified host listens to.

### Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Current sessions to TP	Indicates the total number of Voyager sessions on the TP machine.	Number	Ideally, the value of this measure should rise as the load increases, stabilize at target level and decrease when the session timeout period is exceeded. With multiple TPs, look for balanced values. If this is unbalanced, check the routing policy. If this value continues to increase, there could be a problem with garbage collection of expired sessions.
New sessions to TP	Indicates the number of new sessions that have been created in this TP in the past minute.	Number	If this measure increases with load, and gains stability once peak load has been reached, it is a good sign. If there is no value, or the value suddenly drops, make sure that the web servers are functioning properly.
Session garbage collected in TP	Indicates the number of sessions which have been garbage collected on this TP in the past minute. Sessions garbage collected include timed out and signed off sessions.	Number	
Session GC time	Indicates the average time spent in session garbage collection on this TP in the past minute.	Secs	
Sessions timed out	Indicates the number of sessions that have timed out in the past minute.	Number	

### 3.2.9 VLogger Test

The VLog component, also referred to as the VLogger, is responsible for logging the transactions performed by the online banking consumer to the audit log database. This test keeps tabs on the functioning of the VLogger.

**Target of the test :** The TP server

**Agent deploying the test :** An internal agent

**Outputs of the test :** One set of outputs for the TP server monitored.

**Configurable parameters for the test**

Parameter	Description
Test period	How often should the test be executed
Host	The host for which the test is to be configured.
Port	Refers to the port at which the specified host listens to.

**Measurements made by the test**

Measurement	Description	Measurement Unit	Interpretation
AuditLog entry data	Indicates the current AuditLog entry named-pipe total bytes to read.	Number	Many log entries could cause logging to slowdown.
Pending audit log records	Indicates the number of audit log records that have been read but not yet written to the AuditLog database.	Number	Increasing values could indicate a backup in the AuditLog database or a slowdown in the VLOGGER's ability to write data to the database. Consider increasing the value of the AuditConsumers parameter of the VLOGGER, which will give the VLOGGER more threads for writing data to the database.

### 3.2.10 Vlb Test

The Voyager Load Balancer (VLB), along with the TP, shares the responsibility for session creation and management. This test reveals performance statistics pertaining to the VLB.

**Target of the test :** The TP server

**Agent deploying the test :** An internal agent

**Outputs of the test :** One set of outputs for every VLB monitored.

**Configurable parameters for the test**

Parameter	Description
Test period	How often should the test be executed
Host	The host for which the test is to be configured.
Port	Refers to the port at which the specified host listens to.

**Measurements made by the test**

Measurement	Description	Measurement Unit	Interpretation
Current VLB requests	Indicates the number of requests executing in this VLB instance. A request consists of a call to the TP to execute but does not include CreateSession or DeleteSession Calls. It does include successful and failed calls.	Number	A sudden increase or a spike in this value is acceptable, but watch for any value that is consistently high. A consistently high or increasing value of this metric is an indicator of a problem. This value should correlate with the value of the Request_execution_time measure.
Create session calls	Indicates the total number of CreateSession calls processed by all VLB's on this computer during the last measurement period. This includes both successful and failed calls.	Number	
Create session failures	Indicates the total number of failed Create Session calls by all VLB's during the last measurement period. "Failures" means an external error like an RPC network	Number	Watch for any increase in this value over time.

Measurement	Description	Measurement Unit	Interpretation
	error.		
Execute failures	Indicates the total number of failed Execute calls by all VLBs on this computer during the last measurement period. This value does not include Create/DeleteSession.	Number	
Request count	Indicates the total number of requests processed by all VLB's on this computer during the last measurement period. This value does not include Create/Delete session.	Number	
VLB request execution time	Indicates the time it took to execute requests which completed in the past minute.	Secs	After peak load this value should be stable, but watch for any value that is consistently high and increasing numbers after peak load. This value should correlate with the value of the Current_requests measure.

### 3.2.11 VlbDatabases Test

This test reports statistics relating to a VLB's database.

**Target of the test :** The TP server

**Agent deploying the test :** An internal agent

**Outputs of the test :** One set of outputs for every VLB database instance monitored.

**Configurable parameters for the test**

Parameter	Description
Test period	How often should the test be executed
Host	The host for which the test is to be configured.
Port	Refers to the port at which the specified host listens to.

**Measurements made by the test**

Measurement	Description	Measurement Unit	Interpretation
Current VLB database requests	Indicates the number of database requests currently executing in this VLBinstance.	Number	A consistently large value indicates a bottleneck at the database tier
VLB database request execution time	Indicates the average time it took to execute database requests which completed in the past minute. Response time includes the time for parsing the request, to get the cached stored procedure (SP)information, executing the SAP, and the reading/parsing of the SP results.	Secs	A very high value of this measure indicates a performance bottleneck that requires further investigation.
VLB database requests handled	Indicates the number of requests to the database that have begun to execute in the past minute.	Number	
VLB SP execution time	Indicates the average time the ADO.NET took to execute a stored procedure in the past minute.	Secs	

### 3.3 The Host Service Layer

Voyager processes several different types of operations, some of which interact with the financial institution's host. Voyager's host servers handle these operations. Examples of these types of operations are Balance, History, or any operation that requires account data. This layer monitors the activities of these host servers. The tests associated with this layer have been depicted by Figure 3.4.



Figure 3.4: The tests associated with the Host Service layer

### 3.3.1 Host Server Test

This test monitors the host server functions and reports critical metrics relating to the same.

**Target of the test :** The TP server

**Agent deploying the test :** An internal agent

**Outputs of the test :** One set of outputs for every host server monitored.

**Configurable parameters for the test**

Parameter	Description
Test period	How often should the test be executed
Host	The host for which the test is to be configured.
Port	Refers to the port at which the specified host listens to.

**Measurements made by the test**

Measurement	Description	Measurement Unit	Interpretation
Avg host server time	Indicates the average time taken by the backend host to execute the transaction.	Secs	
Avg transaction time	Indicates the average time taken by the transaction executed in the past minute.	Secs	

Measurement	Description	Measurement Unit	Interpretation
Longest transaction time	Indicates the longest time it took to process a transaction for the past hour.	Secs	

### 3.3.2 HSConnector Test

This test reports metrics pertaining to the host server connectors.

**Target of the test :** The TP server

**Agent deploying the test :** An internal agent

**Outputs of the test :** One set of outputs for every host server monitored.

**Configurable parameters for the test**

Parameter	Description
Test period	How often should the test be executed
Host	The host for which the test is to be configured.
Port	Refers to the port at which the specified host listens to.

**Measurements made by the test**

Measurement	Description	Measurement Unit	Interpretation
Avg transaction time	Indicates the time taken for executing a transaction.	Secs	
Host request time	Indicates the time taken by a host server to place a request.	Secs	
Host server time	Indicates the time taken by a host server to complete processing a transaction.	Secs	

Measurement	Description	Measurement Unit	Interpretation
Host servers	Indicates the number of transactions inside Voyager's host server.	Number	
Current executions	Indicates the number of transactions currently executing on a host server.	Number	
Request rate	Indicates the rate at which requests were placed by the host server.	Reqs/Sec	
Wire rate	Indicates the rate at which the requests were on wire.	Reqs/Sec	
Transaction processing time	Indicates the time taken by a host server to process a transaction.	Secs	
Transaction rate	Indicates the rate at which the host server processed transactions.	Trans/Sec	

### 3.3.3 HSTrans Test

This test reports information relating to the transactions executing on a host server.

**Target of the test :** The TP server

**Agent deploying the test :** An internal agent

**Outputs of the test :** One set of outputs for every host server monitored.

**Configurable parameters for the test**

Parameter	Description
Test period	How often should the test be executed
Host	The host for which the test is to be configured.
Port	Refers to the port at which the specified host listens to.

### Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Host server request rate	Indicates the rate at which the host server placed requests.	Reqs/Sec	
Host time	Indicates the time taken by a host server to service a request.	Secs	
Executions count	Indicates the number of executions that occurred on the host server.	Number	
Transaction processing time	Indicates the time taken by the host server to process transactions.	Secs	A very high value indicates an host server overload.

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