

# Shunra™ vCat Analytics v7.0

Shunra Analytics display both runtime data regarding current tests, and data accumulated from previous tests that have been stored offline. Reports can be generated in both Microsoft Word and HTML format. For further information, refer to the Shunra vCat Reporter manual.

To isolate and to improve application performance, use the Shunra Analytics to identify and diagnose the source of potential performance issues. Drill down to the cause of the problem, and then make the required changes to applications and infrastructure. Shunra Analytics can analyze transactions as short as 1 millisecond. For more information, refer to the Shunra vCat Analytics Manual.

## To install Shunra Analytics:

- ▶ From the Shunra Installer, select Shunra Analytics and follow the instructions in the Setup wizard. Note that the VCat Client should be installed first. In the configuration with HP Software, the Shunra Analytics should be installed on the HP Load Generator.


## Configuring and Conducting Analysis

A more powerful component includes analysis capabilities, which assist in pinpointing factors that negatively impact an application's operation across a network, and identifying and diagnosing the source of poor performance (may require additional licensing). When designing a test, ensure that the test includes a packet list. For detailed transaction information, include timing transaction information (see below).

## To access the VCat Analyzer:

- ▶ Launch VCat Reporter, which includes VCat Analyzer, from Start > Programs > Shunra PerformanceSuite > Shunra Reporter.

## To conduct analysis:

1. In the VCat Reporter, after the emulation has completed, select **Analyze > Create Analysis** or click the Analysis icon  in the toolbar.
2. Select the Type, Filter etc. You can re-edit the results; last results overwrite earlier results by default.

## Configuring Packet Capture Capabilities

To capture packets for Shunra Analytics, activate packet capture and enable the Capture packets for TCP Efficiency analysis option under VCat Client Options/Settings. It is recommended to set the Packet List options to capture 1514 bytes, the maximum size of an Ethernet Packet.

## Tips

- ▶ To conduct analysis on transactions marked using Transaction Timing, transactions need to be identified and filtered by either Port number or IP address.
- ▶ Encrypted packets are not be processed by Shunra Analytics
- ▶ Up to 100 MB of data can be captured; therefore add filters to the Packet List definition to make sure that only the relevant data is captured.
- ▶ Longer tests usually display more accurate results

## Configuring a Filter

Configure a Packet List filter to include the IPs involved in the transactions you want to analyze.

## To configure a Packet List filter:

From the Shunra Analytics dialog box, click **Filter**.

- ▶ **From and To Time (Time Based Filters)** Error! Reference source not found.: includes data that falls within the configured From and To times
- ▶ **Location IP address (IP Based Filters):** includes only data based on specific IP addresses

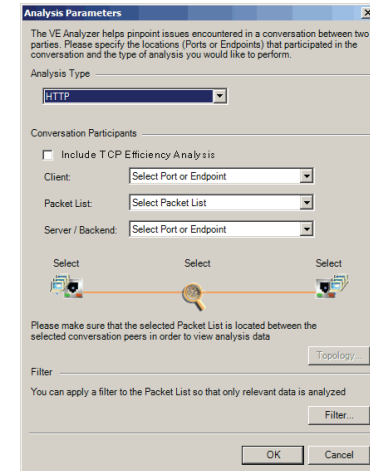
For further information, refer to the Shunra vCat Analytics Manual.

## Integrating Transaction Timing in Tests

Use Transaction Timing to measure the Transaction Response Time (TRT) of individual transactions, and record whether these transactions have passed or failed Service Level Objectives (SLO)s.

This enables the Shunra Analytics to identify the individual transactions by name, and display each transaction in the analysis report. If you do not use Transaction Timing to

mark transactions during a test, data will be displayed on a generic level giving each transaction a generic name such as Transaction 1, etc.



## Analyzing Results

TCP Efficiency analysis displays the number of bytes in transit (being transported between the client and server) at any given time. It can help determine problems relating to window size, to see if the network stack is properly optimized for the application and network and whether to determine whether the application client or server is the source of a bottleneck.

## Optimal Data Transport

Bytes In Flight data and Bandwidth Delay Product data assist in determining if data transport between the client and server are efficient:

- ▶ **Low Bandwidth Delay Product and High Bytes In Flight data:** may mean that the application is sending more data than your network is capable of transporting, which may result in a bottleneck
- ▶ **High Bandwidth Delay Product and Low Bytes In Flight data:** may mean that the application is sending less data than your network is capable of



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transporting, indicating inefficient usage of network resources

## Packet Analysis

The Shunra Packet List captures packets in real time; packet analysis can provide in-depth traffic analysis referenced against the Shunra Analytics reports.

### To display the content of packets captured during an emulation:

1. Load the desired test in Shunra Reporter.
2. Select **Tools > Packet List Viewer**.
3. From the submenu, select the desired packet list; the packet list opens in Wireshark.

## Shunra Reports

- ▶ **Summary:** provides an overview of the tested application's performance, and displays data regarding both the network infrastructure, and the application itself.



- ▶ **Analysis Definitions:** Provides an overview of the configured topology and contains definitions and ports that were utilized during the test.
- ▶ **Transaction Markers:** identifies the packets that mark the first and last frame of a transaction.
- ▶ **Application Efficiency:** displays a breakdown of transactions (when a test has been conducted with transaction timing) by sub transactions, lists the

content of each sub transaction (e.g. images, css, scripts), and the response time per sub transaction. The report also contains a bounce diagram that displays every phase of a transaction

- ▶ **Bandwidth Bottleneck:** displays data regarding the bandwidth utilization and throughput of gateways that have been configured to limit traffic; use this report to determine if the source of a performance problem is related to the network infrastructure, particularly the amount of available bandwidth and the configuration of the NIC cards.
- ▶ **Error and Warning Status:** lists the various errors that occurred during a test, by protocol and error type. A secondary table lists errors by sub-transaction.
- ▶ **Infrastructure Breakdown:** displays the response time by transaction; use to whether performance related issues are occurring in the client, server or network.
- ▶ **TCP Efficiency Analysis:** displays the number of bytes in transit (being transported between the client and server) at any given time. For this report to be available, when configuring the test, select "Capture packets for TCP Efficiency analysis" in Options > Settings. A second Packet List is automatically added to the test; both enable the determination of the amount of bytes in flight at any given moment.

## Deep Analysis Report

Displays the breakdown the original captured packet list to packet lists files specific for each transaction and then uses the new Shunra Analysis capabilities to analyze each transaction.

To view the results:

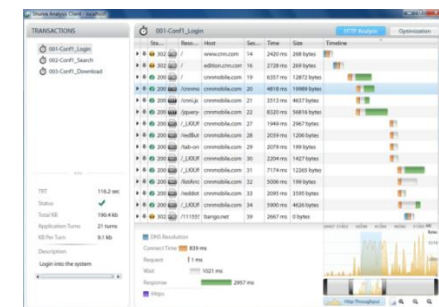
1. Open the Shunra Reporter to see the transaction details that were captured in vCat.
2. For in-depth results, if the Shunra Analyzer is installed, click the **Create Analysis** button.
3. In the Analysis Parameters window:
  - In the Analysis Type select **HTTP**
  - Select **Deep Analysis**

- Select **Export** packet lists of individual transactions
4. Click **OK** and wait for the analysis to finish, and then view the results.
  5. To view the Deep HTTP Analysis results, wait until the Deep Analysis button is enabled.
  6. Click the **Deep Analysis** button, which opens the results window. The left side displays the list of the transactions. The right side displays detailed analysis of a selected transaction.

## Waterfall Report

Shows all HTTP requests and responses that were sent and received by the transaction. For each request the request, wait and response times are shown.

Select a request and see the request/response headers and the content that was sent. In the request below, it took nearly a full second to reply. The exact request parameters are provided in the report to be able to easily pinpoint the reason for this delay.



## Optimization Report

Provides data about how the transaction compares to best practice rules common in the industry, as well as mobile specific best practice rules developed by Shunra. Each rule provides a score and an explanation of the rating, and recommendations regarding how to improve the score. Following these optimization guidelines can significantly lower the transaction response time.

