HP TransactionVision Software

Software Version: 7.50

User Guide

Legal Notices

Warranty

The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

The information contained herein is subject to change without notice.

Restricted Rights Legend

Confidential computer software. Valid license from HP required for possession, use or copying. Consistent with FAR 12.211 and 12.212, Commercial Computer Software, Computer Software Documentation, and Technical Data for Commercial Items are licensed to the U.S. Government under vendor's standard commercial license.

Copyright Notices

© Copyright 2000-2008 Hewlett-Packard Development Company, L.P.

Trademark Notices

TransactionVision® is a registered trademark of the Hewlett-Packard Company.

Java™ is a U.S. trademark of Sun Microsystems, Inc.

Microsoft® and Windows® are U.S. registered trademarks of Microsoft Corporation.

Oracle® is a registered trademark of Oracle Corporation and/or its affiliates.

UNIX® is a registered trademark of The OpenGroup.

Documentation Updates

This guide's title page contains the following identifying information:

- Software Version number, which indicates the software version.
- Document Release Date, which changes each time the document is updated.
- Software Release Date, which indicates the release date of this version of the software.

To check for recent updates, or to verify that you are using the most recent edition of a document, go to:

http://h20230.www2.hp.com/selfsolve/manuals

This site requires that you register for an HP Passport and sign-in. To register for an HP Passport ID, go to:

http://h20229.www2.hp.com/passport-registration.html

Or click the **New users - please register** link on the HP Passport login page.

You will also receive updated or new editions if you subscribe to the appropriate product support service. Contact your HP sales representative for details.

Support

You can visit the HP Software Support web site at:

http://www.hp.com/go/hpsoftwaresupport

This web site provides contact information and details about the products, services, and support that HP Software offers.

HP Software Support Online provides customer self-solve capabilities. It provides a fast and efficient way to access interactive technical support tools needed to manage your business. As a valued support customer, you can benefit by using the HP Software Support web site to:

* Search for knowledge documents of interest
* Submit and track support cases and enhancement requests
* Download software patches
* Manage support contracts
* Look up HP support contacts
* Review information about available services
* Enter into discussions with other software customers
* Research and register for software training

Most of the support areas require that you register as an HP Passport user and sign in. Many also require a support contract.

To find more information about access levels, go to:

http://h20230.www2.hp.com/new_access_levels.jsp

To register for an HP Passport ID, go to:

http://h20229.www2.hp.com/passport-registration.html

Contents

1 Getting Started with TransactionVision

TransactionVision is the transaction tracking solution that graphically shows you the interaction between all the components of your system. TransactionVision non-intrusively records individual electronic events generated by a transaction flowing through a computer network. More importantly, TransactionVision's patent-pending "Transaction Constructor" algorithm assembles those events into a single coherent business transaction.

Graphical analysis of business transactions enable you to:

- Find lost transactions
- Monitor and meet service level agreements
- Improve efficiencies of your business processes

TransactionVision Basics

To understand the tasks required to use TransactionVision, you must understand the TransactionVision components, as well as some basic concepts.

Components

TransactionVision consists of three major components:

- Sensors
- Analyzer
- TransactionVision Web User Interface

The following diagram shows the relationship between these components:
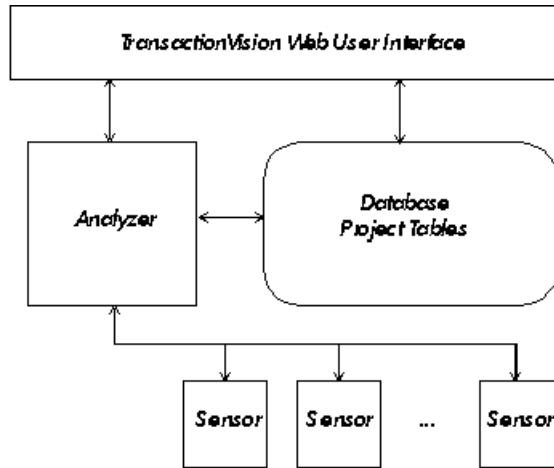
Sensors

Sensors collect transactional events from the various applications involved in your distributed transactions. Sensors are lightweight libraries or exit programs that are installed on each computer in your environment. Each Sensor monitors each call made by supporting technologies on that system and compares it against filter conditions. If the call matches the filter conditions, the Sensor generates a TransactionVision event that contains information about the call. It then forwards the event to the Analyzer by placing it on a designated event queue.

TransactionVision provides the following types of Sensors:

- **WebSphere MQ Sensor** tracks MQI calls. The following supplemental Sensors are available for WebSphere MQ:

    — **Proxy Sensor** correlates business transactions into process that are not monitored using the TransactionVision Sensor libraries (for example, events between a sensored application and an application running on a system where no Sensor is installed such as an external partner system)

    — **WebSphere Business Integration Sensor** distinguishes the various message flows and identifies individual logical transaction paths within WBI.

- — **MQSeries-IMS Bridge Sensor** tracks MQSeries-IMS bridge messages rather than the WebSphere MQ API calls made by the calling applications.

- — **z/OS WebSphere MQ Sensors** are provided for tracking MQI API calls in the CICS, batch and IMS environments on the IBM z/OS system. In the CICS environment, the API crossing exit provided by the CICS adapter for WebSphere MQ is used to intercept the MQ API. In the batch and IMS environments, the application has to be re-bound with the Sensor to intercept MQ API calls.

- **Java Sensors**

  The capabilities of the TransactionVision Java Sensors (JMS, Servlet, EJB and JDBC) and the Diagnostics Java Probe are combined into a single component, HP Diagnostics/TransactionVision Java Agent. The Java Agent instruments and captures events from applications and sends the information to a Diagnostics Server and/or to a TransactionVision Analyzer. In this release the Java Agent can be configured to serve as a Java Probe in a Diagnostics environment or as a Java Sensor in a TransactionVision environment. For combined environments, the agent can simultaneously serve as both the Probe and the Sensor. See the "Installing and Configuring Java Agent" chapter in the *TransactionVision Sensor and Installation Guide* for details.

  - — **Servlet Sensor** tracks servlet methods in a J2EE application server.

  - — **JMS Sensor** tracks WebSphere MQ Java Message Service or TIBCO EMS events from standalone Java applications as well as from J2EE application servers.

  - — **EJB Sensor** tracks transactions through business logic within a J2EE application server.

  - — **JDBC Sensor** allows users to collect and analyze API and timing information on SQL calls and transactions made to a relational database through the JDBC API.

- **CICS Sensor** collects non-WebSphere MQ CICS events to track transactions in a mainframe environment.

For instructions on installing and configuring Sensors, see the *TransactionVision Sensor Installation and Configuration Guide*. For more detailed information about TransactionVision Sensors, including which APIs are monitored by each Sensor, see the *TransactionVision Administration Guide*.

In the following diagram, shaded areas represent the parts of a web application for which TransactionVision can track events:
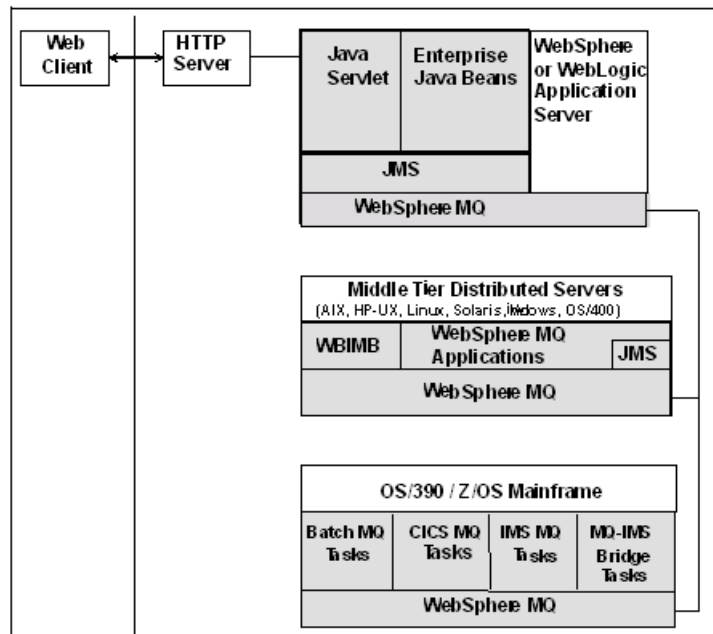
Analyzer

The Analyzer is a service that communicates with Sensors via WebSphere MQ or JMS services. It generates and delivers configuration messages to Sensors by placing them on a designated configuration queue. Configuration messages specify Sensor configuration information such as the name of the event queue where the Sensor should place event messages and data collection filter definitions for the project.

The Analyzer also retrieves events placed on an event queue by Sensors and processes them for display and analysis by the web user interface. It performs the unmarshalling, correlation, analysis, and data management functions.

Each TransactionVision project is assigned a single host running the Analyzer. Projects enable you to easily group and manipulate communication links, data collection filters, database schemas, and Analyzers as one entity. When you start a project, the Analyzer on the host assigned to the project is started automatically.

For instructions on configuring and managing the Analyzer, see the *TransactionVision Administration Guide*.

TransactionVision Web User Interface

The TransactionVision web user interface is an enterprise application for IBM WebSphere or BEA WebLogic that provides the TransactionVision graphical interface. Users and administrators login to the web user interface via a web browser; all interaction is provided through HTML pages. The web user interface communicates with the Analyzer to provide data collection configuration information such as communication links and data collection filters. It also connects to project database schemas display project analysis and report results.

TransactionVision Terms and Concepts

To use TransactionVision effectively, you must be familiar with the following terms and concepts:

- Projects
- Analysis Views
- Transaction Types
- Queries
- Reports
- Transaction Classification
- Event Times

Projects

Event collection projects enable you to easily group and manipulate communication links, data collection filters, database schemas, and Analyzers as one entity. An event collection project is used by an Analyzer to define the communication links, the data collection filters, and the database schema that data will be written into. A project is assigned to a single Analyzer host for event analysis. For more information about creating and managing projects, see the *TransactionVision Administration Guide*.

Analysis Views

TransactionVision provides four different views of event data in a project:

- Component Topology Analysis, which shows the interaction between all components such as message queues, programs, and hosts

- Transaction Analysis, which shows the flow of transactions across all programs in your system

- Event Analysis, which shows a sequential list of all events in your project database

- Event Details, which shows detailed contents of each event message, such as parameter values and message data buffer contents.

Component Topology Analysis

The Component Topology Analysis view graphically displays the interaction between all components of your e-business system, including message queues, programs, and hosts. Because the web user interface builds this view from data collected during program execution, it is an accurate and complete representation of how information flows throughout your system. The thickness of the lines between components can be set to indicate performance characteristics of your system. Color-coding makes error conditions easy to pinpoint at a glance. You can customize the appearance of the Component Topology Analysis and print it as a map of your entire e-business system. For instructions on using this view, see Chapter 3, Using the Component Topology Analysis View.
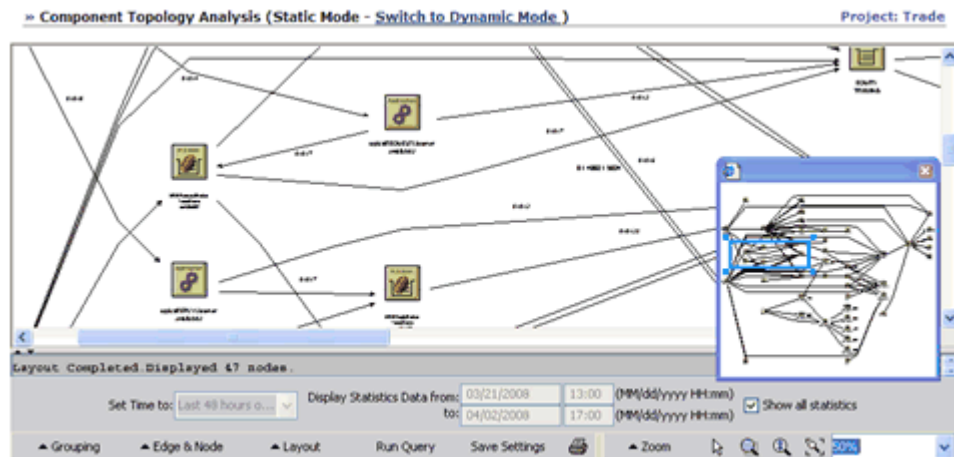
Transaction Analysis

The Transaction Analysis view correlates events across multiple programs, hosts, and operating systems into transactions. Events are correlated into local transactions, which are further correlated into business transactions. For instructions on using this view, see Chapter 4, Using the Transaction Analysis View.
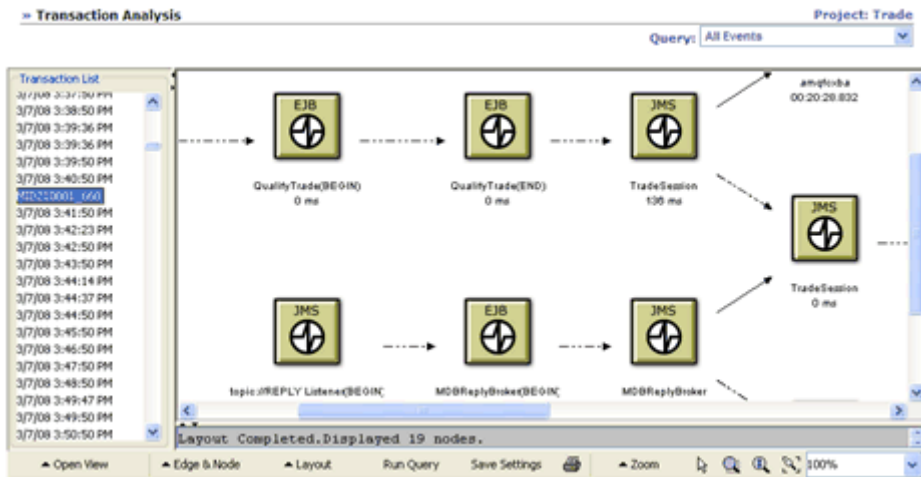
Event Analysis

The Event Analysis view displays all events in the event database in chronological order. Color coding makes it easy to spot events with a warning or error return code at a glance. You can limit the events shown to only the events that make up the local or business transaction associated with the currently selected event. For instructions on using this view, see Chapter 5, Using the Event Analysis View.

- Event Analysis - 20890 Events (showing 281 through 300)

Project: LOCALTRADE_on_ROSS0779TST

Query:: CICS Only

▼ Event Time	API Name	Host Name	Program Name	Technology	Data Size
☐ 05/17/2007 15:35:34.705	MQOPEN	z4	CICSDRVR	WebSphere MQ	
☐ 05/17/2007 15:35:34.715	MQGET	z4	CICSDRVR	WebSphere MQ	445
☐ 05/17/2007 15:35:34.759	LINK	z4	TCAPTD1	CICS	
☐ 05/17/2007 15:35:34.759	WRITEQ TD	z4	TCAPTD1	CICS	30
☐ 05/17/2007 15:35:34.760	WRITEQ TD	z4	TCAPTD1	CICS	30
☐ 05/17/2007 15:35:34.760	WRITEQ TD	z4	TCAPTD1	CICS	30
☐ 05/17/2007 15:35:34.760	LINK	z4	CICSDRVR	CICS	0
☐ 05/17/2007 15:35:34.764	TASK END	z4		CICS	
☐ 05/17/2007 15:36:56.690	MQSI2TRACE	qa3	DataFlowEngine	WebSphere MQ	
☐ 05/17/2007 15:36:56.690	MQPUT	qa3	DataFlowEngine	WebSphere MQ	668
☐ 05/17/2007 15:36:56.690	MQCMIT	qa3	DataFlowEngine	WebSphere MQ	
☐ 05/17/2007 15:36:56.692	MQGET	qa3	DataFlowEngine	WebSphere MQ	668
☐ 05/17/2007 15:36:57.003	MQSI2TRACE	qa3	DataFlowEngine	WebSphere MQ	

[15/1045] Page Number: [ ] Go

First Page Prev 10 Prev Next Next 10 Last Page

Open these events in:
Event Analysis ▼

View events as:
No Transaction ▼

Clear Checks Run Query Detail Compare Options

Event Details

The Event Details view provides additional information about any event in
the Event Analysis view. The Event Details view interprets and displays all of
the arguments and data structure contents associated with the event. You
may also use the Event Details view to compare data structure contents of any
two events. For instructions on using this view, see Chapter 6, Using the
Event Detail View.

Field	Value
⊟ Event Information	
├ API Name	MQGET
├ CCSID	1252
├ ClientTimeSkew	00:00:00.000
├ CommlinkTimeSkew	00:00:00.003
├ Encoding	MQENC_NATIVE (546)
├ Host	gatesman8400
⊟ HostArch	
│ ├ OS	Windows XP
│ └ Vendor	Microsoft
├ HostIPAddress	192.168.1.111
├ EntryTime	03/27/2008 09:13:28.922000
⊟ ProgramInstance	
│ ├	
│ ├	
│ ├ ProcessID	6732
│ ├ StartTime	03/26/2008 19:20:47.125000
│ ├	
│ ├	
│ ├	
│ ├	
│ ├ ThreadID	6
│ └	
├ ProgramName	amqfcxba
├ ProgramPath	C:\Program Files\IBM\WebSphere
├ ExitTime	03/27/2008 09:13:29.157000
├ TechName	WebSphere MQ
├ TimeSkew	00:00:00.000

Field	Value
⊟ Event Information	
├ API Name	MQGET
├ CCSID	37
├ ClientTimeSkew	00:00:00.000
├ CommlinkTimeSkew	00:00:00.003
├ Encoding	785
├ Host	z4
⊟ HostArch	
│ ├ OS	OS390_CICS
│ └ Vendor	IBM
├ HostIPAddress	15.8.155.64
├ EntryTime	03/27/2008 09:19:20.569401
⊟ ProgramInstance	
│ ├ JobId	STC00068
│ ├ JobName	CICSA
│ ├	
│ ├ StartTime	003419360918440C
│ ├ Step	CICSA
│ ├ SYSID	CICS
│ ├ Task	84
│ ├ TCBAddress	0x008D88A8
│ ├	
│ └ Transaction	BTCD
├ ProgramName	CICSDRVR
├ ProgramPath	
├ ExitTime	03/27/2008 09:19:20.574544
├ TechName	WebSphere MQ
├ TimeSkew	00:00:00.000

Collapse All **Expand All** **Save As XML**

User Data

Field	Value
⊟ <Order>	
├ <Account>	MID210001
├ <Amount>	12000.0
├ <Currency>	USD
├ <ID>	00000119cfeacb9b000000000000001f
├ <MarginRatio>	0
├ <OrderType>	Cash
├ <Product>	FUND
├ <Quantity>	12000
├ <Reason>	Normal
├ <RecvAcct>	SE550005
├ <Region>	MIDDLE

View Options

View Data As:	○ Binary ● Text
Code Page:	IBM037 / 00037 / EBCDIC United States
View as MIME Type:	Plain Text (text/plain)

Index	User Data
├ 0000000000	TCAPTD1 11111<?xml version="1.0" encoding="UTF-8"
├ 0000000080	000000000000025</ID><Account>SE280002</Account>
├ 0000000160	ion>Buy</Transaction><OrderType>Cash</OrderType>
├ 0000000240	atio>0</MarginRatio><UnitPrice>16.125</UnitPrice><Q

Transaction Types

A local transaction groups related events within a single thread of execution. A local transaction includes any number of operations performed during the time span of a single unit of work. Operations performed within one unit of work are either committed or are backed out together, so that the effects of a number of operations all are either made permanent (committed) or reversed (backed out) as one atomic group.

A local transaction consists of a set of events that meet all of the following criteria:

- Belong to the same program instance

- Sorted in chronological order

- Confined by a pair of events that signal commitment or back out of a unit of work

TransactionVision tracks business transactions by relating local transactions in different processes or threads (for example, relating an MQPUT in one process to the MQGET in a different process). When communication occurs between different local transactions, they are considered part of the same business transaction. For example, when a client process sends a message to a server process, it will do so in the context of a local transaction, and the server receiving the message will similarly do so within a second local transaction. The operations performed within these two local transactions, both the communication operations that allow the two processes to exchange data as well as any other computational operations within these local transactions, are part of the same business transaction.

For instructions on viewing local and business transactions, see Chapter 4, Using the Transaction Analysis View and Chapter 5, Using the Event Analysis View.

Queries

Queries control which collected events are actually displayed by TransactionVision. Queries enable you to zero in on specific events from the project database. For example, you may specify that you only want to see MQPUT events with a particular message ID. For instructions on creating and editing queries, see Chapter 2, Configuring Queries.

Reports

Reports provide vertically focused business reporting to specific industries, as well as custom business reports and analysis developed to suit your specific requirements. For instructions on using the standard reports installed with TransactionVision, see Chapter 7, Using Reports. For information on creating your own custom reports, see the *TransactionVision Advanced Customization Guide*.

Transaction Classification

While TransactionVision correlates related local transactions into business transactions, organizations can further customize transaction information by defining transaction classes. If classification rules are defined, TransactionVision automatically assigns each business transaction to a transaction class. When you run TransactionVision reports, you may view report information for any or all transaction classes. For example, the Trade project distributed with TransactionVision categorizes business transactions based on the following types of trades: Stock, Bond, and Equity.

Bond	Equity	Fund Transfer
Quality Ratio	**Quality Ratio**	**Quality Ratio**
92%	92%	93%
Average Response Time (s)	**Average Response Time (s)**	**Average Response Time (s)**
6.75	8.25	6.00
3.38 10.13	4.13 12.38	3.00 9.00
0.00 13.50	0.00 16.50	0.00 12.00
8.5	9.9	7.2
Service Level Target: 9s	**Service Level Target: 11s**	**Service Level Target: 8s**
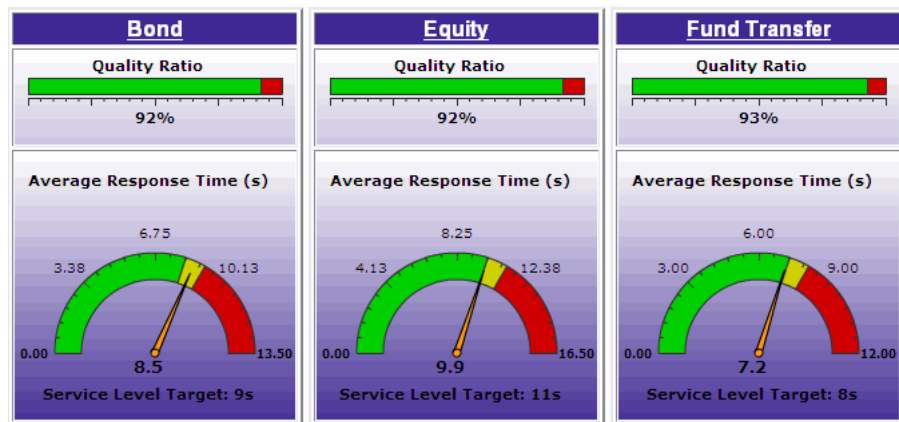
TransactionVision provides a default classification bean that enables you to defines transaction classes without writing a single line of code by performing the following steps before collecting events:

1   Enable the default classification bean.

2   Define classification rules for each class in an XML file.

3   Insert each class and its attributes into a database table.

For instructions on performing these steps or writing a custom classification bean, see the *TransactionVision Advanced Customization Guide*.

The Transaction Analysis view and reports support the display of transaction class names in double-byte code pages.

Event Times

For non-blocking events, the primary event time is the event entry time and the secondary event time is the event exit time. For blocking events such as MQGET and JMS receive, the primary event time is the entry exit time and the secondary event time is the event entry time. This enables TransactionVision to display events in the proper sequence. On the Event Analysis view, TransactionVision sorts events by primary event time.

Starting TransactionVision for Analysis

The TransactionVision web user interface runs in a web browser. To start TransactionVision for analysis, start your browser and open the URL provided by the administrator who installed TransactionVision in your environment. The TransactionVision login page appears.

1   Type your user name in the Login field. If you are unsure of your user name, contact the administrator who installed TransactionVision in your environment.

2   Press the Tab key and type your password in the Password field. If you are unsure of your password, contact the administrator who installed TransactionVision in your environment.

3   Click **Login** to display your TransactionVision home page. If the same user ID is logged in from a different IP address, TransactionVision displays a warning. Click **Yes** to continue logging in.

Browser Security Settings

For the TransactionVision user interface to function properly, you must configure your browser security settings to enable it to run the Java and Flash plug-ins used by TransactionVision.

To verify or change browser security settings in Internet Explorer (IE) 6 and above, perform the following steps:

1   In your browser window, choose **Tools > Internet Options**. The Internet Options dialog opens.

2   On the Security tab of the Internet Options dialog, click the icon for the zone for the server running TransactionVision and click **Custom Level**. The Security Settings dialog opens.
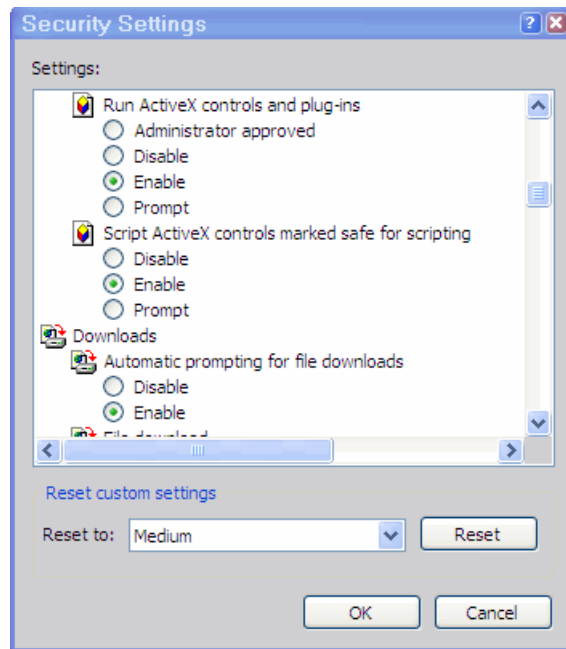
3   Scroll to the Run ActiveX controls and plug-ins setting and click the **Enable** radio button.

4   Click **OK**.

▶   If the server running TransactionVision is in the Internet zone, you may wish to add it to the Trusted Sites zones instead. By default, the Trusted Sites zone has all the necessary security settings for TransactionVision to function properly, and you do not have to enable ActiveX controls and plug-ins for the entire Internet zone.

If you use Internet Explorer on a system that has Internet Explorer Enhanced Security Configuration installed, you may encounter problems in using the TransactionVision user interface. Please uninstall this feature using **Control Panel > Add/Remove Programs > Add/Remove Windows Components**. Alternatively, you can add "about:blank" into your trusted web sites to work around the issue.

Automatic Login

Automatic login may be enabled with cookie files. See the *TransactionVision Administration Guide* for instructions on enabling this automatic login method. If this automatic login method is enabled, a Remember Login? checkbox also appears on the Login page. Check it to save your user name and password so that you will not have to enter them the next time you login.

To use automatic login, cookies must be enabled for your web browser.

Session Timeout

A session is your interaction with TransactionVision from the time you log into the TransactionVision WebSphere application until you logout, either by clicking the **Logout** button or closing the TransactionVision browser window.

For security purposes, the TransactionVision sessions expire if there is no activity on TransactionVision pages for a certain amount of time. When a session expires, TransactionVision logs you out. One minute before logging you out, TransactionVision displays a message notifying you that the current session is about to expire and asking whether to continue working with TransactionVision. Click **Yes** to continue working; click **No** or do nothing to end your session. For instructions on setting the session timeout period, see the *TransactionVision Administration Guide*.

TransactionVision Home Page

When you login to TransactionVision, the TransactionVision home page is
displayed.
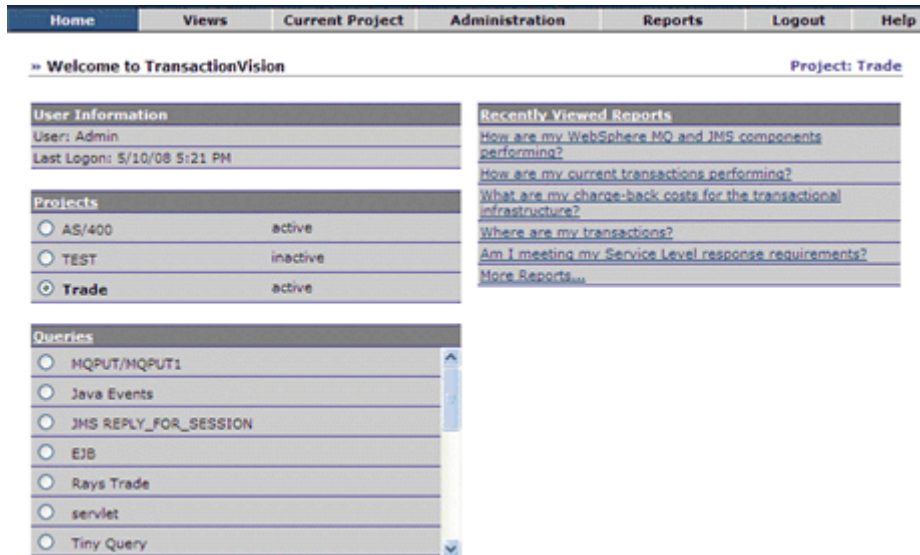
Menus

All TransactionVision user and administrator operations can be performed by selecting the appropriate menu item. The following menus are available:

Menu	Description
Home	Displays your TransactionVision home page.
Views	Provides access to the Component Topology Analysis, Transaction Analysis, and Event Analysis views. See Chapter 3, Using the Component Topology Analysis View, Chapter 4, Using the Transaction Analysis View, Chapter 5, Using the Event Analysis View, and Chapter 6, Using the Event Detail View for instructions on using these views.
Current Project	Provides project status information as well as information about scheduled jobs, communication links, data collection filters, and queries used by the project. For instructions on using queries, see Chapter 2, Configuring Queries. For information about scheduled jobs, data collection filters and communication links, see the *TransactionVision Administration Guide*.
Administration	Provides commands for managing projects, jobs, Analyzers, communication link templates, database schemas, and aliases. For more information about these topics, see the *TransactionVision Administrator's Guide*. This menu is only visible if you have access rights to perform administrative operations. For more information about user access rights, see the *TransactionVision Administration Guide*.

Menu	Description
Reports	Displays the Reports page, which provides links to all reports for which you have the correct access rights. For instructions on using the standard reports installed with TransactionVision, see Chapter 7, Using Reports. For information about creating custom reports, see the *TransactionVision Advanced Customization Guide*.
Logout	Ends your current TransactionVision session and displays the Login page.
Help	Provides access to online help, documentation, version information, and links to support information.

User Information

The User Information area lists the user name you are logged on as. It also lists the date and time of your last logon.

Projects

The Projects area lists all TransactionVision projects that you have access rights to use for analysis. For each project, the project name, status, and optional description are listed.

Click the circle to the left of a project name to make it the active project for your session. When you display the Component Layout Analysis, Transaction Analysis, or Event Analysis views, the views are created with data from the active project.

Click the **Projects** link to display more detailed information about the active project.

Queries

The Queries area lists all available queries for the active project. For each query, the query name and optional description are listed.

Click the circle to the left of a query name to make it the active query for your project. When you display the Component Topology Analysis, Transaction Analysis, or Event Analysis views, the views are created with data from the active project that meets the active query criteria.

Click the **Queries** link to display more detailed information about available queries.

Recently Viewed Reports

The Recently Viewed Reports area lists TransactionVision reports most recently viewed by the current user. Click a report name to access it. Click the **Recently Viewed Reports** link to display a list of all available reports and saved results for each.

Quitting TransactionVision

To end your TransactionVision session, either click **Logout**, close the TransactionVision browser window, or open a web page from a different URL.

Quick Tour

To get a better idea of how TransactionVision helps you identify problems, let's look at some examples of how you might use TransactionVision.

These examples use the Trade Demo Events Sample shipped as part of the TransactionVision web user interface package. On your TransactionVision home page, select **Trade** as your current project.

▶ If this project does not appear on your TransactionVision home page, see the *TransactionVision Administration Guide* for instructions on installing and importing it.

Tracking Messages with TransactionVision

Based on the information collected by TransactionVision, you can pinpoint exactly where a message is at any point in time. This information includes criteria such as which application has the message, which host it is running on, or even which queue is currently holding the messages.

Choose the **Views** > **Transaction Analysis** menu item to open the Transaction Analysis view.

This view shows the progress of the business transaction involving a single message. Each icon represents a local transaction. The icon label shows the name of the program performing the transaction and the time in milliseconds required to complete the local transaction.

The edge label shows the sequence of local transactions within the business transaction. Choose the **Edge & Node** > **Show Transaction Times** menu item to add the exit time for the MQPUT/MQPUT1 and MQGET calls between the local transactions to the edge label, as shown in the following example:
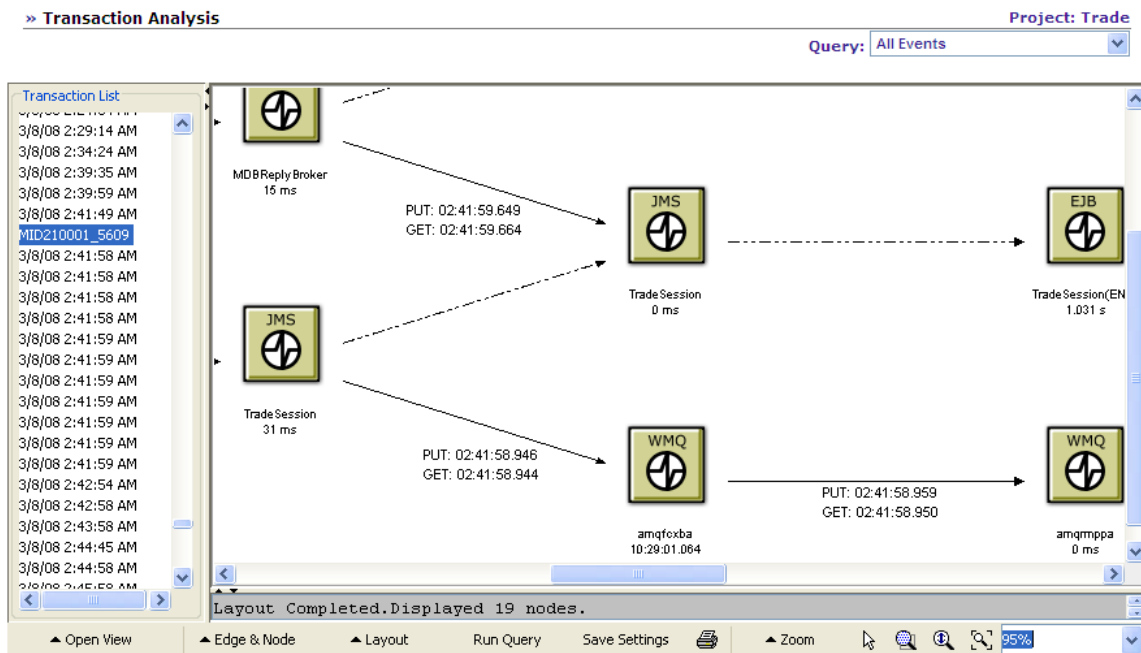
With this view, you can identify the program and technology controlling a message at any time.

To view additional information, such as which queue the message is on at any time, choose the **Open View** > **Event Analysis** view. The Event Analysis view shows more detailed information about the individual events in this business transaction.

To view the EJB name, click **Options** to display the Event Analysis Options page:

» **Event Analysis: Options**

Event Analysis Options

Number of events to display per page: 20

Minimum number of events for a warning message box to be displayed: 100000

☑ Display a warning message box when number of events exceeds the minimum count.

☑ Sort events by event time when the number of events exceeds the minimum count.

☑ Allow bidirectional navigation of the event list when the number of events exceeds the minimum count.

☐ Show event list in reverse chronological order when result set is sorted.

Detail Options

Number of User Data bytes to display: 1024

Time Column Format	Time Zone Option
☑ Show the date along with the time	Set your preferred time zone as:
Show times out to the Millisecond ▾	[GMT -08:00] America/Los_Angeles (Pacific Daylight Time) ▾

Event Analysis Columns

Select the columns of data to display and the order:

☑ Common
☑ EJB
☐ JDBC
☐ JMS
☐ CICS
☐ Servlet
☐ User Event
☐ WebSphere MQ
☐ WebSphere MQ z/OS Batch
☐ WebSphere MQ z/OS IMS
☐ WebSphere MQ i5/OS
☐ Transaction

[All Available Columns]

SQL Type
Status Code
Completion Code
Reason Code
Connection Name
Queue Manager
Object Name
ReplyTo Queue Mananger
ReplyTo Queue
Servlet

[All Selected Columns]

Event Time
Entry Time
Exit Time
API Name
Host Name
Host IP
Program Name
Technology
Data Size
EJB Name

Select EJB Name in the [All Available Columns] list and click the right arrow to move them to the [All Selected Columns] list (if it is not already there), and then click **Finish**. The Event Analysis view should look like the following:

With this view, you can trace the API calls made by each program in this transaction.

To see changes made to the message data during processing, check the boxes next to the first MQGET event and the last MQPUT event for DataFlowEngine, then click **Compare**. The Event Details view opens to provide a side-by-side comparison of these events:

Field	Value		Field	Value
⊟ Event Information			⊟ Event Information	
├ API Name	MQGET		├ API Name	MQPUT
├ CCSID	1252		├ CCSID	1252
├ ClientTimeSkew	00:00:00.000		├ ClientTimeSkew	00:00:00.000
├ CommlinkTimeSkew	00:00:00.003		├ CommlinkTimeSkew	00:00:00.003
├ Encoding	MQENC_NATIVE (546)		├ Encoding	MQENC_NATIVE (546)
├ Host	gatesman8400		├ Host	gatesman8400
├ HostArch			├ HostArch	
│ ├ OS	Windows XP		│ ├ OS	Windows XP
│ └ Vendor	Microsoft		│ └ Vendor	Microsoft
├ HostIPAddress	192.168.1.111		├ HostIPAddress	192.168.1.111
├ EntryTime	03/27/2008 18:49:18.685000		├ EntryTime	03/27/2008 18:50:35.445000
├ ProgramInstance			├ ProgramInstance	
│ ├ ProcessID	6732		│ ├ ProcessID	6732
│ ├ StartTime	03/27/2008 04:57:53.423000		│ ├ StartTime	03/27/2008 04:57:53.423000
│ └ ThreadID	6		│ └ ThreadID	6
├ ProgramName	amqfcxba		├ ProgramName	amqfcxba
├ ProgramPath	C:\Program Files\IBM\WebSphere		├ ProgramPath	C:\Program Files\IBM\WebSphere
├ ExitTime	03/27/2008 18:50:35.194000		├ ExitTime	03/27/2008 18:50:35.445000
├ TechName	WebSphere MQ		├ TechName	WebSphere MQ
├ TimeSkew	00:00:00.000		├ TimeSkew	00:00:00.000
└ UserName	gatesman		└ UserName	gatesman
⊟ API Arguments (Entry)			⊟ API Arguments (Entry)	
├ Buffer			├ Buffer	0x00A943E0
│ └ pointerValue	0x00A943E0		│ ├ MQRFH	
├ BufferLength	1024		│ │ ├ CodedCharSetId	1252
├ CompCode	N/A		│ │ ├ Encoding	MQENC_NATIVE (273)
│ └ pointerValue	0x01BDF8C0		│ │ ├ Flags	0
├ DataLength	0		│ │ ├ Format	MQHRF2
│ └ pointerValue	0x00A8CB0C		│ │ ├ Options	
├ Hconn	0xABD768 (TRADING)		│ │ ├ MQPSCommand	Publish
├ Hobj	0xA81ED0 (SYSTEM.BROKER.DEF/		│ │ ├ MQPSPubOpts	NoReg
│ └ QueueManager	TRADING		│ │ ├ MQPSTopic	REPLY

[Collapse All] [Expand All] [Save As XML] [Collapse All] [Expand All] [Save As XML]

├ <MarginRatio>	0		├ <MarginRatio>	0
├ <OrderType>	Cash		├ <OrderType>	Cash
├ <Product>	FUND		├ <Product>	FUND
├ <Quantity>	12000		├ <Quantity>	12000
├ <Reason>	Normal		├ <Reason>	Normal
├ <RecvAcct>	SE550005		├ <RecvAcct>	SE550005
├ <Region>			├ <Region>	MIDDLE
│ ├ @bgColor	elementUserDataDiff		│ └ @bgColor	elementUserDataDiff
│ └ @parameterName			├ <Status>	EXECUTED
├ <Status>	OPEN		│ └ @bgColor	elementUserDataDiff
│ └ @bgColor	elementUserDataDiff		├ <Transaction>	Transfer
├ <Transaction>	Transfer		└ <UnitPrice>	1.0

Note that the message data for the final MQPUT shows a status of "Executed."

In this example, we traced a complete and successful business transaction; you can use the same steps with a failed or incomplete business transaction to find problems quickly. There are number of ways to identify failed transactions:

- In the Component Topology Analysis view, choose **Edge & Node** > **Edge Color Coding** > **Errors and Warnings** to cause TransactionVision to display error and warning event paths in red.

- Create a query to view only events with a WebSphere MQ completion code, servlet status code, or JMS status code indicating a failure or warning. Use this query with the Event Analysis view to identify errors.

Another way to analyze transactions is to use a transaction analysis report. Click **Reports** to display the Reports page:

Under Reports, click **Where are my transactions?** TransactionVision displays the Transaction Tracking Report.

Report Parameters	
Reporting Time Period:	All Time Periods ▾
Transaction State:	☑ Unspecified ☑ In-Process ☑ Completed
Transaction Result Code:	☑ Unspecified ☑ Success ☑ Failed
Include Transaction Classes:	☑ -Unclassified- ☑ Equity ☑ Fund Transfer ☑ Equity Trading Form [Select All] [Unselect All]
Only show transactions exceeding service level:	☐
Sort by Attribute:	None ▾
Show results in:	Ascending order ▾
Search on Attribute:	None ▾
Search For:	
Results per page:	20

[Generate Report] [Printable View] [Save Settings]

Specify all time periods and click **Generate Report**. TransactionVision creates a report showing information about all transactions that meet the report parameters:

Summary

Class:	-Unclassified-	Start Time:	03/07/2008 10:01:49.488
Response Time:	6.426 sec	SLA:	1.000 sec
State:	Unknown	Result:	Unknown
OrderID:	-	Account:	-
TradeType:	-	TradeAction:	-
Status:	-	Reason:	-
BondIssue:	-	BondMaturity:	-
EquitySymbol:	-	Value:	-
Customer:	-	SessionId:	-
Exception:	-	SLAState:	None

Transaction Flow

ID	Application	Start Time	Elapsed Time (sec)	Latency (sec)
1	TradeServlet on amkilab02 - Servlet	10:01:49.488	0.294	
	→ – TradeSession on amkilab02 - Session (ID = 2)	+0.279	~0.000	
	→ – /main.jsp on amkilab02 - Servlet (ID = 9)	+6.087	~0.000	
2	TradeSession on amkilab02 - Session	10:01:49.767	1.454	
	→ – QualifyTrade on amkilab02 - Session (ID = 3)	+0.209	~0.000	
	→📨→ – amqfcxba on amkilab02 - WMQ (ID = 4)	+0.601	0.088	0.023
	←📨← – MDBReplyBroker on amkilab02 - Message Driven (ID = 8)	+0.468	4.528	0.183
3	QualifyTrade on amkilab02 - Session	10:01:49.976	0.009	
4	amqfcxba on amkilab02 - WMQ	10:01:50.600	0.010	
	←📨← – TradeSession on amkilab02 - Session (ID = 2)	+0.000	~0.000	0.023
	→📨→ – amqrmppa on amkilab02 - WMQ (ID = 5) ⚠	+0.001	0.001	0.001
	→📨→ – amqrmppa on amkilab02 - WMQ (ID = 6)	+0.000	0.001	0.160
	→📨 – TRADING:SYSTEM.JMS.REPORT.QUEUE	+0.002	~0.000	
5	amqrmppa on amkilab02 - WMQ ⚠	10:01:50.602	~0.000	
	←📨← – amqfcxba on amkilab02 - WMQ (ID = 4) ⚠	+0.000	~0.000	0.001
6	amqrmppa on amkilab02 - WMQ	10:01:50.761	~0.000	
	←📨← – amqfcxba on amkilab02 - WMQ (ID = 4)	+0.000	~0.000	0.160
7	topic://REPLY Listener on amkilab02 - JMS	10:01:55.296	0.005	
	←📨 – topic://REPLY	+0.000	~0.000	
	→ – MDBReplyBroker on amkilab02 - Message Driven (ID = 8)	+0.001	~0.000	
8	MDBReplyBroker on amkilab02 - Message Driven	10:01:55.297	0.236	
	→📨→ – TradeSession on amkilab02 - Session (ID = 2)	+0.093	0.012	0.183
9	/main.jsp on amkilab02 - Servlet	10:01:55.854	0.051	
	→ – /status.jsp on amkilab02 - Servlet (ID = 10)	+0.046	~0.000	
10	/status.jsp on amkilab02 - Servlet	10:01:55.900	0.002	

Legend: ← → Control Flow ←📨← →📨→ Message Flow →📨 ←📨 Queue Access →🗋 ←🗋 Resource Access 🗂 Create Thread ✗ Error ⚠ Warning

To view more detailed information about a particular transaction, click its **Transaction Class** link. The Transaction Details page opens. This page provides three tables of information:

- Summary: Provides the Business Transaction ID as well as other information specified in the transaction definition.

- Transaction Flow: Provides information about the local transactions that make up the business transaction. This table also shows message flows and control flows that originate with each local transaction.

Transaction Tracking Report
(6830 transactions, showing 1-20)

Tx Class	Start Time	Response Time	Completion State	Result State	SLA State	Label	OrderID	Account	TradeType	TradeAction	Status	Reason	BondIssue
-Unclassified-	03/07/2008 10:01:12.027	0.00	Unknown	Unknown	None	-	-	-	-	-	-	-	-
-Unclassified-	03/07/2008 10:01:12.028	0.00	Unknown	Unknown	None	-	-	-	-	-	-	-	-
-Unclassified-	03/07/2008 10:01:12.137	0.00	Unknown	Unknown	None	-	-	-	-	-	-	-	-
-Unclassified-	03/07/2008 10:01:32.598	0.04	Unknown	Unknown	None	-	-	-	-	-	-	-	-
-Unclassified-	03/07/2008 10:01:32.668	0.00	Unknown	Unknown	None	-	-	-	-	-	-	-	-
-Unclassified-	03/07/2008 10:01:34.887	0.00	Unknown	Unknown	None	-	-	-	-	-	-	-	-
-Unclassified-	03/07/2008 10:01:34.896	5.80	Unknown	Unknown	None	-	-	-	-	-	-	-	-
-Unclassified-	03/07/2008 10:01:49.488	6.43	Unknown	Unknown	None	-	-	-	-	-	-	-	-
-Unclassified-	03/07/2008 10:01:49.849	1.18	Unknown	Unknown	None	-	-	-	-	-	-	-	-
-Unclassified-	03/07/2008 10:01:49.888	0.57	Unknown	Unknown	None	-	-	-	-	-	-	-	-
-Unclassified-	03/07/2008 10:01:50.386	0.05	Unknown	Unknown	None	-	-	-	-	-	-	-	-
-Unclassified-	03/07/2008 10:01:50.434	60.07	Unknown	Unknown	None	-	-	-	-	-	-	-	-
-Unclassified-	03/07/2008 10:01:50.449	0.00	Unknown	Unknown	None	-	-	-	-	-	-	-	-
-Unclassified-	03/07/2008 10:01:50.453	0.00	Unknown	Unknown	None	-	-	-	-	-	-	-	-
-Unclassified-	03/07/2008 10:01:50.612	0.00	Unknown	Unknown	None	-	-	-	-	-	-	-	-
-Unclassified-	03/07/2008 10:01:50.692	0.00	Unknown	Unknown	None	-	-	-	-	-	-	-	-
-Unclassified-	03/07/2008 10:01:50.859	4.41	Unknown	Unknown	None	-	-	-	-	-	-	-	-
-Unclassified-	03/07/2008 10:01:51.090	0.33	Unknown	Unknown	None	-	-	-	-	-	-	-	-
-Unclassified-	03/07/2008 10:01:53.482	0.75	Unknown	Unknown	None	-	-	-	-	-	-	-	-
-Unclassified-	03/07/2008 10:01:53.748	0.15	Unknown	Unknown	None	-	-	-	-	-	-	-	-

First Page Prev 10 Prev Go to page: 1 ⌄ Next Next 10 Last Page

To view more information for a particular message, click the message flow icon. TransactionVision displays all events in the message flow in the Event Analysis view.

Performance Analysis

You can also use TransactionVision analysis views to analyze the transaction performance for your system. To get started, return to your TransactionVision home page and select the default query for the trade project.

Next, choose **Views** > **Component Topology Analysis**, click **Switch to Dynamic Mode** and set the zoom level to 100%. To identify potential performance bottlenecks, choose **Edge & Node** > **Edge Widths** > **Message Call Count**.
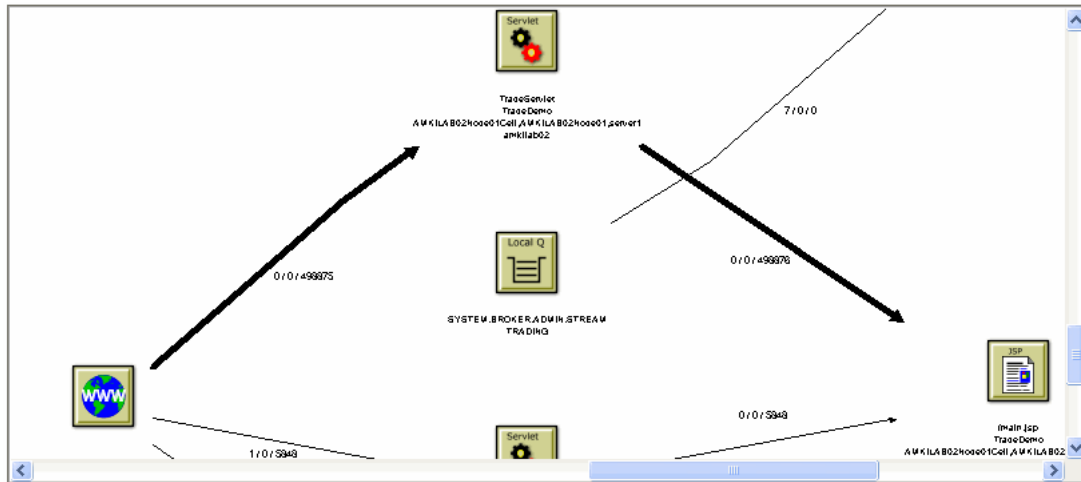
In this view, edge widths reflect the number of put and get calls between components. Choose **Edge & Node** > **Min/Avg/Max Latency Times** to add performance information to the edge labels:
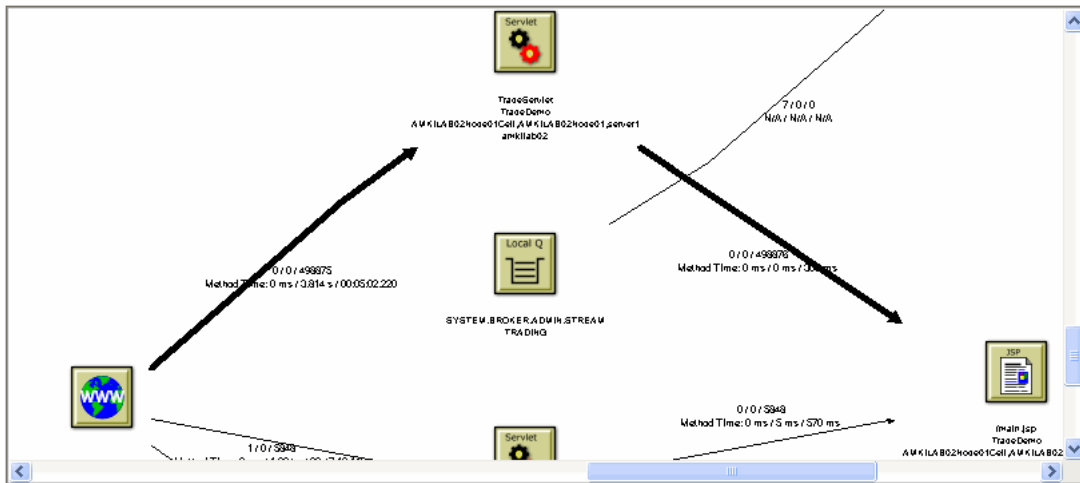
Use this information to identify areas where latency may be too high.

You can also use the Transaction Analysis view to analyze performance of individual local and business transactions. Choose **Views** > **Transaction Analysis** to open this view:
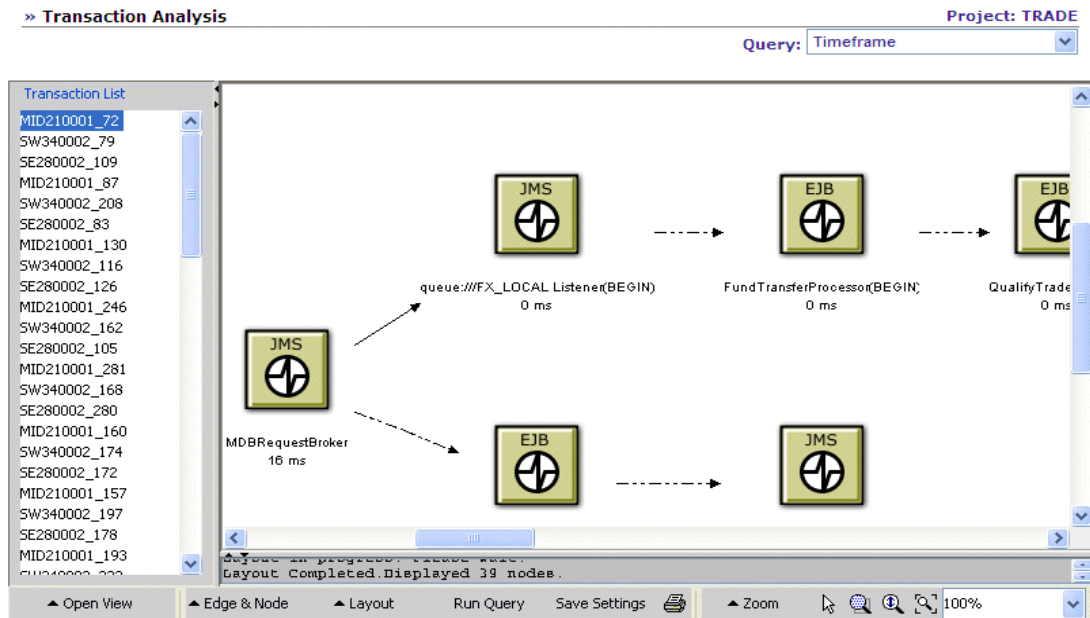
To view performance information, choose **Edge & Node** > **Show Transaction Times** to show the times for the put and get calls between local transactions. Choose **Edge & Node** > **Show Latency** to show the number of milliseconds between the exit times of the put and get calls between the local transactions.
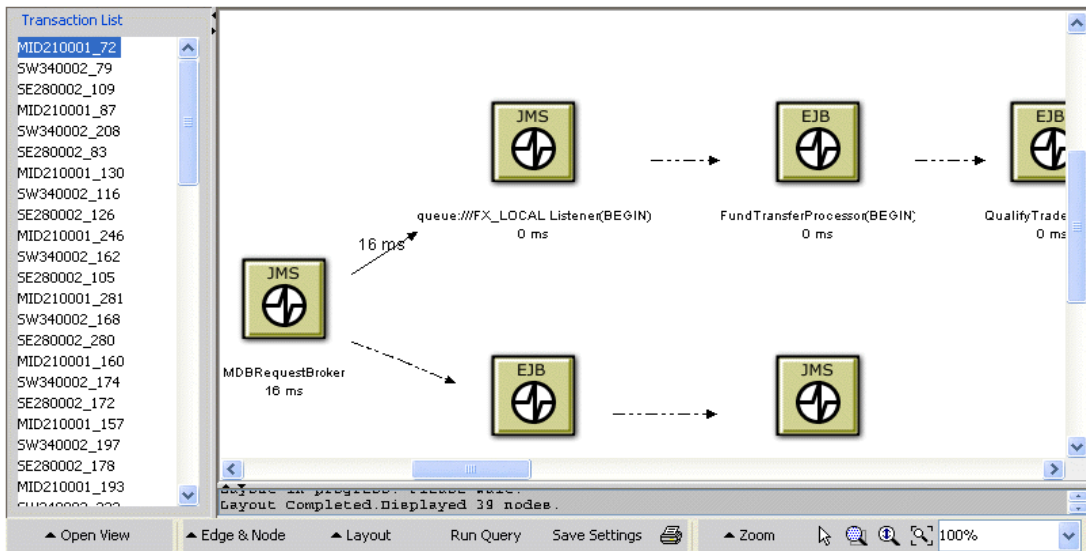
Hint: If you cannot read the edge labels easily, select them and move them above or below the edges.

You can also use reports to monitor and analyze performance. To analyze performance of WebSphere MQ components, click **Reports** to display the Reports page and click the **How are my WebSphere MQ and JMS components performing?** link. TransactionVision displays the WebSphere MQ Statistics Report page.

Choose **All Time Periods** and click **Generate Report**. TransactionVision displays a table showing the number of applications interacting, average latency, and number of put, get, and open calls for each queue.

Report Parameters

Reporting Time Period:	All Time Periods ▼
☐ Queue Filter	*
☐ Queue Manager Filter	*

[Generate Report] [Printable View] [Save Settings]

WebSphere MQ Statistics

Queue Manager	Queue	Applications Interacting	Average Latency (sec)	Puts [success/warning/error]	Gets [success/warning/error]
CSQ1		1	0.11	0 [0/0/0]	1,155 [1,155/0/0]
	CICS.INIT.Q	1	0.11	0 [0/0/0]	1,155 [1,155/0/0]
unknown		1	-	0 [0/0/0]	0 [0/0/0]
	TRADING	1	-	0 [0/0/0]	0 [0/0/0]
TRADING		1	0.05	4,620 [4,620/0/0]	2,310 [2,310/0/0]
	SYSTEM.BROKER.DEFAULT.STREAM	1	0.05	0 [0/0/0]	2,310 [2,310/0/0]
	SYSTEM.JMS.REPORT.QUEUE	1	-	2,310 [2,310/0/0]	0 [0/0/0]
	SYSTEM.JMS.D.CC.SUBSCRIBER.QUEUE	1	-	2,310 [2,310/0/0]	0 [0/0/0]

JMS Statistics

Queue Manager	Queue	Applications Interacting	Average Latency (sec)	Puts [success/warning/error]	Gets [success/warning/error]
TRADING		11	0.03	5,775 [5,775/0]	4,620 [4,620/0]
	FX	1	0.01	385 [385/0]	0 [0/0]
	SYSTEM.BROKER.DEFAULT.STREAM	4	0.03	2,310 [2,310/0]	0 [0/0]
	FX_LOCAL	1	0.01	0 [0/0]	385 [385/0]
	CICSREQUEST	3	0.11	1,155 [1,155/0]	0 [0/0]
	EQUITY	2	0.03	385 [385/0]	385 [385/0]
	BOND	2	0	385 [385/0]	385 [385/0]
	REPLY_FOR_SESSION	2	0.02	1,155 [1,155/0]	1,155 [1,155/0]
	SYSTEM.JMS.D.CC.SUBSCRIBER.QUEUE	2	0.02	0 [0/0]	2,310 [2,310/0]

Similarly, you can click the **How are my Application Server components performing?** link on the Reports page to run the Application Server Statistics Report. This report shows the call count and average latency for each EJB method and servlet.

To view performance information for your entire system, return to the Reports page and click **How is my IT infrastructure performing?** Click **Generate Report** to generate a report showing an overview of performance for transactions, application servers, WebSphere MQ components, and JMS components.

CICS Transactions

The Trade Demo Events Sample includes add, display, delete, and update commands to a CICS VSAM file through 3270 terminal input and query commands to the VSAM file from a transaction invoked by the WebSphere MQ-CICS bridge in response to WebSphere MQ messages on the bridge request queue.

On your TransactionVision home page, select Trade as your current project and choose **Views** > **Component Topology Analysis** to display the Component Topology Analysis for this project:
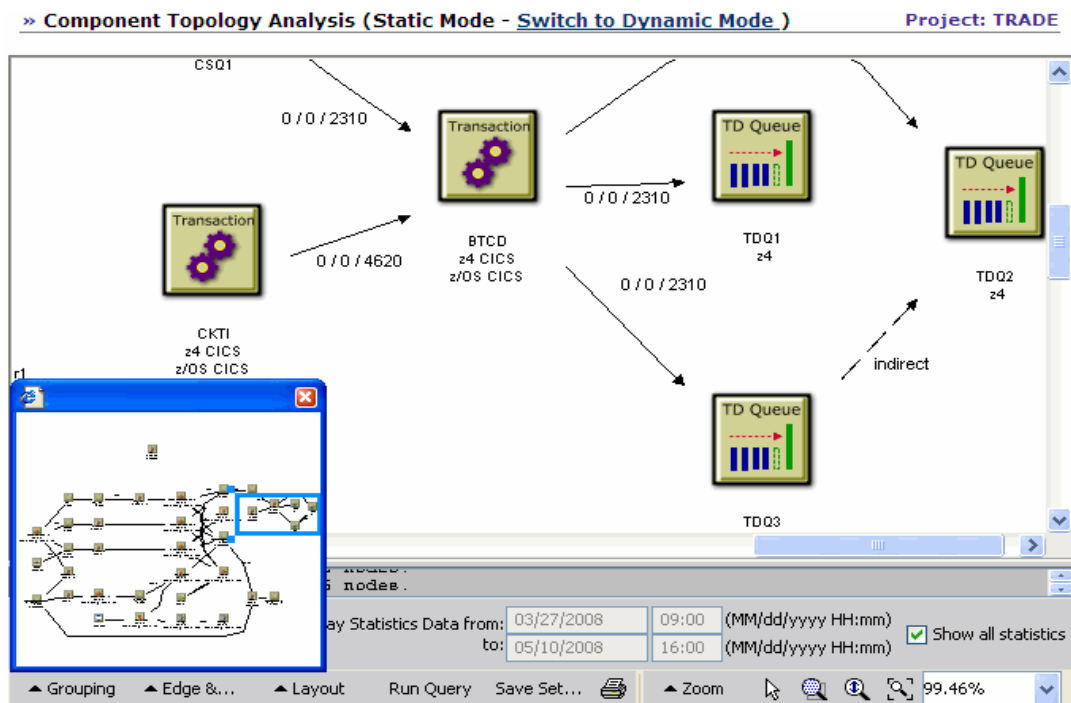
This view shows icons specific to CICS events, such as transactions rather than applications, temporary storage (TS) and transient data (TD) queues, and files.

In a CICS environment, you may want to use a query to limit displayed events to TD queue name I/O events. To modify your current query, choose **Current Project** > **Queries**. TransactionVision displays the current query.

To modify the query, click **Edit Query**. In the Criteria for drop-down list, choose **CICS**. Under the CICS options, click **TD Queue Name**. Check **TDQ1** and **TDQ2** and click **Finish**.

Query Description:	

☑ **Criteria for**	**Criterion Setting for "TD Queue Name"**
CICS ▼	Include ▼ qualified events where the **TD Queue Name** is equal to the following:

Common Options
Event Time
Host
Program/Servlet/EJB
User Name
User Buffer Data
Transaction Attributes
Transaction Class
Transaction Start Time
Transaction End Time
Transaction Response Time
Transaction State
Transaction Result
Transaction Label
Transaction SLA State
CICS
API Name
API Type
File Name
Response Code
SYSID
TD Queue Name
TS Queue ID
Terminal ID
Transaction ID

☐ **Select All TD Queue Name**
☑ TDQ1
☑ TDQ2
☐ TDQ3

Finish	Cancel	Set Criteria	Clear Criteria	Reset All Criteria

To view information about CICS events in the Event Analysis view, you need to modify the Event Analysis options. First, choose **Views** > **Event Analysis** to display the Event Analysis view. Click **Options** to open the Event Analysis Options page.

» Event Analysis: Options

Event Analysis Options

Number of events to display per page: `20`

Minimum number of events for a warning message box to be displayed: `100000`
- ☑ Display a warning message box when number of events exceeds the minimum count.
- ☑ Sort events by event time when the number of events exceeds the minimum count.
- ☑ Allow bidirectional navigation of the event list when the number of events exceeds the minimum count.
- ☐ Show event list in reverse chronological order when result set is sorted.

Detail Options

Number of User Data bytes to display: `1024`

Time Column Format	Time Zone Option

☑ Show the date along with the time

Show times out to the
`Millisecond` ▾

Set your preferred time zone as:

`[GMT -08:00] America/Los_Angeles (Pacific Daylight Time)` ▾

Event Analysis Columns

Select the columns of data to display and the order:

- ☑ Common
- ☐ EJB
- ☐ JDBC
- ☐ JMS
- ☑ CICS
- ☐ Servlet
- ☐ User Event
- ☐ WebSphere MQ
- ☐ WebSphere MQ z/OS Batch
- ☐ WebSphere MQ z/OS IMS
- ☐ WebSphere MQ i5/OS
- ☐ Transaction

[All Available Columns]

z/OS Job Step
z/OS IMS Region ID
z/OS IMS Region Type
z/OS IMS Id
z/OS IMS Transaction
z/OS IMS PSB
i5/OS Job Name
EJB Name
User Event Class
User Event Completion Code

[All Selected Columns]

Event Time
API Name
Host Name
Program Name
Technology
Data Size
CICS Task
CICS SYSID
CICS Transaction
CICS API Type

In the Event Analysis Columns area, check **Common** and **CICS**, and then click **Finish**. The Event Analysis view then displays columns specific to CICS events.

» Event Analysis - 10395 Events (showing 1 through 20)   Project: TRADE

Query:: CICS

▼	Event Time	API Name	Host Name	Program Name	Technology	Data Size	CICS Task	CICS SYSID	CICS Transaction	CICS API Type	CICS Terminal ID	CICS Appl ID	CICS Start Code	CICS Resource ID
☐	03/27/2008 09:13:29.276	START	z4	CSQCTASK	CICS	684				Interval Control		CICS		
☐	03/27/2008 09:13:29.276	TASK START	z4		CICS					Task Start		CICS		
☐	03/27/2008 09:13:29.277	PROGRAM START	z4	CICSDRVR	CICS					Program Start		CICS	SD	
☐	03/27/2008 09:13:29.372	LINK	z4	TCAPTD1	CICS					Program Start		CICS	SD	
☐	03/27/2008 09:13:29.372	WRITEQ TD	z4	TCAPTD1	CICS	30				Transient Data		CICS		TDQ1
☐	03/27/2008 09:13:29.373	WRITEQ TD	z4	TCAPTD1	CICS	30				Transient Data		CICS		TDQ2

[1/520] Page Number: [   ] Go   First Page Prev 10 Prev Next Next 10 Last Pag

Open these events in:	View events as:				
Event Analysis ▾	No Transaction ▾	Clear Checks	Run Query	Detail	Compare	Options

You can also use TransactionVision reports to monitor the performance of CICS transactions. Choose **Reports** to display the TransactionVision Reports page, and click **How did my transactions perform previously?** TransactionVision displays the Transaction Scorecard settings:

» Transaction Scorecard - (Hide)   Project: TRADE

Report Parameters

Reporting Time Period: [All Time Periods ▾]

Include Transaction Classes:
☑ -Unclassified-
☑ Bond
☑ Equity
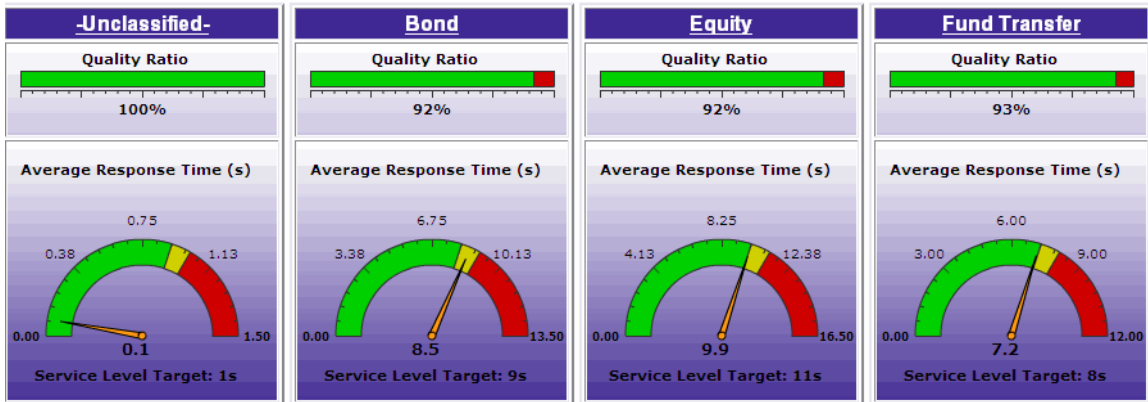☑ Fund Transfer

[Select All] [Unselect All]

[Generate Report] [Printable View] [Save Settings]

Click **Generate Report** to create a report showing average transaction performance for all transaction classes over all time periods recorded in the project:

-Unclassified-	Bond	Equity	Fund Transfer
Quality Ratio	**Quality Ratio**	**Quality Ratio**	**Quality Ratio**
100%	92%	92%	93%
Average Response Time (s)	**Average Response Time (s)**	**Average Response Time (s)**	**Average Response Time (s)**
0.75 0.38 ... 1.13 0.00 ... 1.50 0.1	6.75 3.38 ... 10.13 0.00 ... 13.50 8.5	8.25 4.13 ... 12.38 0.00 ... 16.50 9.9	6.00 3.00 ... 9.00 0.00 ... 12.00 7.2
Service Level Target: 1s	**Service Level Target: 9s**	**Service Level Target: 11s**	**Service Level Target: 8s**

Additional TransactionVision Resources

The following documents are provided with TransactionVision:

- The *TransactionVision Planning Guide* provides information to help you plan the TransactionVision implementation in your environment.

- The *TransactionVision Web Application Installation and Configuration Guide* provides instructions for installing and configuring the TransactionVision web user interface. This file is also available from the TransactionVision Help menu.

- The *TransactionVision Sensor Installation and Configuration Guide* provides instructions for installing and configuring TransactionVision Sensors. This file is also available from the TransactionVision Help menu.

- The *TransactionVision Analyzer Installation and Configuration Guide* provides instructions for installing and configuring the Analyzer, as well as configuring your database to work with TransactionVision. This file is also available from the TransactionVision Help menu.

- The *TransactionVision Administration Guide* provides instructions managing user accounts and communication links, configuring projects and data collection filters, and managing services and schemas. This file is also available from the TransactionVision Help menu.

- The *TransactionVision Advanced Customization Guide* provides information for creating custom beans and reports for use with TransactionVision.

- The *TransactionVision Security Guide* provides an overview of the security features and setup procedures of TransactionVision. These features and procedures ensure that data collected by TransactionVision is secure and accessible to the appropriate people.

2 Configuring Queries

Queries control which events in the project database are actually displayed in the TransactionVision views. Query conditions such as Hosts, Queue Managers, Programs, Time, and APIs enable you to restrict displayed events to those you need to identify for analysis or to resolve a problem. Only events that meet the selected filter conditions are displayed by TransactionVision.

Queries are created within each project definition, and are not shared between projects. You may create any number of queries for a project, but only one query may be active at any time.

Standard Queries

When you create a new project, two queries are automatically created: one that includes all events and one that includes all events from the last 24 hours.

You may add any number of additional queries. However, only one query may be active for the project at any time.

Choose an Active Query

Your home page lists the queries already created for the current project. This list shows the query name and optional description. Click the radio button to the left of the query name to make it the active query for your project. The next time you display the Component Topology Analysis, Transaction Analysis, or Event Analysis view, only events that match all query conditions are used to create the view.

Click to view Project Queries page.

Click to make this query active.

User Information

User: Admin

Last Logon: 5/10/08 5:21 PM

Projects

○ AS/400   active

○ TEST   inactive

⊙ **Trade**   active

Queries

○ MQPUT/MQPUT1

○ Java Events

○ JMS REPLY_FOR_SESSION

○ EJB

○ Save Trade

Recently Viewed Reports

How are my WebSphere MQ and JMS components performing?

How are my current transactions performing?

What are my charge-back costs for the transactional infrastructure?

Where are my transactions?

Am I meeting my Service Level response requirements?

More Reports...

If you need more information about query definitions before choosing one, click the **Queries** link or choose the **Current Project** > **Queries** menu item. The Project Queries page appears.

| Home | Views | **Current Project** | Administration | Reports | Logout | Help |

Query List

- ○ All Events
- ○ Last 24 Hours
- ◉ No WMQ Listener
- ○ Ray Temp
- ○ ejb
- ○ jdbc execute
- ○ servlet

Query Detail

Technology: BTTrace
Program/Servlet/EJB is not equal to amqfcxba, amqrmppa
Technology: CICS
Program/Servlet/EJB is not equal to amqfcxba, amqrmppa
Technology: EJB
Program/Servlet/EJB is not equal to amqfcxba, amqrmppa
Technology: JDBC
Program/Servlet/EJB is not equal to amqfcxba, amqrmppa
Technology: JMS
Program/Servlet/EJB is not equal to amqfcxba, amqrmppa
Technology: Servlet
Program/Servlet/EJB is not equal to amqfcxba, amqrmppa
Technology: WebSphere MQ
Program/Servlet/EJB is not equal to amqfcxba, amqrmppa
Technology: WebSphere MQ IMS Bridge
Program/Servlet/EJB is not equal to amqfcxba, amqrmppa
Technology: User Event
Program/Servlet/EJB is not equal to amqfcxba, amqrmppa

[New Query...]   [Edit Query...]   [Delete Query]

This view displays the query conditions for each query. Click the radio button next to a query name to make it the active query.

Add a New Query

To add a new query to a project, perform the following steps:

1   On the Project Queries page, click **New Query...** to display the Add Query page.

2 Enter the query name. This name is used in the list of queries on your TransactionVision home page and the Project Queries page. It is also displayed on the Component Topology Analysis, Transaction Analysis, and Event Analysis views.

3 Enter a brief description of the query (optional). This description is included in the list of queries on your TransactionVision home page.

4 Check each technology you want to include in your query, or check All Technologies to include events for all technologies. This option provides a quick way to create a query for all events for a specific technology. However, you may still specify additional criteria for each technology you select, or you specify criteria for other technologies.

5 Click **Next>** to display the Add/Edit Criteria page.

The left side of the page lists all query conditions that you may change. The right side shows the setting for the currently selected criteria.

| Home | Views | **Current Project** | Administration | Reports | Logout | Help |

» **Edit Query: Add/Edit Criteria**

Project: Trade
Query: All_Techs[1]

Query Description: [ ]

☑ **Criteria for**
All Technologies ▼

Common Options
Event Time
Host
Program/Servlet/EJB
User Name
User Buffer Data
Transaction Attributes
Transaction Class
Transaction Start Time
Transaction End Time
Transaction Response Time
Transaction State
Transaction Result
Transaction Label
Transaction SLA State

Criterion Setting for "Event Time"

Include qualified events where the **Event Time** is:

Time Mode
○ Any Time
○ Before a point in time
○ After a point in time
○ Within a time frame
○ Within a rolling period before the current time
⦿ Within a rolling period before the last event

Time Settings
Time Period: [24] hour(s) [0] minute(s) [0] second(s)

Summary
Technology: BTTrace
Event Time is in the last 24 hours prior to the last collected event

[Finish] [Cancel] [Set Criteria] [Clear Criteria] [Reset All Criteria]

6   Click the criteria category name on the left side for the condition that you wish to change from the default value and make desired changes on the right side of the page. See Query Conditions on page 57 for instructions on setting criteria for each condition.

7   Click **Set Criteria** to save your settings for the current category. To clear changes for the current category, click **Clear Criteria**. To reset all categories to the default criteria, click **Reset All Criteria**.

8   On the top left corner, there is a technology drop-down box to switch between groups of different technologies. Note that there is a checkbox on the left side of the box, which indicates whether querying on the given technology is enabled or not. Clicking on this checkbox will toggle the status.

9   When all query criteria are set, click **Finish**.

Edit a Query

Perform the following steps to edit a query for a project:

1   On the Project Queries page, select the query you wish to edit and click **Edit Query...** to display the Add/Edit Criteria page. See the figure in step 5 in the previous section, Add a New Query on page 53.

     The left side of the page lists all filter conditions that you may change. The right side shows the setting for the currently selected criteria.

2   Click the criteria category name on the left side for the condition that you wish to change and make desired changes on the right side of the page. See Query Conditions on page 57 for instructions on setting criteria for each condition.

3   Click **Set Criteria** to save your settings for the current category. To clear changes for the current category, click **Clear Criteria**. To reset all categories to the default criteria, click **Reset All Criteria**.

4   On the top left corner, there is a technology drop-down box to switch between groups of different technologies. Note that there is a checkbox on the left side of the box, which indicates whether querying on the given technology is enabled or not. Clicking on this checkbox will toggle the status.

5   When all query criteria are set, click **Finish**.

Deleting a Query

To delete a query, select it on the Project Queries page and click **Delete Query**.

Optimizing Query Performance

To improve the performance of queries and views, include only those technologies that your query uses. For example, if your query only includes WebSphere MQ criteria, say a WebSphere MQ object, then disable all other technologies except WebSphere MQ to make your query faster. To disable a technology, clear the checkbox, next to the combo box, on the left side of the query page.

For most criteria, TransactionVision uses a database lookup table, which stores a set of predefined key values along with event IDs. However, it uses a linear search for the User Buffer Data, WebSphere MQ WBI Broker, and WebSphere MQ WBI Message Flow Name criteria. Although linear searching enhances query capabilities, it reduces query performance. If you include these criteria in your query, query performance will be degraded. To minimize the impact on query performance, try not to use these criteria together in the same query.

Another drawback of linear searches is that the resulting views would not know the number of events that match the query conditions. This results in limited page navigation capabilities in the TransactionVision web interface since the number of events and result pages is unknown. For example, after running a query that contains a query condition for event User Buffer data, the Event Analysis view would show page forward and backward options, but would not provide the number of events, the number of event pages, or controls to navigate to a particular page.

Query Conditions

The left side of the Add/Edit Criteria page lists all the criteria categories for queries. Only events that match the criteria for each category are displayed in the TransactionVision views.

Criteria For

Select the technology for which you wish to specify query criteria from the drop-down list. You may specify criteria that apply to all technologies, or you may specify criteria specific to the CICS, BTTrace, EJB, JMS, Servlet, WebSphere MQ, WebSphere MQ IMS Bridge, or user defined events.

Check the Criteria for box for the selected technology to include events for the selected technology in your query results, or clear the box to exclude events for the selected technology from your query results. For example, to include only JMS events, clear the checkbox for all other technologies.

Common Options:

The common options apply to all technologies. However, if you specify a criteria for All Technologies, you may specify a different criteria for an individual technology. The setting for the individual technology overrides the setting for all technologies. For example, suppose you select All Hosts for All

Technologies, but on the Host page for the JMS technology, you may select only the host Host1. JMS events originating on Host1 and other technology events originating on any host all match the query criteria.

Event Time

Time Mode

○ Any Time
○ Before a point in time
○ After a point in time
● Within a time frame
○ Within a rolling period before the current time
○ Within a rolling period before the last event

Time Settings

Start Time: Date (MM-dd-yyyy) 3-27-2008   Time (HH:mm:ss) 17:12:56

End Time: Date (MM-dd-yyyy) 3-27-2008   Time (HH:mm:ss) 17:12:56

Time Zone: [GMT -08:00] America/Los_Angeles (Pacific Daylight Time)

When you create a new query, the default event time is events from the last 24 hours, relative to the last collected event. For example, if the time and date of last event in the project is 07:56 on 7-22-2005, the query will include events collected since 07:56 on 7-21-2005.

1   Select the time mode. The Any Time mode means there is no condition on event time. Other modes require a time setting.

2   For time modes other than Any Time, specify the time settings. Depending on the time mode, time settings may require you to specify a start and end time, a start time, an end time, or a rolling time period.

Host

Criterion Setting for "Host"

Include ∨ qualified events where the **Host** is equal to the following:

☑ **Select All Host**
☐ AMKILAB02
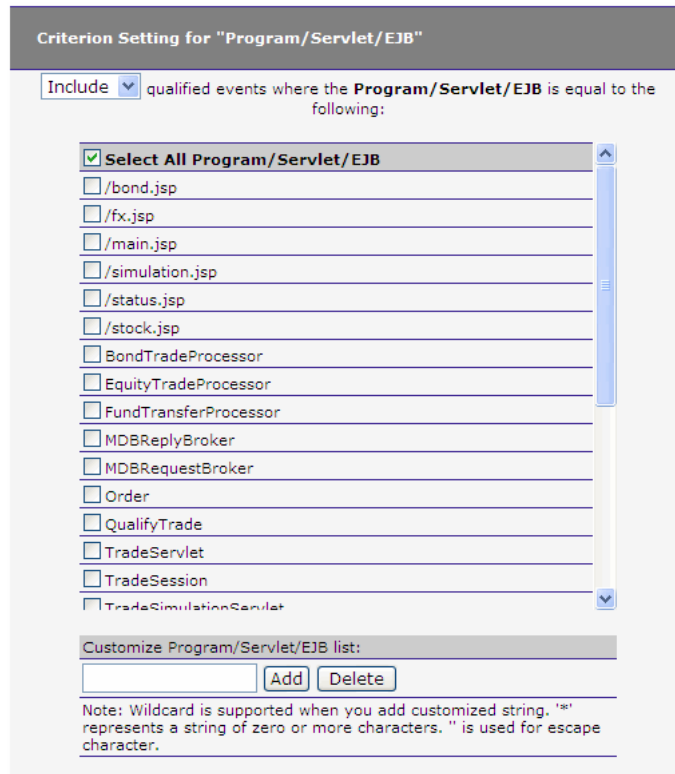☐ amkilab02
☐ ovrntt117

Customize Host list:

[   ] [Add] [Delete]

Note: Wildcard is supported when you add customized string. '*' represents a string of zero or more characters. '' is used for escape character.

1   Select whether to Include or Exclude selected hosts in the query criteria.

2   Check the box next to each host you want to include specifically in the query criteria, or check the box next to Select All Host to include all hosts in the query criteria. The host list is generated from events collected in the project database.

3   In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, enter it in the Customize Host list field and click **Add**. To remove a host from the list, check the box next to the host and click **Delete**.

In a customized query, the * character represents zero or more characters, and the double quote (") character represents an escape.

Program/Servlet/EJB

Criterion Setting for "Program/Servlet/EJB"

Include ▾ qualified events where the **Program/Servlet/EJB** is equal to the following:

☑ **Select All Program/Servlet/EJB**
☐ /bond.jsp
☐ /fx.jsp
☐ /main.jsp
☐ /simulation.jsp
☐ /status.jsp
☐ /stock.jsp
☐ BondTradeProcessor
☐ EquityTradeProcessor
☐ FundTransferProcessor
☐ MDBReplyBroker
☐ MDBRequestBroker
☐ Order
☐ QualifyTrade
☐ TradeServlet
☐ TradeSession
☐ TradeSimulationServlet

Customize Program/Servlet/EJB list:

[   ] [Add] [Delete]

Note: Wildcard is supported when you add customized string. '*' represents a string of zero or more characters. '' is used for escape character.

1   Select whether to include or exclude events from selected programs, servlets, or EJBs.

2   Check the box next to each program, servlet, or EJB you want to include specifically in the query criteria, or check the box next to Select All Program/Servlet/EJB to include all programs, servlets, and EJBs in the query criteria. The program/servlet/EJB list is generated from events collected in the project database.

3   In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, enter it in the Customize Program/Servlet/EJB list field and click **Add**. To remove a program, servlet or EJB from the list, check the box next to the program, servlet or EJB and click **Delete**.

In a customized query, the * character represents zero or more characters, and the double quote (") character represents an escape.

User Name

1 Select whether to Include or Exclude selected user names in the query criteria.

2 Check the box next to each user name you want to include specifically in the query criteria, or check the box next to Select All User Name to include all user names in the query criteria. The user name list is generated from events collected in the project database.

3 In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, enter it in the Customize User Name list field and click **Add**. To remove a user name from the list, check the box next to the user name and click **Delete**.

In a customized query, the * character represents zero or more characters, and the double quote (") character represents an escape.

User Buffer Data

▶ The TransactionVision Analyzer can be configured to use an XML Event Compression bean, which can reduce the size of the resulting event database. However, if this bean is in use by the Analyzer, it is not possible to query on the user buffer data.

Criterion Setting for "User Buffer Data"

Include qualified events where the **user data** contains

Data to search

○ Binary string: [_____]

⦿ Normal string: [_____] (Code Page:

UTF-8 / 01208 / UTF-8 [▼])

Where to search

⦿ Search in user data

○ Search in event XML

1   Click the appropriate radio button to indicate whether the specified user data is in binary string or normal string format and enter the buffer data. For normal string format, select the correct code page. To query on a double-byte character set (DBCS) string, you may either type in the DBCS text string or enter the binary representation of the text.

2   Specify where to search. If you have non-XML based user data in events, select Search in user data. If you have XML user data and have enabled the DefaultModifierBean in the Analyzer, select Search in event XML to search for strings in that XML data.

▶   User Buffer Data is not supported for SQL Server.

TransactionVision uses linear searching for this criteria. Although linear searching enhances query capabilities, it reduces query performance. If you include this criteria in your query, query performance will be degraded. To minimize the impact on query performance, try not to use this criteria with the other linear search criteria (WebSphere MQ WBI Broker and WebSphere MQ WBI Message Flow Name) in the same query.

Transaction Query criteria

The transaction related query criteria follow the same basic rules as other query criteria, allowing a user to add criteria based on the transaction that the event was a part of. For example, you can now combine asking for all events that have a certain program name, with the additional criteria of - only if they are part of a transaction that has been marked as failed.

The new options available are:

Transaction Class: query on selected transaction class.

Transaction Starttime: query on when the transaction starts.

Transaction Endtime: query on when the transaction ends.

Transaction Response Time: query on the response time, in milli seconds, of the transaction.

Transaction State: select events from transactions that are in a Completed/
Processing/Unknown state.

Transaction Result: select events from transactions that have a Failed/
Success/Unknown result.

Transaction Label: select events from transactions based on matching the
transaction label.

Transaction SLA State: query on the SLA state of Aged out/None/Violated.

BTTrace Criteria:

The following options are only available when BTTrace is the current
"Criteria For:" technology.

API Name

1 Select whether to Include or Exclude events for selected BTTRACE APIs. Applications may use the BTTRACE function provided by the Sensor library to send user-defined trace messages to the Analyzer.

2 Check the box next to each API you want to include specifically in the query criteria, or check the box next to Select All API NAME to include all BTTRACE APIs in the query criteria. For more information about BTTRACE APIs, see the *TransactionVision Administrator's Guide*.

Severity

1 Select whether to Include or Exclude events for selected BTTRACE severity levels. Applications may use the BTTRACE function provided by the Sensor library to send user-defined trace messages to the Analyzer.

2 Check the box next to each severity you want to include specifically in the query criteria, or check the box next to Select All Severity to include all BTTRACE severity levels in the query criteria. For more information about BTTRACE severity levels, see the *TransactionVision Administrator's Guide*.

CICS Criteria:

The following options are only available when CICS is the current "Criteria for" technology.

API Name

1 Select whether to Include or Exclude events for selected APIs.

2 Check the box next to each API you want to include specifically in the query criteria, or check the box next to Select All API Name to include all APIs in the query criteria.

API Type

1 Select whether to Include or Exclude events for selected API types.

2   Check the box next to each API type you want to include specifically in the query criteria, or check the box next to Select All API Type to include all API types in the query criteria.

File Name

1   Select whether to Include or Exclude events for selected file names.

2   Check the box next to each file name you want to include specifically in the query criteria, or check the box next to Select All File Name to include all file names in the query criteria. The list of file names is generated from events collected in the project database.

3   In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, enter it in the Customize File Name list field and click **Add**. To remove a file name from the list, check the box next to the file name and click **Delete**.

In a customized query, the * character represents zero or more characters, and the double quote (") character represents an escape.

Response Code

1   Select whether to Include or Exclude events for selected response codes.

2   Check the box next to each response code you want to include specifically in the query criteria, or check the box next to Select All Response Code to include all response codes in the query criteria.

SYSID

1   Select whether to Include or Exclude events for selected SYSID values.

2   Check the box next to each SYSID you want to include specifically in the query criteria, or check the box next to Select All SYSID to include all SYSID values in the query criteria. The list of SYSID values is generated from events collected in the project database.

3   In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, enter it in the Customize SYSID list field and click **Add**. To remove a SYSID value from the list, check the box next to the SYSID value and click **Delete**.

In a customized query, the * character represents zero or more characters, and the double quote **(")** character represents an escape.

TD Queue Name

1   Select whether to Include or Exclude events for selected transient data (TD) queue names.

2   Check the box next to each TD queue name you want to include specifically in the query criteria, or check the box next to Select All TD Queue Name to include all TD queue names in the query criteria. The list of TD queue names is generated from events collected in the project database.

3   In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, enter it in the Customize TD Queue Name list field and click **Add**. To remove a TD queue name from the list, check the box next to the TD queue name and click **Delete**.

In a customized query, the * character represents zero or more characters, and the double quote **(")** character represents an escape.

TS Queue ID

1   Select whether to Include or Exclude events for selected temporary storage (TS) queue IDs.

2   Check the box next to each TS queue ID you want to include specifically in the query criteria, or check the box next to Select All TS Queue ID to include all TS queue IDs in the query criteria. The list of TS queue IDs is generated from events collected in the project database.

3   In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, enter it in the Customize TS Queue ID list field and click **Add**. To remove a TS queue ID from the list, check the box next to the TS queue ID and click **Delete**.

In a customized query, the * character represents zero or more characters, and the double quote **(")** character represents an escape.

Terminal ID

1   Select whether to Include or Exclude events for selected terminal IDs.

2   Check the box next to each terminal ID you want to include specifically in the query criteria, or check the box next to Select All Terminal ID to include all terminal IDs in the query criteria. The list of terminal IDs is generated from events collected in the project database.

3   In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, enter it in the Customize Terminal ID list field and click **Add**. To remove a Terminal ID from the list, check the box next to the Terminal ID and click **Delete**.

In a customized query, the * character represents zero or more characters, and the double quote (") character represents an escape.

Transaction ID

1   Select whether to Include or Exclude events for selected transaction IDs.

2   Check the box next to each transaction ID you want to include specifically in the query criteria, or check the box next to Select All Transaction ID to include all transaction IDs in the query criteria. The list of transaction IDs is generated from events collected in the project database.

3   In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, enter it in the Customize Transaction ID list field and click **Add**. To remove a transaction ID from the list, check the box next to the transaction ID and click **Delete**.

In a customized query, the * character represents zero or more characters, and the double quote (") character represents an escape.

EJB Criteria:

The following options are only available when EJB is the current "Criteria For:" technology.

Application Server

1 Select whether to Include or Exclude events for selected application servers.

2 Check the box next to each application server you want to include specifically in the query criteria, or check the box next to Select All Application Server to include all application servers in the query criteria. The list of application servers is generated from events collected in the project database.

3   In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, enter it in the Customize Application Server list field and click **Add**. To remove an application server from the list, check the box next to the application server and click **Delete**.

In a customized query, the * character represents zero or more characters, and the double quote **(")** character represents an escape.

EJB Application

1   Select whether to Include or Exclude events for selected EJB applications.

2   Check the box next to each EJB application you want to include specifically in the query criteria, or check the box next to Select All EJB Application to include all EJB applications in the query criteria. The list of EJB applications is generated from events collected in the project database.

3   In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, enter it in the Customize EJB Application list field and click **Add**. To remove an EJB application from the list, check the box next to the EJB application and click **Delete**.

In a customized query, the * character represents zero or more characters, and the double quote **(")** character represents an escape.

EJB Name

1   Select whether to Include or Exclude events for selected EJB names.

2   Check the box next to each EJB name you want to include specifically in the query criteria, or check the box next to Select All EJB Name to include all EJB names in the query criteria. The list of EJB names is generated from events collected in the project database.

3   In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, enter it in the Customize EJB Name list field and click **Add**. To remove an EJB name from the list, check the box next to the EJB name and click **Delete**.

In a customized query, the * character represents zero or more characters, and the double quote **(")** character represents an escape.

EJB Method

1 Select whether to Include or Exclude events for selected EJB methods.

2 Check the box next to each EJB method you want to include specifically in the query criteria, or check the box next to Select All EJB Method to include all EJB methods in the query criteria. The list of EJB methods is generated from events collected in the project database.

3 In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, enter it in the Customize EJB Method list field and click **Add**. To remove an EJB method from the list, check the box next to the EJB method and click **Delete**.

In a customized query, the * character represents zero or more characters, and the double quote (") character represents an escape.

EJB Status

1 Select whether to Include or Exclude events for the selected EJB status.

2 Check Failure to include only failed EJB events, or check Success to include only successful EJB events. Check Select All EJB Status to include successful and failed EJB events in the query criteria.

JDBC Criteria:

The following options are only available when JDBC is the current "Criteria For:" technology.

JDBC Application Server

1   Select whether to Include or Exclude events for selected JDBC application servers

2   Check the box next to each application server you want to include specifically in the query criteria, or check the box next to Select All Application Server to include all application servers in the query criteria. The list of application servers is generated from events collected in the project database.

3   In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, enter it in the Customize Application Server list field and click **Add**. To remove an application server from the list, check the box next to the application server and click **Delete**.

In a customized query, the ***** character represents zero or more characters, and the double quote **(")** character represents an escape.

JDBC Class

1   Select whether to Include or Exclude events for selected JDBC classes.

2   Check the box next to each JDBC class you want to include specifically in the filter criteria, or check the box next to All JDBC Class to include all classes in the query criteria.

JDBC Database

1   Select whether to Include or Exclude events for selected JDBC database.

2   Check the box next to each database you want to include specifically in the filter criteria, or check the box next to Select All Database to include all databases in the query criteria.

3   In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, enter it in the Customize Database list field and click **Add**. To remove a database from the list, check the box next to the database and click **Delete**.

In a customized query, the ***** character represents zero or more characters, and the double quote **(")** character represents an escape.

JDBC Database Object

Criterion Setting for "Database Object"

Include ⌄ qualified events where the **Database Object** is equal to the following:

☑ **All Entries**

Objects by Owners	
ANOTHER_TRADE	Schema
☐ BUSINESS_TRANSACTION	Table
TRADE	Schema
☐ BUSINESS_TRANSACTION	Table
YET_ANOTHER_TRADE	Schema
☐ BUSINESS_TRANSACTION	Table
TVISION	Schema
☐ SCHEMA_VERSION	Table
☐ ID_TABLE	Table

Independent Objects

⦿ Find events that access all selected objects

◯ Find events that access any one of the selected objects

Customize Database Object list:

Owner: ANOTHER_TRADE ⌄   Database Object:

[   ] Add   Delete

Note: Wildcard is supported when you add customized string. '*' represents a string of zero or more characters. " is used for escape character.

1   Select whether to Include or Exclude events that make use of certain database objects

2   Check the box next to each database object you want to include specifically in the filter criteria, or check the box next to All Entries to include all objects in the query criteria.

Database objects are grouped by the schema that they belong to. For example, selecting a database table 'X' under schema 'Y' will only select JDBC events that access table 'X', if table 'X' is being used under schema 'Y'. Additionally by selecting a schema, you can filter on all tables that might occur under that schema.

3   Select whether to find events that access all selected objects, or find events that access any one of the selected objects.

4   The list of database objects is generated from events collected in the project database. To add a custom database object to the list, select the schema you want this database object to be under, enter the database object name and click **Add**. To remove a custom database object from the list, check the box next to it and click **Delete**.

JDBC Result Code

1   Select whether to Include or Exclude events that have a particular result code.

2   Check the box next to each result code you want to include specifically in the filter criteria, or check the box next to Select All Result Code to include all result codes in the query criteria. Result codes can be: Failure, Success or Warning.

SQL Code

SQL Code does not provide prefilled values. Any values you want to query on must be first entered.

1   To add an SQL code to the list, enter its name and click **Add**. To remove an SQL code from the list, check the box next to it and click **Delete**.

2   Select whether to Include or Exclude events that have a particular SQL Code.

3   Check the box next to each SQL code you want to include specifically in the filter criteria, or check the box next to Select All SQL Code to include all SQL codes in the query criteria.

SQL Codes used by the JDBC application vary based on the underlying database vendor.

SQL State

SQL State does not provide prefilled values. Any values you want to query on must be first entered.

1 To add an SQL state to the list, enter its name in the Customize SQL State list field and click **Add**. To remove an SQL state from the list, check the box next to it and click **Delete**.

2 Select whether to Include or Exclude events that have a particular SQL state.

3 Check the box next to each SQL state you want to include specifically in the filter criteria, or check the box next to Select All SQL State to include all SQL states in the query criteria.

   Similar to SQL Codes, SQL States used by the JDBC application vary based on the underlying database vendor.

SQL Statement

1 Select whether to Include or Exclude events that have a particular SQL statement.

2 Check the box next to each SQL statement you want to include specifically in the filter criteria, or check the box next to Select All SQL Statement to include all SQL statements in the query criteria.

SQL Statement Type

1 Select whether to Include or Exclude events for a particular SQL statement type.

2 Check the box next to the statement type (such as Select, Merge, Insert, and Update) you want to include specifically in the filter criteria, or check the box next to Select All SQL Statement Type to include all statement types in the query criteria.

Web Application

1 Select whether to Include or Exclude events for selected web applications.

2   Check the box next to each web application you want to include specifically in the filter criteria, or check the box next to Select All Web Application to include all web applications in the filter criteria. The list of web applications is generated from events collected in the project database.

3   In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, enter it in the Customize Web Application list field and click **Add**. To remove a web application from the list, check the box next to the web application and click **Delete**.

In a customized query, the * character represents zero or more characters, and the double quote (") character represents an escape.

JMS Criteria:

The following options are only available when JMS is the current "Criteria For:" technology.

Web Application

1 Select whether to Include or exclude Events for selected web applications.

2 Check the box next to each web application you want to include specifically in the query criteria, or check the box next to Select All Web Application to include all web applications in the query criteria. The list of web applications is generated from events collected in the project database.

3 In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, enter it in the Customize Web Application list field and click **Add**. To remove a web application from the list, check the box next to the Web application and click **Delete**.

In a customized query, the * character represents zero or more characters, and the double quote (") character represents an escape.

Class

1 Select whether to Include or Exclude events for selected JMS classes.

2 Check the box next to each JMS class you want to include specifically in the query criteria, or check the box next to Select All Class to include all classes in the query criteria. The list of classes is generated from events collected in the project database.

Method

1 Select whether to Include or Exclude events for selected JMS methods.

2 Check the box next to each JMS method you want to include specifically in the query criteria, or check the box next to Select All Method to include all methods in the query criteria. The list of methods is generated from events collected in the project database.

Connection Name

1   Select whether to Include or Exclude events for selected connection names.

2   Check the box next to each connection name you want to include specifically in the query criteria, or check the box next to Select All Connection Name to include all connection names in the query criteria. The list of connection names is generated from events collected in the project database.

3   In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, enter it in the Customize Connection Name list field and click **Add**. To remove a connection name from the list, check the box next to the connection name and click **Delete**.

    In a customized query, the * character represents zero or more characters, and the double quote (") character represents an escape.

JMS Topic

1   Select whether to Include or Exclude events for selected JMS topics.

2   Check the box next to each JMS topic you want to include specifically in the query criteria, or check the box next to All Entries to include all JMS topics in the query criteria. The list of JMS topics is generated from events collected in the project database.

3   In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, enter it in the Customize JMS Topic list field and click **Add**. To remove a JMS topic from the list, check the box next to the topic and click **Delete**.

    In a customized query, the * character represents zero or more characters, and the double quote (") character represents an escape.

JMS Queue

1   Select whether to Include or Exclude events for selected JMS queues.

2   Check the box next to each queue you want to include specifically in the query criteria, or check the box next to All Entries to include all JMS queues in the query criteria. The list of JMS queues is generated from events collected in the project database.

3   In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, enter it in the Customize JMS Queue list field and click **Add**. To remove a JMS queue from the list, check the box next to the JMS queue and click **Delete**.

In a customized query, the * character represents zero or more characters, and the double quote (") character represents an escape.

WebSphere MQ Queue Manager

1   Select whether to Include or Exclude events for selected WebSphere MQ queue managers.

2   Check the box next to each queue you want to include specifically in the query criteria, or check the box next to Select All WebSphere MQ Queue Manager to include all queue managers in the query criteria. The list of queue managers is generated from events collected in the project database.

3   In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, enter it in the Customize WebSphere MQ Queue Manager list field and click **Add**. To remove a queue manager from the list, check the box next to the queue manager and click **Delete**.

In a customized query, the * character represents zero or more characters, and the double quote (") character represents an escape.

WebSphere MQ Queue

1   Select whether to Include or Exclude events for selected WebSphere MQ queues.

2   Check the box next to each queue you want to include specifically in the query criteria, or check the box next to Select All WebSphere MQ Queue to include all queues in the query criteria. The list of queues is generated from events collected in the project database.

3   In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, select the queue manager in the Owner list, enter the WebSphere MQ queue name in the Customize WebSphere MQ Queue list field and click **Add**. To remove a WebSphere MQ queue from the list, check the box next to the WebSphere MQ queue and click **Delete**.

In a customized query, the * character represents zero or more characters, and the double quote (") character represents an escape.

Data Size

1 Select whether to Include or Exclude events for the selected data size.

2 Select the matching criteria for the selected data size. Choices include less than, less than or equal to, equal to, not equal to, greater than or equal to, or greater than.

3 Enter the desired data size in bytes.

Exception Code

1 Select whether to Include or Exclude events for selected exception codes.

2 Check the box next to each exception code you want to include specifically in the query criteria, or check the box next to Select All Exception Code to include all exception codes in the query criteria. The list of exception codes is generated from events collected in the project database.

Exception Class Name

1 Select whether to Include or Exclude events for selected exception class names.

2 Check the box next to each exception class name you want to include specifically in the query criteria, or check the box next to Select All Exception Class Name to include all exception class names in the query criteria. The list of exception class names is generated from events collected in the project database.

Servlet Criteria:

The following options are only available when Servlet is the current "Criteria For:" technology.

Web Application Server

1 Select whether to Include or Exclude events for selected web application servers.

2 Check the box next to each web application server you want to include specifically in the query criteria, or check the box next to Select All Web Application Server to include all web application servers in the query criteria. The list of web application servers is generated from events collected in the project database.

3   In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, enter it in the Customize Web Application Server list field and click **Add**. To remove a web application server from the list, check the box next to the web application server and click **Delete**.

In a customized query, the ***** character represents zero or more characters, and the double quote **(")** character represents an escape.

Web Application

1   Select whether to Include or Exclude events for selected web applications.

2   Check the box next to each web application you want to include specifically in the query criteria, or check the box next to Select All Web Application to include all web applications in the query criteria. The list of web applications is generated from events collected in the project database.

3   In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, enter it in the Customize Web Application list field and click **Add**. To remove a web application from the list, check the box next to the web application and click **Delete**.

In a customized query, the ***** character represents zero or more characters, and the double quote **(")** character represents an escape.

Method

1   Select whether to Include or Exclude events for selected servlet methods.

2   Check the box next to each servlet method you want to include specifically in the query criteria, or check the box next to Select All Method to include all servlet methods in the query criteria. The list of servlet methods is generated from events collected in the project database.

Status Code

1   Select whether to Include or Exclude events for selected status codes.

2   Check the box next to each status code you want to include specifically in the query criteria, or check the box next to Select All Status Code to include all status codes in the query criteria. The list of status codes is generated from events collected in the project database.

Data Size

1   Select whether to Include or Exclude events for the selected data size.

2   Select the matching criteria for the selected data size. Choices include less than, less than or equal to, equal to, not equal to, greater than or equal to, or greater than.

3   Enter the desired data size in bytes.

WebSphere MQ Options

The following options are only available when WebSphere MQ is the current "Criteria For:" technology.

API Name

1 Select whether to Include or Exclude events for selected WebSphere MQ APIs.

2 Check the box next to each API you want to include specifically in the query criteria, or check the box next to Select All API Name to include all WebSphere MQ APIs in the query criteria. The API list is generated from events collected in the project database.

Connection Name

The connection name and queue manager are typically the same, except in the case where a queue on one queue manager is opened using a connection (specified with the hConn parameter) to a different queue manager. For example, suppose a program opens queue QM1.Q using a connection to queue manager QM1, then later opens QM1.Q using a connection to queue manager QM2. This event shows QM1.Q as the object name, QM1 as the queue manager, and QM2 as the connection name.

1 Select whether to Include or Exclude events for the selected WebSphere MQ connections.

2 Check the box next to each connection you want to include specifically in the query criteria, or check the box next to Select All Connection Name to include all connections in the query criteria. The list of connection names is generated from events collected in the project database.

3 In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, enter it in the Customize Connection Name list field and click **Add**. To remove a connection name from the list, check the box next to the connection name and click **Delete**.

In a customized query, the * character represents zero or more characters, and the double quote (") character represents an escape.

Queue Manager

1 Select whether to Include or Exclude events for selected WebSphere MQ queue managers.

2 Check the box next to each queue manager you want to include specifically in the query criteria, or check the box next to Select All Queue Manager to include all WebSphere MQ queue managers in the query criteria. The list of queue managers is generated from events collected in the project database.

3   In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, enter it in the Customize Queue Manager list field and click **Add**. To remove a queue manager from the list, check the box next to the queue manager and click **Delete**.

In a customized query, the * character represents zero or more characters, and the double quote (") character represents an escape.

Object

1   Select whether to Include or Exclude events for the selected WebSphere MQ objects.

2   Check the box next to each object you want to include specifically in the query criteria, or check the box next to All Entries to include all objects in the query criteria. The list of objects is generated from events collected in the project database. They are grouped according to the queue managers they are associated with.

3   In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, select the queue manager in the Owner list, enter the object name in the Customize Object list field and click **Add**. To remove an object from the list, check the box next to the object and click **Delete**.

In a customized query, the * character represents zero or more characters, and the double quote (") character represents an escape.

Reply To Queue Manager

1   Select whether to Include or Exclude events where the selected WebSphere MQ queue managers match the Reply To field.

2   Check the box next to each queue manager you want to include specifically in the query criteria, or check the box next to Select All Reply To Queue Manager to include all WebSphere queue managers in the query criteria. The list of queue managers is generated from events collected in the project database.

3   In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, enter it in the Customize Reply to Queue Manager list field and click **Add**. To remove a Reply To queue manager from the list, check the box next to the Reply To queue manager and click **Delete**.

In a customized query, the * character represents zero or more characters, and the double quote (") character represents an escape.

Reply To Object

1   Select whether to Include or Exclude events where the selected WebSphere MQ objects match the Reply To field.

2   Check the box next to each object you want to include specifically in the query criteria, or check the box next to All Entries to include all WebSphere MQ objects in the query criteria. The list of objects is generated from events collected in the project database.

3   In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, select the queue manager in the Owner list, enter the object in the Customize Reply To Object list field and click **Add**. To remove an object from the list, check the box next to the object and click **Delete**.

In a customized query, the * character represents zero or more characters, and the double quote (") character represents an escape.

Data Size

1   Select whether to Include or Exclude events for the selected data size.

2   Select the matching criteria for the selected data size. Choices include less than, less than or equal to, equal to, not equal to, greater than or equal to, or greater than.

3   Enter the desired data size in bytes.

Completion Code

1   Select whether to Include or Exclude events for selected WebSphere MQ API completion codes.

2 Check the box next to each API completion code you want to include specifically in the query criteria, or check the box next to Select All Completion Code to include all API completion codes in the query criteria.

Reason Code

1 Select whether to Include or Exclude events for selected WebSphere MQ API reason codes.

2 Check the box next to each API reason code you want to include specifically in the query criteria, or check the box next to Select All Reason Code to include all reason codes in the query criteria.

Message ID

1 Select whether the Message ID contains or does not contain either a binary string or normal string.

2 Click the appropriate radio button to indicate whether the specified message ID is in string or binary format and enter the message ID. For string format, select the correct code page.

Correlation ID

1 Select whether the Correlation ID contains or does not contain either a binary string or normal string.

2 Click the appropriate radio button to indicate whether the specified correlation ID is in string or binary format and enter the correlation ID. For string format, select the correct code page.

WBI Message Broker

1 Select whether to Include or Exclude events for selected WebSphere Business Integration (WBI) message brokers.

2 Check the box next to each WBI message broker you want to include specifically in the query criteria, or check the box next to Select All WBI Message Broker to include all WBI message brokers in the query criteria. The list of WBI message brokers is generated from events collected in the project database.

3   In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, enter it in the WBI Message Broker list field and click **Add**. To remove a WBI message broker from the list, check the box next to the WBI message broker and click **Delete**.

In a customized query, the ***** character represents zero or more characters, and the double quote **(")** character represents an escape.

▶ TransactionVision uses a linear search for the WBI Message Broker criteria. Although linear searching enhances query capabilities, it reduces query performance. If you include this criteria in your query, query performance will be degraded. To minimize the impact on query performance, try not to use this criteria together with the other linear search criteria (User Buffer Data and WebSphere MQ WBI Message Flow Name) in the same query.

WBI Message Flow Name

1   Select whether to Include or Exclude events for selected WebSphere Business Integration (WBI) message flow names.

2   Check the box next to each WBI message flow name you want to include specifically in the query criteria, or check the box next to Select All WBI Message Flow Name to include all WBI message flow names in the query criteria. The list of WBI message flow names is generated from events collected in the project database.

3   In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, enter it in the WBI Message Flow Name list field and click **Add**. To remove a WBI flow name from the list, check the box next to the WBI flow name and click **Delete**.

In a customized query, the ***** character represents zero or more characters, and the double quote **(")** character represents an escape.

▶ TransactionVision uses a linear search for the WBI Message Flow Name criteria. Although linear searching enhances query capabilities, it reduces query performance. If you include this criteria in your query, query performance will be degraded. To minimize the impact on query performance, try not to use this criteria together with the other linear search criteria (WebSphere MQ WBI Broker and User Buffer Data) in the same query.

z/OS Job Name

1   Select whether to Include or Exclude events for selected z/OS job names.

2   Check the box next to each job name you want to include specifically in the
    query criteria, or check the box next to Select All Job Name to include all
    job names in the query criteria. The list of job names is generated from
    events collected in the project database.

3   In addition to selecting individual entries, you may specify a custom query
    string using wildcard characters. To specify a query using wildcards, enter
    it in the Customize Job Name list field and click **Add**. To remove a job
    name from the list, check the box next to the job name and click **Delete**.

    In a customized query, the * character represents zero or more characters,
    and the double quote (") character represents an escape.

z/OS Job Step

1   Select whether to Include or Exclude events for selected z/OS job steps.

2   Check the box next to each job step you want to include specifically in the
    query criteria, or check the box next to Select All Job Step to include all
    job steps in the query criteria. The list of job steps is generated from
    events collected in the project database.

3   In addition to selecting individual entries, you may specify a custom query
    string using wildcard characters. To specify a query using wildcards, enter
    it in the Customize Job Step list field and click **Add**. To remove a job step
    from the list, check the box next to the job step and click **Delete**.

    In a customized query, the * character represents zero or more characters,
    and the double quote (") character represents an escape.

z/OS CICS Task

1   Select whether to Include or Exclude events for selected z/OS CICS tasks.

2   Check the box next to each CICS task you want to include specifically in
    the query, or check the box next to Select All CICS Task to include all
    CICS tasks in the query criteria. The list of CICS tasks is generated from
    events collected in the project database.

3   In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, enter it in the Customize CICS Task list field and click **Add**. To remove a CICS task from the list, check the box next to the CICS task and click **Delete**.

In a customized query, the * character represents zero or more characters, and the double quote (") character represents an escape.

z/OS CICS SYSID

1   Select whether to Include or Exclude events for selected z/OS CICS SYSIDs.

2   Check the box next to each CICS SYSID you want to include specifically in the query, or check the box next to Select All CICS SYSID to include all CICS SYSIDs in the query criteria. The list of CICS SYSIDs is generated from events collected in the project database.

3   In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, enter it in the Customize CICS SYSID list field and click **Add**. To remove a CICS SYSID from the list, check the box next to the CICS SYSID and click **Delete**.

In a customized query, the * character represents zero or more characters, and the double quote (") character represents an escape.

z/OS CICS Transaction

1   Select whether to Include or Exclude events for selected z/OS CICS transactions.

2   Check the box next to each CICS transaction you want to include specifically in the criteria, or check the box next to Select All CICS Transaction to include all CICS transactions in the query criteria. The list of CICS transactions is generated from events collected in the project database.

3   In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, enter it in the Customize CICS Transaction list field and click **Add**. To remove a CICS transaction from the list, check the box next to the CICS transaction and click **Delete**.

In a customized query, the * character represents zero or more characters, and the double quote (") character represents an escape.

z/OS IMS Region Type

1 Select whether to Include or Exclude events for selected z/OS IMS region types.

2 Check the box next to each IMS region type you want to include specifically in the query criteria, or check the box next to Select All IMS Region Type to include all IMS region types in the query criteria. The list of IMS region types is generated from events collected in the project database.

3 In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, enter it in the Customize IMS Region Type list field and click **Add**. To remove an IMS region type from the list, check the box next to the IMS region type and click **Delete**.

In a customized query, the * character represents zero or more characters, and the double quote (") character represents an escape.

z/OS IMS Region Identifier

1 Select whether to Include or Exclude events for selected z/OS IMS region identifiers.

2 Check the box next to each IMS region identifier you want to include specifically in the query criteria, or check the box next to Select All IMS Region Identifier to include all IMS region identifiers in the query criteria. The list of IMS region identifiers is generated from events collected in the project database.

3 In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, enter it in the Customize IMS Region Identifier list field and click **Add**. To remove an IMS region identifier from the list, check the box next to the IMS region identifier and click **Delete**.

In a customized query, the * character represents zero or more characters, and the double quote (") character represents an escape.

z/OS IMS Identifier

1   Select whether to Include or Exclude events for selected z/OS IMS identifiers.

2   Check the box next to each IMS identifier you want to include specifically in the query criteria, or check the box next to Select All IMS Identifier to include all IMS identifiers in the query criteria. The list of IMS identifiers is generated from events collected in the project database.

3   In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, enter it in the Customize IMS Identifier list field and click **Add**. To remove an IMS identifier from the list, check the box next to the IMS identifier and click **Delete**.

In a customized query, the * character represents zero or more characters, and the double quote (") character represents an escape.

z/OS IMS Transaction

1   Select whether to Include or Exclude events for selected z/OS IMS transactions.

2   Check the box next to each IMS transaction you want to include specifically in the query criteria, or check the box next to Select All IMS Transaction to include all IMS transactions in the query criteria. The list of IMS transactions is generated from events collected in the project database.

3   In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, enter it in the Customize IMS Transaction list field and click **Add**. To remove an IMS transaction from the list, check the box next to the IMS transaction and click **Delete**.

In a customized query, the * character represents zero or more characters, and the double quote (") character represents an escape.

z/OS IMS PSB

1   Select whether to Include or Exclude events for selected z/OS IMS PSBs.

2   Check the box next to each IMS PSB you want to include specifically in the query criteria, or check the box next to Select All IMS PSB to include all IMS PSBs in the query criteria. The list of IMS PSBs is generated from events collected in the project database.

3   In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, enter it in the Customize IMS PSB list field and click **Add**. To remove an IMS PSB from the list, check the box next to the IMS PSB and click **Delete**.

In a customized query, the * character represents zero or more characters, and the double quote (") character represents an escape.

i5/OS Job Name

1   Select whether to Include or Exclude events for selected i5/OS job names.

2   Check the box next to each job name you want to include specifically in the query criteria, or check the box next to Select All Job Name to include all job names in the query criteria. The list of i5/OS job names is generated from events collected in the project database.

3   In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, enter it in the Customize Job Name list field and click **Add**. To remove a job name from the list, check the box next to the job name and click **Delete**.

In a customized query, the * character represents zero or more characters, and the double quote (") character represents an escape.

WebSphere MQ IMS Bridge Criteria

The following options are only available when WebSphere MQ IMS Bridge is the current "Criteria For:" technology.

API Name

1   Select whether to Include or Exclude events for selected WebSphere MQ IMS Bridge APIs.

2   Check the box next to each API you want to include specifically in the query criteria, or check the box next to Select All API Name to include all APIs in the query criteria. The list of APIs is generated from events collected in the project database.

IMS Transaction

1   Select whether to Include or Exclude events for selected IMS transactions.

2   Check the box next to each transaction you want to include specifically in the query criteria, or check the box next to Select All IMS Transaction to include all transactions in the query criteria. The list of transactions is generated from events collected in the project database.

3   In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, enter it in the Customize IMS Transaction list field and click **Add**. To remove an IMS transaction from the list, check the box next to the IMS transaction and click **Delete**.

In a customized query, the * character represents zero or more characters, and the double quote (") character represents an escape.

Connection Name

1   Select whether to Include or Exclude events for selected connection names.

2   Check the box next to each connection name you want to include specifically in the query criteria, or check the box next to Select All Connection Name to include all connection names in the query criteria. The list of connection names is generated from events collected in the project database.

3   In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, enter it in the Customize Connection Name list field and click **Add**. To remove a connection name from the list, check the box next to the connection name and click **Delete**.

In a customized query, the * character represents zero or more characters, and the double quote (") character represents an escape.

Queue Manager

1   Select whether to Include or Exclude events for selected queue managers.

2   Check the box next to each queue manager you want to include specifically in the query criteria, or check the box next to Select All Queue Manager to include all queue managers in the query criteria. The list of queue managers is generated from events collected in the project database.

3   In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, enter it in the Customize Queue Manager list field and click **Add**. To remove a queue manager from the list, check the box next to the queue manager and click **Delete**.

In a customized query, the * character represents zero or more characters, and the double quote (") character represents an escape.

Object

1   Select whether to Include or Exclude events for selected objects.

2   Check the box next to each object you want to include specifically in the query criteria, or check the box next to All Entries to include all objects in the query criteria. The list of objects is generated from events collected in the project database. The objects are grouped according to the queue managers they are associated with.

3   In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, select the queue manager in the Owner list, enter the object in the Customize Object list field and click **Add**. To remove an object from the list, check the box next to the object and click **Delete**.

In a customized query, the * character represents zero or more characters, and the double quote (") character represents an escape.
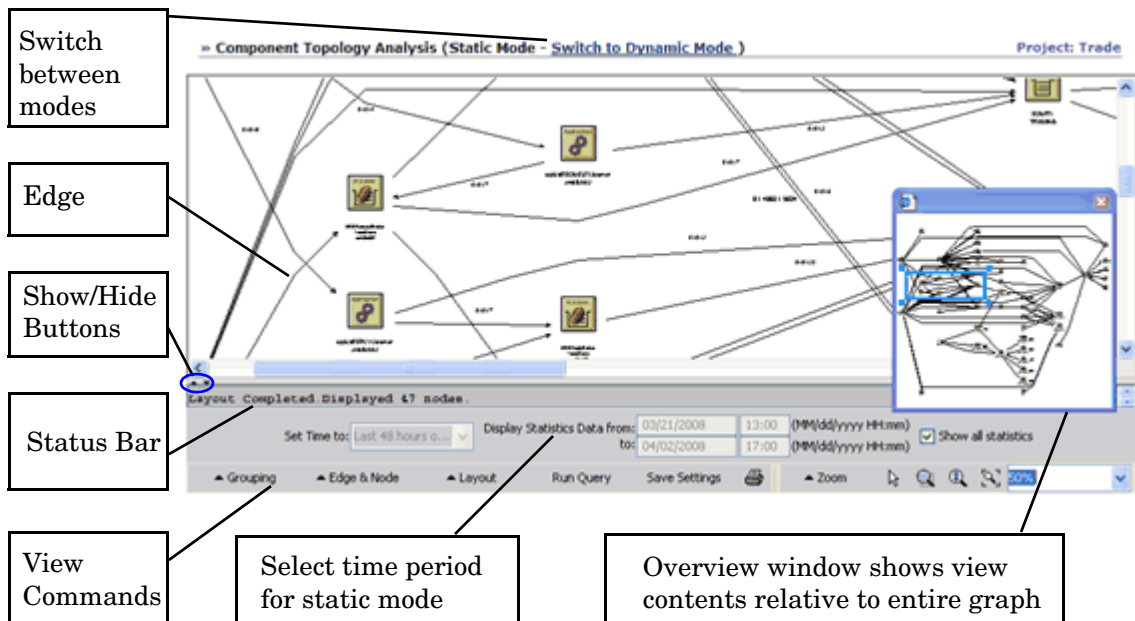
Message ID

1   Select whether the Message ID contains or does not contain either a binary string or normal string.

2   Click the appropriate radio button to indicate whether the specified message ID is in string or binary format and enter the message ID. For string format, select the correct code page.

Correlation ID

1   Select whether the Correlation ID contains or does not contain either a binary string or normal string.

2   Click the appropriate radio button to indicate whether the specified
     correlation ID is in string or binary format and enter the correlation ID.
     For string format, select the correct code page.

User Events

The following options are only available when User Event is the current
"Criteria For:" technology. For information about implementing user events in
your application, see the *TransactionVision Advanced Customization Guide*.

Class

1   Select whether to Include or Exclude user events associated with the
     selected class.

2   Check the box next to each class you want to include specifically in the query criteria, or check the box next to Select All Class to include all classes in the query criteria. The list of classes is generated from events collected in the project database.

3   In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, enter it in the Customize User Events list field and click **Add**. To remove a user event from the list, check the box next to the user event and click **Delete**.

In a customized query, the * character represents zero or more characters, and the double quote (") character represents an escape.

Method

1   Select whether to Include or Exclude user events with the selected method.

2   Check the box next to each method you want to include specifically in the query criteria, or check the box next to Select All Method to include all methods in the query criteria. The list of methods is generated from events collected in the project database.

3   In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, enter it in the Customize Method list field and click **Add**. To remove a method from the list, check the box next to the method and click **Delete**.

In a customized query, the * character represents zero or more characters, and the double quote (") character represents an escape.

Completion Code

1   Select whether to Include or Exclude user events with the selected completion code.

2   Check the box next to each completion code you want to include specifically in the query criteria, or check the box next to Select All Completion Code to include all classes in the query criteria.

Status

1   Select whether to Include or Exclude user events with the selected status.

2   Check the box next to each status you want to include specifically in the query criteria, or check the box next to Select All Status to include all status values in the query criteria.

3   In addition to selecting individual entries, you may specify a custom query string using wildcard characters. To specify a query using wildcards, enter it in the Customize Status list field and click **Add**. To remove a status value from the list, check the box next to the status value and click **Delete**.

In a customized query, the * character represents zero or more characters, and the double quote (") character represents an escape.

Data Size

1   Select whether to Include or Exclude events for the selected data size.

2   Select the matching criteria for the selected data size. Choices include less than, less than or equal to, equal to, not equal to, greater than or equal to, or greater than.

3   Enter the desired data size in bytes.

3 Using the Component Topology Analysis View

The Component Topology Analysis view shows the interaction between all system components for which Sensors collect event information. The Analyzer correlates events across host, program, and thread boundaries. These correlated events are used to draw a visual map of the flow of information throughout the system. To display the Component Topology Analysis view, select the **View > Component Topology Analysis** menu item.

Switch between modes

Edge

Show/Hide Buttons

Status Bar

View Commands

Select time period for static mode

Overview window shows view contents relative to entire graph
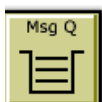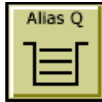
View commands enable you to customize the appearance of the Component Topology Analysis and print it as a map of your entire transaction-based system.
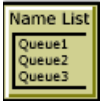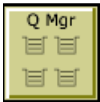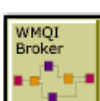
View Components
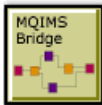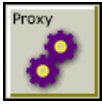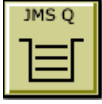
The Component Topology Analysis consists of resource icons that represent system components and edges, which are connecting lines that show the interaction between resource icons.
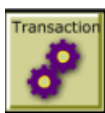
Resource Icons

Depending on your system, the following resource icons may appear in the Component Topology Analysis:

Icon	Description
Cluster Q	WebSphere MQ cluster node relating multiple queue instances in a clustering environment
Distribution List	WebSphere MQ distribution list
Msg Q	WebSphere MQ message queue
Remote Q	WebSphere MQ remote queue
Alias Q	WebSphere MQ alias queue

Icon	Description
DL Q / RIF	WebSphere MQ dead letter queue
Name List / Queue1 Queue2 Queue3	WebSphere MQ namelist
Application	Program
Process Objects	Process object
Q Mgr	WebSphere MQ queue manager
Local Q	WebSphere MQ local queue
Model Q	WebSphere MQ model queue
WMQI Broker	WebSphere MQ Integrator broker

Icon	Description
MQIMS Bridge	WebSphere MQ IMS Bridge node. If you do not have a custom bean to add queue and queue manager information for IMS Bridge events, an "unknown queue" node is shown for each IMS Bridge node associated with the MQIMS_BRIDGE_ENTRY event. For more information about the TransactionVision IMS Bridge Sensor, see the *TransactionVision Sensor Installation and Configuration Guide*.
Proxy	Proxy object. Proxy objects involve applications that are not monitored by a TransactionVision Sensor. See the *TransactionVision Sensor Installation and Configuration Guide* for information about the proxy Sensor and proxy objects.
WWW	Internet
JMS Q	JMS queue
JMS Topic	JMS topic
JSP	Java server page
Servlet	Java servlet
WebApp	Web application

Icon	Description
WebSphere	WebSphere web application server
Session Bean	EJB session bean
Entity Bean	EJB entity bean
M.D.Bean	EJB message-driven bean
Transaction	CICS transaction. Note that TransactionVision automatically filters out all CICS transactions that begin with "C" because they are internal CICS transactions. One exception is CKBP, which denotes a WebSphere MQ-CICS bridge transaction. All CICS DPL programs invoked through MQ-CICS bridge have this transaction name.
File	CICS file
TD queue	CICS Transient Data (TD) queue
Indirect TDQ	CICS indirect TD queue. Similar to a TD queue, the indirect TD queue is an alias to other TD queues.

| Icon	Description
TS queue	CICS temporary storage (TS) queue. Used for temporarily passing data, users can create and destroy TS queues on the fly.
Resource	A user defined system resource object that participates in one or more user events included by the query. All user defined objects share the same icon with the label "Resource." For information about implementing user events, see the *TransactionVision Advanced Customization Guide*.
SQL	SQL queue. Represents access and execution of an SQL statement.
WMQI Broker	WMQI Broker.

Edges

The connecting lines, called edges, show the relationship between the resource icons. For WebSphere MQ, JMS, and CICS events, solid edges represent message flows. For servlet and EJB events, solid edges represent control flow.

Dashed edges represent a relationship between icons, such as between a remote, alias, or model queue and the local queue it is associated with. In the following example, the DataFlowEngine and FX Listener programs write to and read from the FX queue, respectively. The FX queue is an alias queue for the local FX_LOCAL queue.
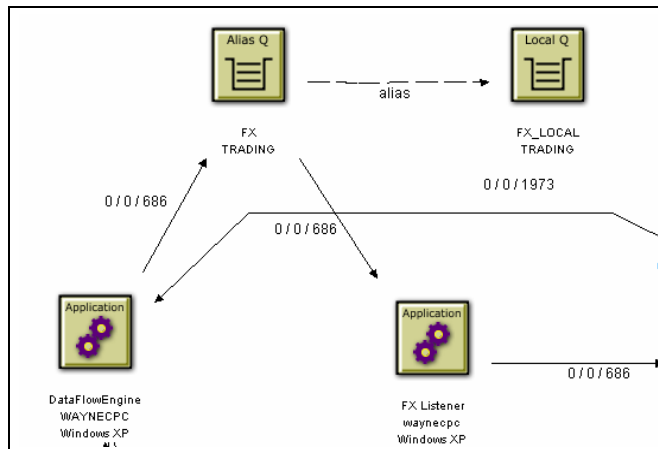
For TIBCO EMS queue objects, edges represent route and bridge relationships
between objects, as in the following example:
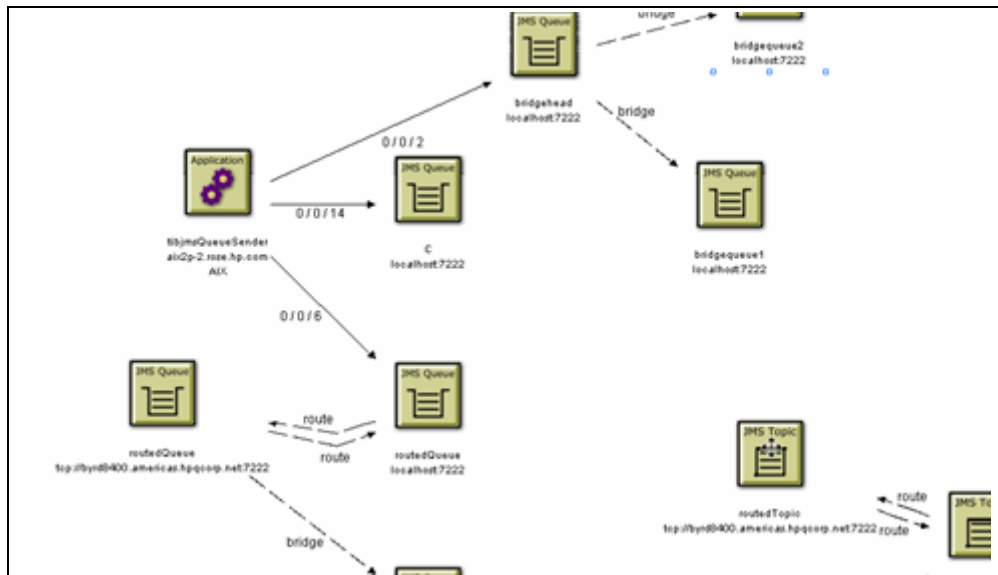
WebSphere MQ and JMS Events

For WebSphere MQ and JMS events, an edge represents message flow. For example, the following diagram shows that the DataFlowEngine application puts messages on the EQUITY and BOND queues of the TRADING queue manager. The EquityTradeProcessor and BondTradeProcessor programs retrieve messages from the EQUITY and BOND queues, respectively, and put a message on REPLY.
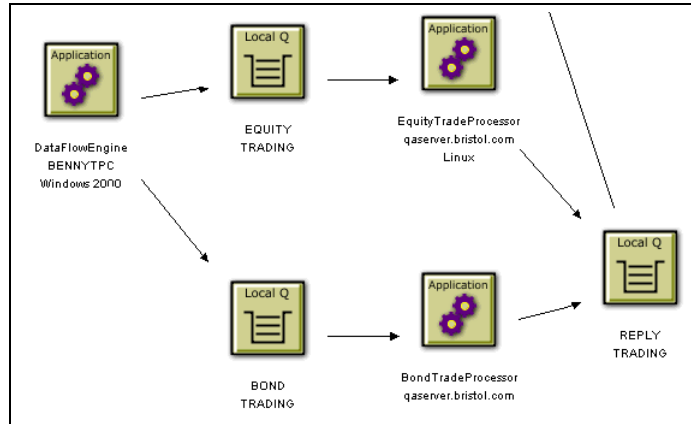

CICS Events

Like WebSphere MQ and JMS events, edges represent message flow for CICS events. For example, in the following diagram, the CKPB CICS transaction reads from the SYSTEM.CICS.BRIDGE.QUEUE queue and the ACCTFIL file. It then writes to the REMOTE.TO.HUDONGWPC queue, which is a remote queue for HUDONG.TEST.QUEUE.
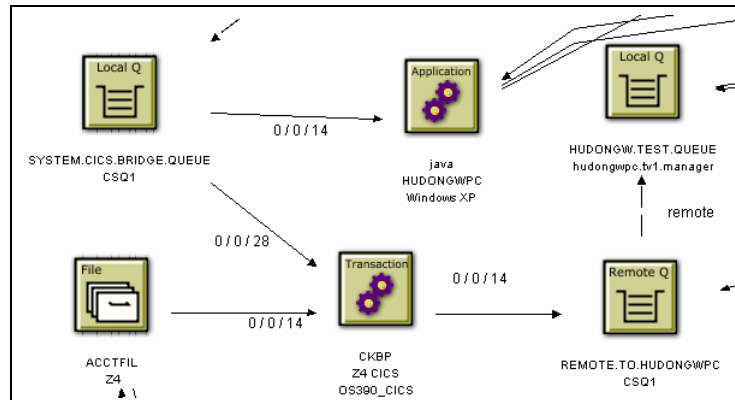
Servlet and EJB Events

For servlet and EJB events, edges represent control flow. In the following example, the web page calls the TradeServlet and TradeSimulationServlets. TradeServlet calls the TradeSession EJB, while TradeSimulationServlet calls a Java server page.
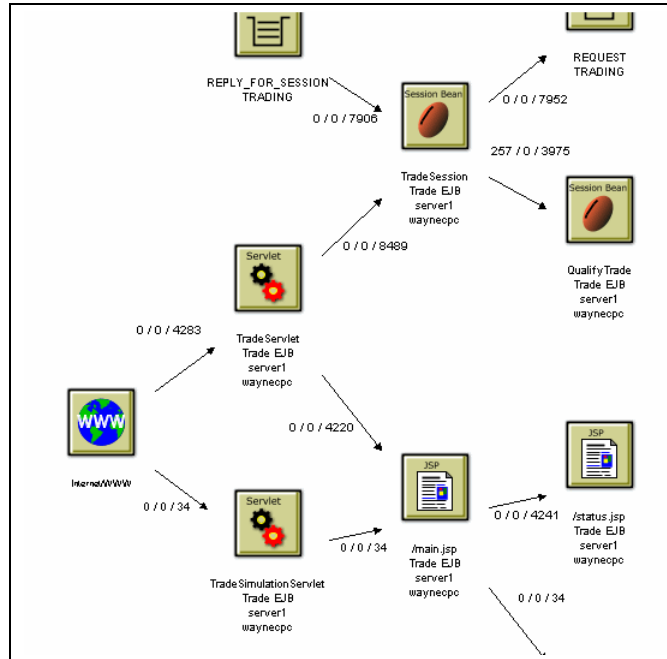
JDBC Events

For JDBC events, edges represent access to database resources. An application will have a link to an SQL object, which represents the type of SQL statement and which tables it accesses. Various statistics on this operation are available on this edge. Additionally, an SQL object will have links to database table objects that were accessed by the SQL statement.

In the following example, you see the JDBCStmt application execute an SQL statement that does a SELECT on the table TVISION.USER_PREF.
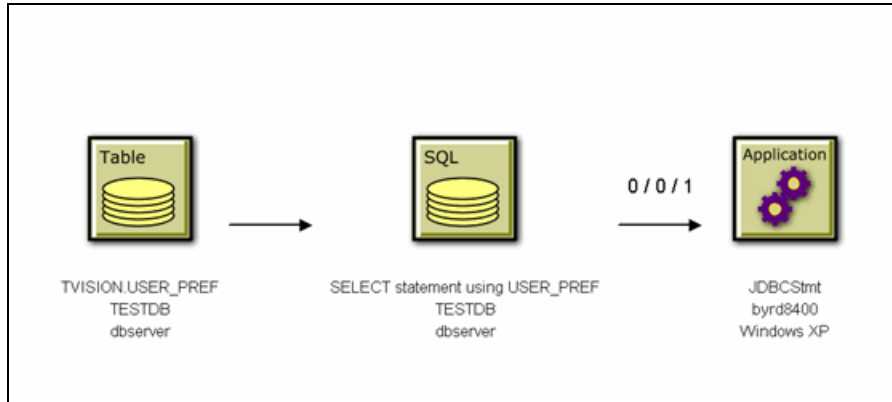
WebSphere Business Integration Message Broker (WMIMB) Events

In the following example, the component label of the broker node shows the WBI broker name and the corresponding message flow name instead of listing the name of the broker process.

The following table shows the node label meanings for WBI brokers with respect to the various distributed program grouping criteria in the Component Topology Analysis:

Grouping Criteria	Node Label
Individual Thread	Broker and Message Flow name
Individual Process	Broker name
Program Name/Host Combination	Fixed string "WBI Broker"
Program Name	Fixed string "WBI Broker"
Host	N/A
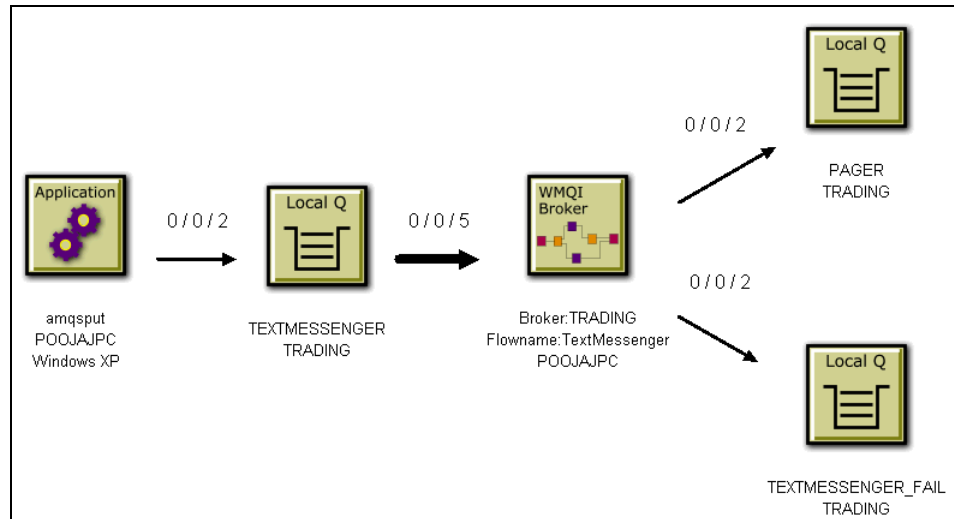
WebSphere MQ-IMS Bridge Events

The following example shows a batch job HUDONGWA with a job step, STEP1, putting messages onto a MQ-IMS bridge input queue. On receiving these messages on the input queue, the WebSphere MQ-IMS bridge invokes an IMS transaction TRTIB3 in IMS job IMS71CR1. That transaction places reply messages on the IMS.BRIDGE.REPLY.QUEUE, which is read by the job step, STEP2 of the job HUDONGWA.
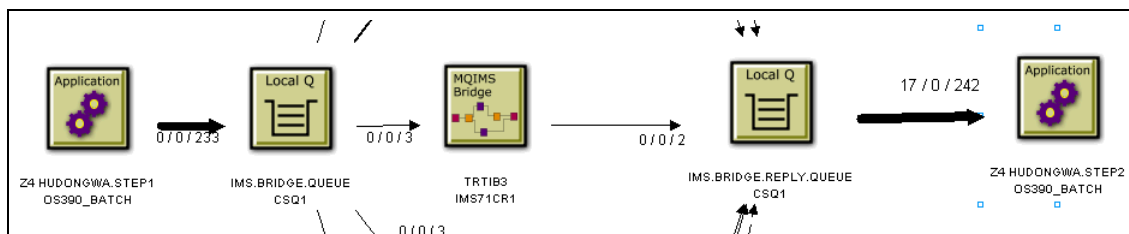
Stand-alone Java Applications

When monitoring JMS events from stand-alone Java applications, the Component Layout view displays the top level class name as the program name. The top level class name is the outmost name in the stack trace. For example, the class name in the following stack trace is taken from the last line in the following example:

```
at java.lang.Thread.dumpStack(Thread.java:993)
at Test.<init>(Test.java:29)
at Test.main(Test.java:62)
```

However, this class does not necessarily contain the public static void main(String[] args). Instead, it might be a class derived from java.lang.Thread, which runs in other threads than the main thread.

If the correct program name is not displayed, set the com.bristol.tvision.programname system property in the command line when running the stand-alone application. For example, to set the program name to MyProgram, start it as follows:

```
java -Dcom.bristol.tvision.programname=MyProgram ...
```

View Modes

TransactionVision provides two modes for the Component Topology Analysis view: dynamic and static.

Dynamic Mode

In dynamic mode, the Component Topology graph is created by comparing each event in the project to the current query and correlating events that match the query. This mode enables you to structure your query to view very specific information, but it can be time-consuming to perform the analysis and display the graph.

Static Mode

Rather than evaluating all project events against a query, the static graph is created from statistics gathered during event collection. This enables the Analyzer to draw the graph much faster than in dynamic mode. However, it limits the granularity of event data because the static view can only distinguish between the program level, not the program instance level used in the dynamic view. The static view also limits queries to statistics occurring within a specified time range.

During event collection, statistics for the static mode display are stored in a statistics cache. Periodically, this cache is written to the database, making the results available for viewing the Component Topology Analysis. Entries in the <TVISION_HOME>/config/services/StatisticsCache.properties file, control the operation of the cache.

- The timeslice_interval property specifies the period of time during which all events belonging to the same program and WebSphere MQ object are condensed into a single statistic. Note that your time slice interval is the smallest increment of time in which you can view your data in static mode.

- The flush_interval property specifies how often the statistics cache is written to the database.

For more information about these properties, see the *TransactionVision Analyzer Installation and Configuration Guide*.

Open the Component Topology Analysis View

To open the Component Topology Analysis view, choose the **Views** > **Component Topology Analysis** menu item. You may also open the Component Topology Analysis view from the Event Analysis and Transaction Analysis views with the following command menu selections:

View	Menu Selection
Event Analysis	Open the events in: Component Topology Analysis
Transaction Analysis	**Switch View** > **Component Topology Analysis View**

TransactionVision displays a Static Component Topology Analysis for the current project and query.

If your browser is unable to display the view or if the view displays, but icons do not appear correctly, your browser security settings may not be set so that TransactionVision can function properly. For instructions on setting minimum security settings for TransactionVision, see Browser Security Settings on page 25.

Switching Between Modes

By default, the Component Topology graph is created in static mode. Click **Switch to Dynamic Mode** to display the Dynamic Component Topology graph. To change from dynamic mode to static mode, click **Switch to Static Mode** on the Dynamic Component Topology graph.

To use a different query in dynamic mode, select the query from the query menu in the upper right corner of the display. Select New Query from the query menu to create a new query, or select Edit Query to modify the current query. For more information about creating or modifying queries, see Chapter 2, Configuring Queries.

Moving Components

To move any component in the graph, select the component in the view area and drag it to the desired location. TransactionVision automatically adjusts all edges to and from the component.

Opening Multiple Views

You may open new browser windows using multiple Component Topology Analysis windows concurrently, using different queries to display different result sets.

If you open a Component Layout Analysis view in a new browser window, any changes you make in one window are reflected in the other window when it is refreshed. If you start a new browser instance and log into TransactionVision in the new browser, however, a new TransactionVision session is started. If you use multiple sessions, changes you make in one session affect that session only.

Show/Hide the Status Bar

Use the Show/Hide arrow buttons to show, hide, or resize the status message pane.

To hide the status bar, click the down arrow button. To show a hidden status bar, click the up arrow button. To resize the status bar, point the cursor to either arrow button so that the cursor changes to a double arrow and drag.

Closing the View

The Component Topology Analysis view closes when you select a different view or page from the TransactionVision menus.

Refresh the View

To refresh the Component Topology Analysis view with events collected since it was opened or last refreshed, click the **Run Query** view command.

Change Static View Time Period

The static view is based on one of the following time queries:

- All statistics (default)
- Statistics from a predefined time period
- Statistics from a custom time period

View All Statistics

To use all events, check the Show all statistics checkbox and click **Run Query**.

View Statistics from a Predefined Time Period

To use events from a predefined time period, perform the following steps:

1   Clear the Show all statistics checkbox, if it is checked.

2   Select one of the following predefined time periods in the Set Time to field:

    —   Today

    —   Yesterday

    —   Past Week

    —   This Month

    —   Last 48 hours of data

    The date and time fields are automatically populated with the corresponding information. These fields are also disabled.

3   Click **Run Query**.

View Statistics for a Custom Time Period

To use events from a custom time period, perform the following steps:

1   Clear the Show all statistics checkbox, if it is checked.

2   Select Custom time in the Set Time to field.

3   Enter the desired start and end dates and times in the Display Statics Data from and to fields.

    Note that your time slice interval set in StatisticsCache.properties is the smallest increment of time in which you can view your data in static mode. For example, if your time slice is set to one day, you will not be able to view these statistics on an hourly basis. If you set a specify a custom time period smaller than the time slice, this view shows all events in the time slice associated with the custom time period. For example, if your time slice is set to one day and you specify a custom time period of one hour, the resulting view will show all events for the entire day. If your custom time period spans multiple time slices, the resulting view shows all events from the time slices spanned by the custom time period.

4   Click **Run Query**.

Modify Edges

You may customize the width and color coding of edge widths, or set other edge properties.

Edge Widths

Edge width properties may reflect information about the interaction between components. By default, edge widths are fixed, but you can modify them so that edge thickness represents either the total number of message calls (MQGET and MQPUT/MQPUT1 calls for WebSphere MQ events or send and receive calls for JMS events), the number of successful message calls, or the message data byte count. Setting edge widths enables you to see at a glance logic and performance bottlenecks in your system, as in the following example:

Edge width indicates the number of successful message calls.
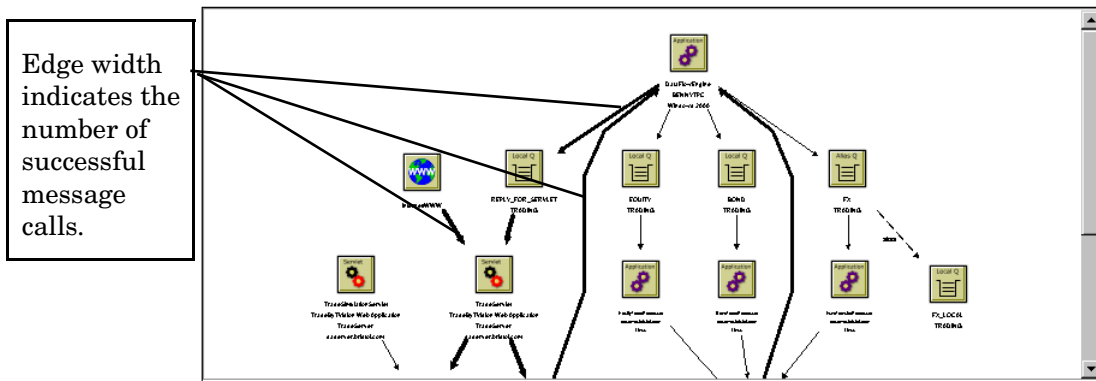
To set edge width properties, choose one of the following menu items from the **Edge & Node** > **Edge Widths** menu:

Menu Item	Description
Message Call Count	Edge width indicates the total number of message calls (MQGET, MQPUT, and MQPUT1 calls for WebSphere MQ events or send and receive calls for JMS events) between components.
Successful Message Call Count	Edge width indicates the number of successful message calls between components.
Message Data Byte Count	Edge width indicates the number of message data bytes transferred between components.
Fixed width	All edge widths are a fixed width (default).

Edge Color Coding

You may color code edges to indicate warning and error messages, enabling you to see them easily. To set edge color coding, choose one of the following from the **Edge & Node** > **Edge Color Coding** menu:

Menu Item	Description
Errors and Warnings	Edges representing error and warning events are color coded are shown in red.
None	Edges representing error and warning events are not color coded (default).

Modify Edge Labels

You may configure edge labels to provide more information about the events they represent. Edge labels may include any (or none) of the following information:

• Message and byte count

- Error, warning, and success count
- Latency times
- Edge Label
- EJB methods

Message Count/Byte Count

Choose the **Edge & Node** > **Message Count/Byte Count** menu item to turn on/off edge labels indicating the total number of successful message calls between the resources, along with the number of bytes transferred. Note that MQIMS_BRIDGE_ENTRY and MQIMS_BRIDGE_EXIT calls are not included in the message count/byte count.

Edge labels showing message count/byte count
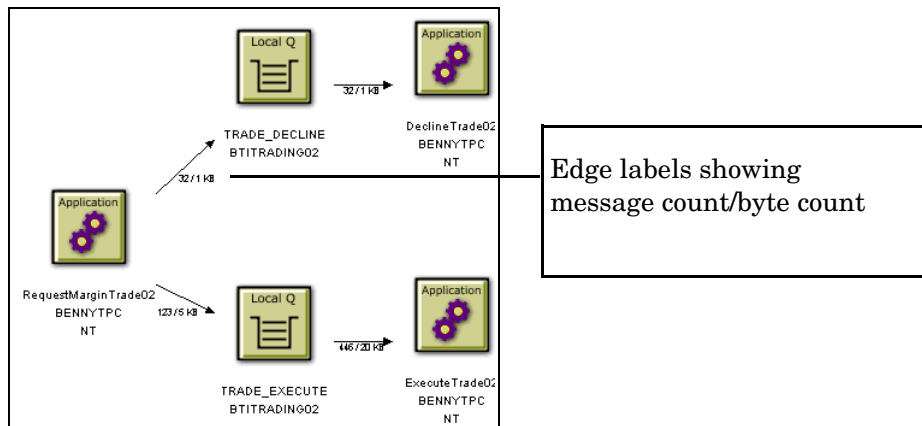
To specify a unit of measure for the byte count, choose one of the following from the **Edge & Node** > **Show Byte Counts** menu:

- In MegaBytes
- In KiloBytes
- In Bytes

This menu item is only enabled if the message count/byte count is displayed.

Error, Warning, and Success Count

Choose the **Edge & Node** > **Error/Warning/Success Count** menu item to turn on/
off edge labels indicating the number of error events, warning events, and
successful events between components. Events include the following:

- All WebSphere MQ MQGET, MQPUT, MQPUT1, MQINQ, MQSET,
  MQOPEN, MQIMS_BRIDGE_ENTRY, and MQIMS_BRIDGE_EXIT calls.

- All JMS receive, receiveNoWait, OnMessage, OnException,
  createReceiver, createSubscriber, createBrowser, publish, send,
  createSender, createPublisher, and nextElement calls.

- All servlet HTTP_PUT, HTTP_GET, and HTTP_POST requests.

Edge labels showing
error/warning/success
count in addition to
message count/byte
count
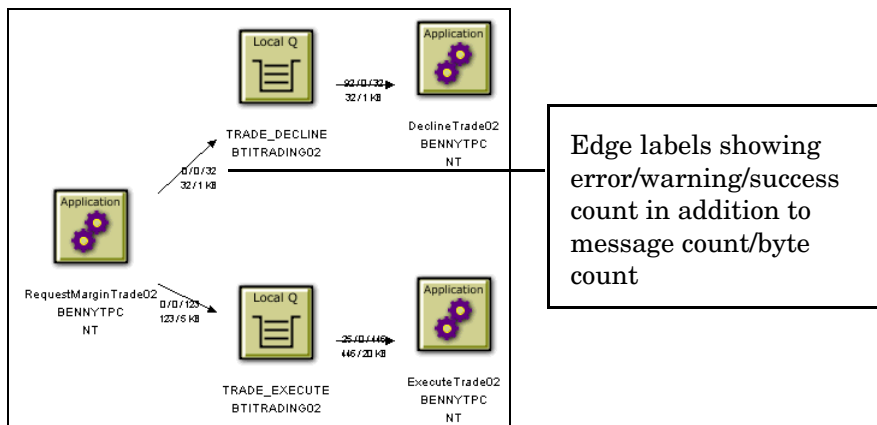
Latency Times

Choose the **Edge & Node** > **Min/Avg/Max Latency Times** menu item to turn on/off
edge labels showing minimum, average, and maximum transaction times for
each connection. Use this information to identify potential performance
bottlenecks. Transaction times are defined as the time from when a message
is put onto the queue and when it was pulled off that queue. For transactions
involving a proxy object, TransactionVision shows a latency of N/A.

Edge labels
showing latency
times in addition
to message
count/byte count
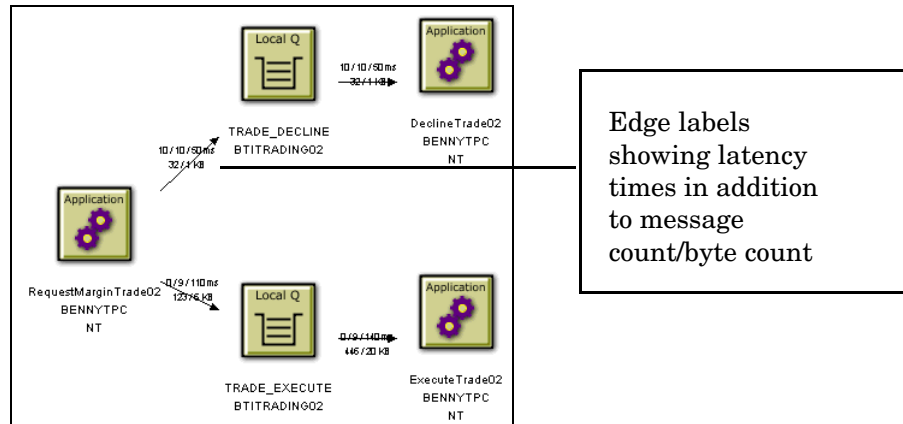
> For EJB and servlet events, the time on the edge pointing to a bean
> represents the time spent in that bean's or servlet's methods; not a latency
> time.

By default, latency times are calculated using a resolution of 1/100 seconds. To
modify the latency resolution, change the value of the latency_resolution
attribute in the Analyzer.properties file. For more information about this file,
see the *TransactionVision Analyzer Installation and Configuration Guide*.

Edge Label

Choose the **Edge & Node** > **Edge Label** menu item to turn on/off edge labels
showing the connection associated with the edge.

Edge labels showing connection names in addition to message count/byte count
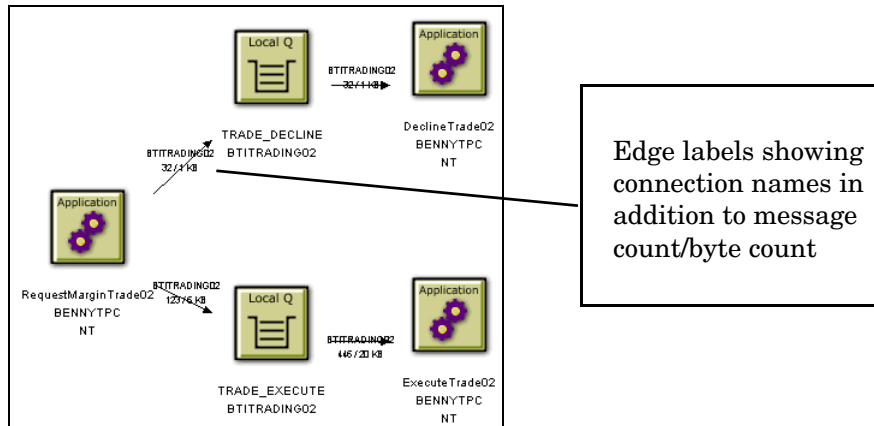
EJB Methods

Choose the **Edge & Node** > **EJB Methods** > **Show Standard EJB Methods** menu item to turn on/off the inclusion of standard EJB methods in the edge labels showing the error/warning/success count.

Choose the **Edge & Node** > **EJB Methods** > **Show Access Methods** menu item to turn on/off the inclusion of access methods in the edge labels showing the error/warning/success count.

Choose the **Edge & Node** > **EJB Methods** > **Show Bean Relationships** menu item to turn on/off edges showing EJB relationships.

JDBC Methods

Choose the **Edge & Node > JDBC Statistics > Cursor Iteration/Get Count** menu item to turn on/off the inclusion of statistics showing cursor iterations (the number of result rows that were retrieved using this statement), and Get count (the number of calls made to the JDBC resultset to get results from the row).

Choose the **Edge & Node > JDBC Statistics > Min/Avg/Max Execute time** menu item to turn on/off the inclusion of statistics showing timing of how long it took to execute this SQL statement.

Choose the **Edge & Node > JDBC Statistics > Min/Avg/Max Cursor time** menu item to turn on/off the inclusion of statistics showing the total time spent iterating through result rows and retrieving data from the JDBC resultset.

Choose the **Edge & Node > JDBC Statistics > Avg Time(Cursor, Execute) per statement/Total Statement time** menu item to turn on/off the inclusion of statistics showing the combined average time and total time spent on operations using this SQL statement.

Choose the **Edge & Node > JDBC Statistics > Min/Avg/Max Commit time (Database grouping only)** menu item to turn on/off the inclusion of statistics showing the commit time. Note that this aggregate data is not available on individual statements, so this statistic only displays when viewing your topology with the Database grouping level enabled.

Choose the **Edge & Node > JDBC Statistics > Total time (Cursor, Execute, commit)(Database grouping only)** menu item to turn on/off the inclusion of statistics showing the total time spent in JDBC calls, including Cursor time, Execute time and commit time. Note that this aggregate data is not available on individual statements, so this statistic only displays when viewing your topology with the Database grouping level enabled.

Modify Node Labels

If an alias list is associated with the current project, you may choose to display user-defined node name instead of or in addition to system model object names.

Choose the **Edge & Node** > **Node Label** > **Use Alias Name** menu item to display only the user-defined alias, if defined, for all objects.

Choose the **Edge & Node** > **Node Label** > **Use Real Name** menu item to display only the system model object name for all objects.

Choose the **Edge & Node** > **Node Label** > **Use Both Names** menu item to display the user-defined alias, if defined, along with the system model object name for all objects.

See the *TransactionVision Administration Guide* for instructions on defining alias names and assigning alias lists to projects.

Modify Component Groupings

Changing component groupings changes the granularity of the information displayed in the view, depending on the level of information you need. For example, viewing each process thread as a separate component provides very fine granularity, but can make it difficult to spot an information flow problem between programs.

Note that proxy objects do not support grouping by thread, process, transaction name, transaction ID, TCB, and PCB. Selecting these grouping criteria have no affect on proxy objects. For more information about proxy objects and the proxy Sensor, see the *TransactionVision Sensor Installation and Configuration Guide*.

Queues and Queue Managers

Choose one of the following from the **Grouping** > **Queue Grouping Criteria** menu:

- **MQSeries Object/Queue Manager Combination** to show each object/queue manager combination as a separate component.

- **Queue Manager** to show all objects on a single queue manager as a single component.

- **Show Model Queue Resolution** to turn model queue resolution on/off. A model queue is a template of a queue definition that is used when creating a dynamic queue. When you call MQOPEN on a model queue, the queue manager creates a temporary or permanent local dynamic queue using the attributes of the model queue. Select this menu item to show model queues in the Component Topology Analysis.

The edges between a model queue node and its model queue definition, remote queue definition, alias queue definition, or cluster queue node representation are displayed as dashed lines because they represent a relationship rather than a message flow.

Distributed Platforms

For UNIX and Windows NT hosts, choose one of the following from the **Grouping** > **Distributed Program Grouping Criteria** menu:

- **Program Name** to show each program name on all hosts as a single component.

- **Host** to show all programs on a single host as a single component.

- **Program Name/Host Combination** to show the default component grouping.

z/OS CICS

For z/OS CICS hosts, choose one of the following from the **Grouping** > **z/OS CICS Program Grouping Criteria** menu:

- **Transaction ID/Region/Host Combination** to show the default component grouping.

- **Transaction ID/Host Combination** to show the transaction and host combination for all regions as a single component.

- **Region/Host Combination** to show all transaction IDs for a single region on a host as a single component.

- **Host** to show all transaction IDs for all regions on a single host as a single component.

z/OS Batch

For z/OS Batch hosts, choose one of the following from the **Grouping** > **z/OS Batch Program Grouping Criteria** menu:

- **Individual Job Step** to show each job step as a separate component.

- **Individual Job** to show each job as a separate component.

- **Host** to show all TCBs on a single host as a single component.

- **Host/Job Name/Step Name Combination** to show the job name, job step, and host combination as a single component.

- **Host/Job Name Combination** to show all jobs on a host as a single component.

z/OS IMS

For z/OS IMS hosts, choose one of the following from the **Grouping** > **z/OS IMS Program Grouping Criteria** menu:

- **Individual PSB Name** to show each PSB as a separate component.
- **IMS Transaction Name** to each show transaction as a separate component.
- **IMS Region Identifier** to show each region as a separate component.
- **IMS Identifier** to show each IMS identifier as a separate component.
- **Job Name** to show each job name as a separate component.
- **IMS Type** to show each IMS type as a separate component.

z/OS IMS Bridge

Choose one of the following from the **Grouping** > **z/OS IMS Bridge Grouping Criteria** menu:

- **Transaction Name** to show each transaction name as a separate component.
- **Job Name** to show each job name as a separate component.

Servlet/JSP/EJB

For Servlet/JMS/EJB events, choose one of the following from the **Grouping** > **Servlet/JSP Grouping Criteria** menu:

- **Servlet/JSP/EJB** to show servlet, JSP, and EJB icons.
- **Web Application** to show web application icons.
- **Application Server** to show WebSphere Application Server icons.
- **Host** to show all programs on a single host as a single component.

JDBC

For JDBC events, choose one of the following from the **Grouping > Database Grouping Criteria** menu:

- **Database** to group JDBC components by which database they access.

- **Database object** to group JDBC components by SQL statements, as well as show the tables on which the SQL statements operate.

- **Sql Object** to group JDBC components by SQL statements.

Show Publish-Subscribe Topic

By default, TransactionVision is unable to correlate publish-subscribe events unless you monitor the publish-subscribe broker. Therefore, TransactionVision identifies the following events as two separate transactions:
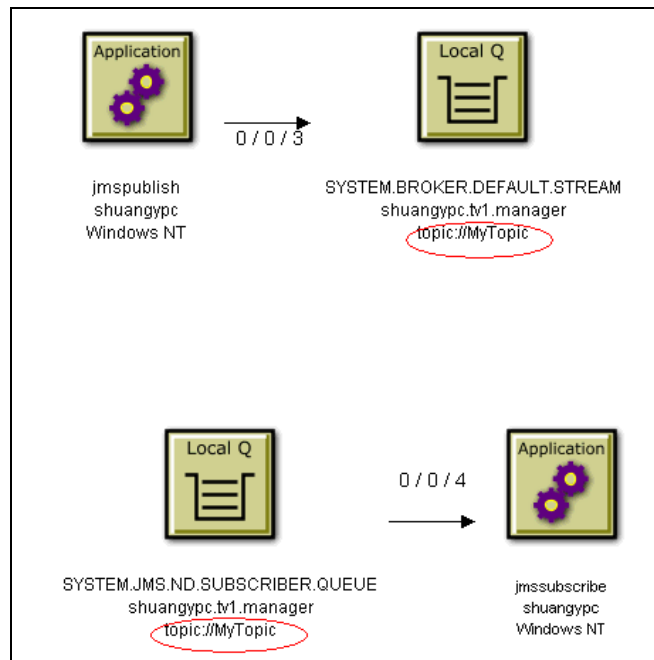
However, if you have enabled publish-subscribe topic correlation, TransactionVision is able to correlate these publish-subscribe topics into a single transaction as follows:
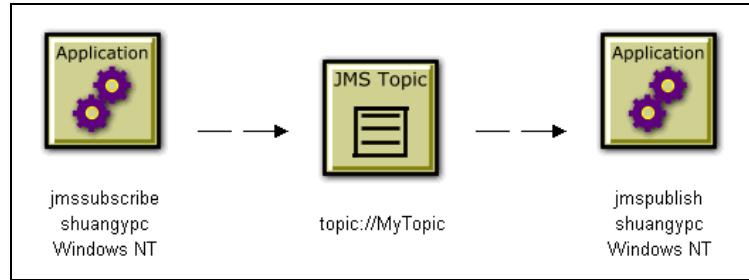
For instructions on enabling TransactionVision to correlate publish-subscribe topics, see the *TransactionVision Sensor Installation and Configuration Guide*. If correlation is enabled, choose **Grouping** > **Show Publish-Subscribe Topic** to show the correlation.

Group Method Calls On The Same EJB

To group similar method calls on the same EJB as a single edge, choose **Grouping** > **Group Method Calls On the Same EJB**. Otherwise, an edge is drawn on the graph to represent each method call between EJB beans.

Change Default Settings

As you use the Component Layout View, you may change settings such as program and queue grouping criteria, edge labels and appearance, and graph layout. To make the current settings the default for the your user ID, click **Save Settings**.

Zoom In or Out

By default, TransactionVision sizes the Component Topology Analysis graph to fit in the view window. There are several ways to adjust the zoom level:

• Choose the **Zoom** > **Zoom** > **Zoom In** menu item to increase the zoom level.

- Choose the **Zoom** > **Zoom** > **Zoom Out** menu item to decrease the zoom level.

- Click ![zoom icon] or choose **Zoom** > **Selective Zoom** to change to selective zoom mode. The cursor changes to the selective zoom cursor. Click on the view area and then drag the cursor to select an area to zoom. TransactionVision adjusts the zoom level so that the selected area fills the view area. Click ![cursor icon] to return to selection mode.

- Click ![zoom icon] or choose **Zoom** > **Interactive Zoom** to change to interactive zoom mode. The cursor changes to the interactive zoom cursor. Click in the view area and drag the cursor to the top or left to decrease the zoom level or drag to the bottom or right to increase the zoom level. Click ![cursor icon] to return to selection mode.

- Click ![fit window icon] or choose **Zoom** > **Zoom** > **Fit Window** to adjust the zoom level so that the entire graph appears in the view window.

- Enter a custom zoom percentage or choose a predefined zoom percentage from the zoom percentage list.

- Choose the **Zoom** > **Show Overview Window** menu item to open a small secondary window that contains a read-only view of the view window. The entire graph is shown within this window, and a highlighted selection box surrounds the region that is displayed in the active window. The highlighted rectangle allows you to change the view by changing the focal point and zoom level of the active graph window. It is provided as a mechanism to help you see where you are in a graph.
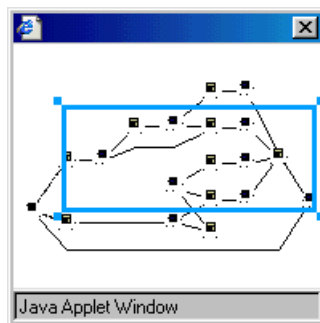
— To resize the selection box, click one of the corner handles and drag your cursor to the desired size. Note that the selection box maintains a constant aspect ratio to match the size of the active view window.

— To move the selection box, click inside the selection box and drag your cursor to the desired location.

— To create a new selection box, click outside of the current selection box and drag your cursor to the desired size.

▶ Note that any time the Component Topology Analysis view is refreshed, the zoom level reverts to Fit Window.

Set Background Color

One way to customize the Component Topology Analysis is to specify a background color. To specify a background color, choose the **Layout** > **Background Color** menu item. The Choose Graph Background Color dialog appears.

There are three ways to select a background color:

• On the Swatches page, click the desired color. The preview area shows what your choice will look like.
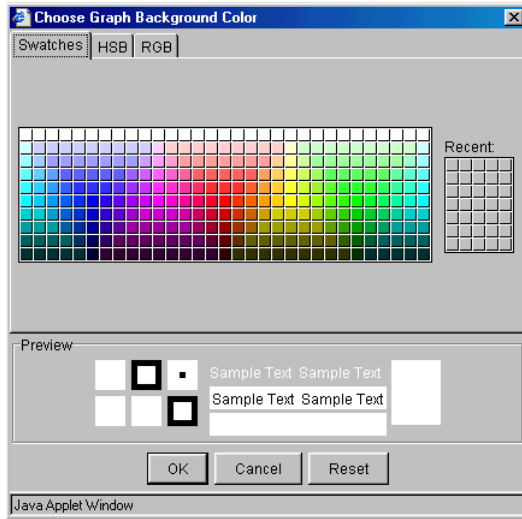
- On the HSB page, click the desired color in the color area. Use the sliding bar to adjust the hue, saturation, and brightness levels individually.
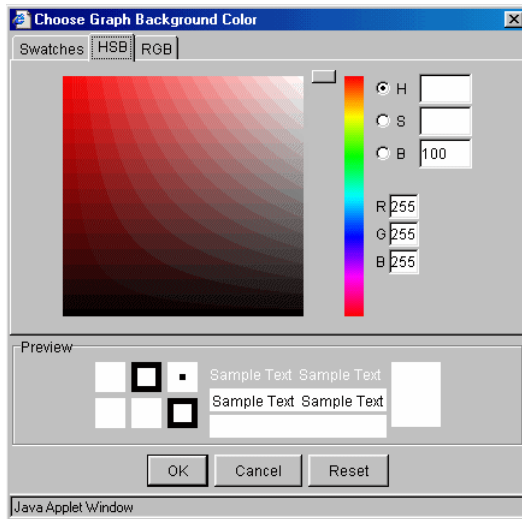
- On the RGB page, enter specific values for red, green, and blue, or click the desired value on the scale.
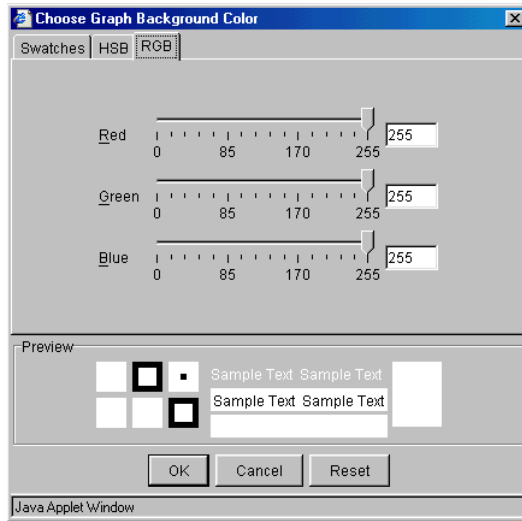
Click **OK** to make your changes active, **Cancel** to close the dialog without activating your changes, or Reset to reset the background color to the default.

Print Graphs

To print the Component Topology Analysis graph using the current print setup, choose the ▢ > **Print Graph...** menu item. TransactionVision invokes the standard printing mechanism for your platform.

▶ Setting the page orientation to landscape on the Windows Print dialog has no effect. Instead, use the TransactionVision Page Setup dialog to set page orientation if you wish to print in landscape mode. For more information about this dialog, see Page Setup on page 141.

When you print a graph, a Java warning appears asking permission to print. This message is generated by the Java security feature to prevent unauthorized use of printers. The first time you print in a session, it appears multiple times; it appears once after the first time you print. To disable this message, add the following lines in the .java.policy file in your home directory on the client computer:

```
grant {
  permission java.lang.RuntimePermission "queuePrintJob";
};
```

Print Preview

To display a print preview, choose the ⊕ > **Print Preview...** menu item.The
Print Preview window opens. It is a secondary window that displays a preview
of the printed graph. The Print Preview window allows you to preview graph
images before you print them so you can see in advance how changes in print
setup options affect your printed images.
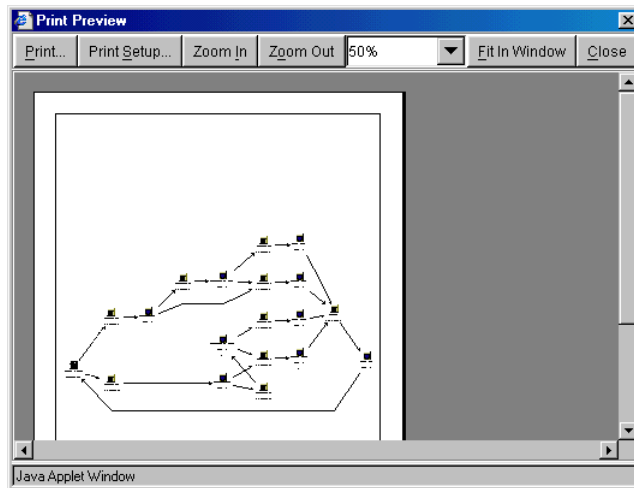
In the print preview window, you can zoom in on a preview image by moving
the mouse over it and clicking.

You may also use the following buttons to control the appearance of the print preview:

Button	Description
Print...	Invokes the standard printing mechanism for your platform.
Print Setup...	Opens the Print Setup dialog for setting printing options.
Zoom In	Increases the zoom level for the preview image.
Zoom Out	Decreases the zoom level for the previous image.
Zoom Percentage	Shows the current zoom percentage. You may select a pre-defined zoom percentage from the list or enter a custom zoom percentage.
Fit in Window	Scales the preview image to display the complete image in the preview window.
Close	Closes the Print Preview window.

Print Setup

To customize the look of your printed graph, choose the 🖨 > **Print Setup...** menu item. The Print Setup dialog opens.
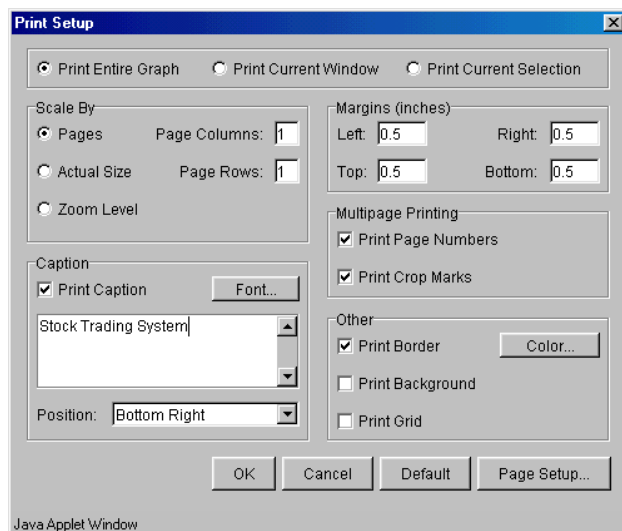
This dialog offers options for tailoring the look of your printed Component Topology Analysis or Transaction Analysis view. Set the following options, then click **OK** to apply your changes, **Cancel** to close the dialog without applying your changes, **Default** to revert to default values, or **Page Setup...** to display the Page Setup dialog for selecting paper size, orientation, and margins.

Option	Description
Print	Select the part of the graph you want to print. You may print the entire graph, only the part of the graph currently visible in the view window, or only the selected graph component.
Scale By	Set options related to page size. Select Pages and specify the number of page rows and columns to scale the image to fit the specified page size. The image is not scaled if Actual Size is selected. Choose Zoom Level to scale the image to the zoom level specified in the view.
Print Caption	Select to print the page caption in the Caption field.

Option	Description
Caption	Enter text for the page caption. You must select Print Caption to enable caption printing. To select the font for the caption, click **Font...** to display the Choose Font dialog.
Position	Select the position on the page for the caption to be printed.
Margins	Set the distances in inches between the edge of the paper and the edge of the graph. Set margins for the top, bottom, left, and right edges.
Print Page Numbers	Select to print page numbers on each page when printing multiple pages. Page numbers are printed just outside the crop marks.
Print Crop Marks	Select to print crop marks when printing multiple pages. Crop marks are the lines drawn on the margins of pages that connect to other pages.
Print Border	Select to print a border around the graph. Click **Color...** to open the Choose Color dialog for setting the border color.
Print Background	Select to print the background color. To set the background color, choose the Layout > Background Color... menu item on the Component Topology or Transaction Analysis view.
Print Grid	Select to print a background grid.

Page Setup

Click **Page Setup...** on the Print Setup dialog to open the Page Setup dialog.

Use this screen to set up page options for printing Component Topology or Transaction Analysis graphs. Set the following options, then click **OK** to activate your changes or Cancel to close the dialog without activating your changes.

Option	Description
Paper Size	Select a page style from the list.
Paper Source	Select a source from the list.
Margins	Set the distance between the text and the edge of the printed page (in inches). Set margins for the top, bottom, left, and right edges.
Orientation	Select whether to use Portrait or Landscape for setting up the page. Portrait is default (the height of the page is greater than the width). For Landscape, the width of the page is greater than the height.
Sample	Displays a preview of the selected settings.

Caption Font

Click **Font...** on the Print Setup dialog to open the Choose Font dialog.

Use this dialog to select the font to use for the caption when printing a Component Topology or Transaction Analysis graph.

Select a font family, text attributes, and font size from the drop-down lists. The sample window shows how text on the graphic will look.

Click **OK** to make your changes active or Cancel to close the dialog without activating your changes.

Border Color

Click **Color...** on the Print Setup dialog to open the Choose Color dialog. Use this dialog to set the border color for printed Component Topology Analysis and Transaction Analysis graphs.

Set the border color in the same way you set the background color for the graph. For more information, see Set Background Color on page 135.

Modify Layouts and Properties

By default, the Component Topology Analysis is arranged in a hierarchical layout according to the flow of messages through your system. While this layout is typically the best choice for e-business systems and therefore recommended, you may choose to display the Component Topology Analysis in a symmetric layout. Note that using a different layout may make it more difficult to follow the flow of messages throughout your system.

Hierarchical Layout

To select the hierarchical layout (if it is not the current layout), choose the Layout > Hierarchical Style menu item. Components are arranged in a hierarchical organization based on the flow of messages through your system, as in the following example.
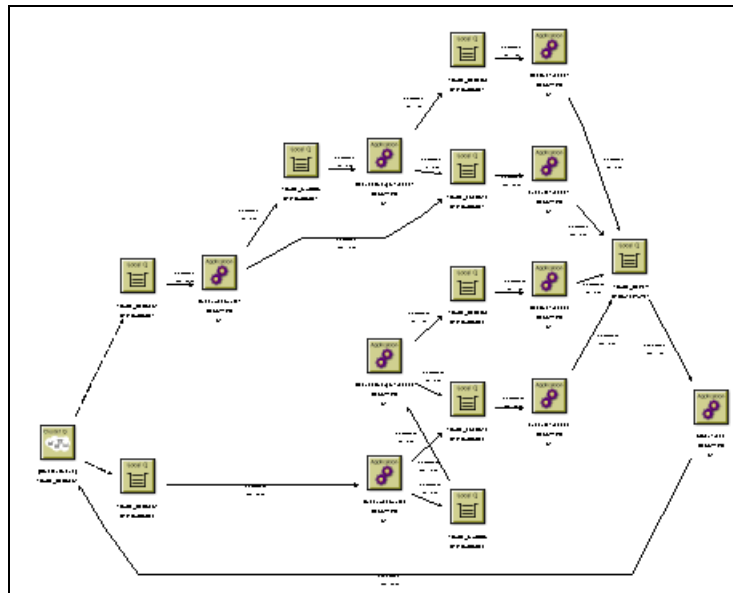
To modify layout properties, choose the **Layout** > **Layout Properties** menu item. Make desired changes on the Hierarchical page, then click **OK**.
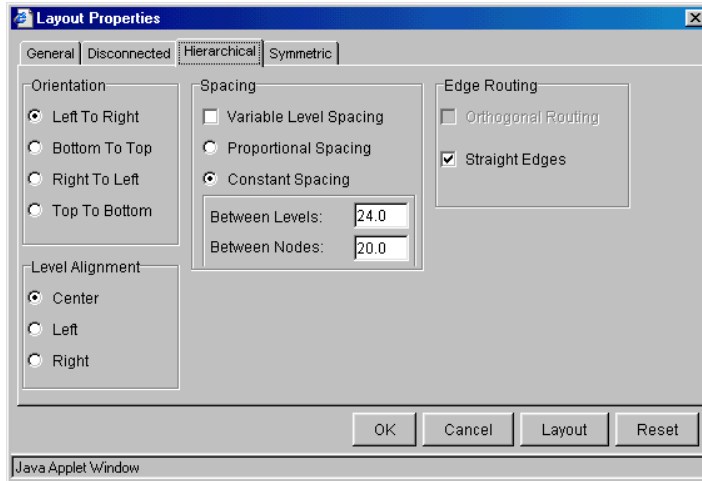
Orientation

By default, components are arranged from left to right, but you can change the orientation from top to bottom, bottom to top, or right to left.

Left To Right	Positions components so that the roots of the graph are near the left of the page, and the leaves of the graph are near the right. The levels are vertical.
Top To Bottom	Positions components so that the roots of the graph are near the top of the page, and the leaves of the graph are near the bottom. The levels are horizontal.
Right To Left	Positions components so that the roots of the graph are near the right of the page, and the leaves of the graph are near the left. The levels are vertical.
Bottom To Top	Positions components so that the roots of the graph are near the bottom of the page, and the leaves of the graph are near the top. The levels are horizontal.

Level Alignment

Level alignment refers to the alignment of components on the same level. It is similar to text alignment within a paragraph. If Orientation is horizontal (Top To Bottom or Bottom To Top), you can set the Level Alignment as either Top, Center or Bottom. If Orientation is vertical (Left To Right or Right To Left), you can set the Level Alignment as either Left, Center or Right.

Spacing

The concept of frames is used to control the margins around components. These options allow you to set the spacing between levels of components and between component within the same level in a graph by adjusting the frames that surround them.

Variable Level Spacing	When enabled, variable level spacing considers the density of edges between adjacent levels when adjusting the level spacing. For example, if too many edges cross at the same point between levels, then the level spacing is automatically increased. Consequently, not all levels would have the same spacing. Variable level spacing is usually used in combination with orthogonal edge routing.
Proportional Spacing	Sets the spacing around each node to a fractional value (between 0 and 1) based on the node size.
Constant Spacing	Allows the spacing around each node to be a constant value, independent of the size of the node.
Between Levels	This field allows you to set the spacing between each level in the graph. In left-to-right and right-to-left views, levels run vertically. In top-to-bottom and bottom-to-top views, levels run horizontally.
Between Nodes	This field allows you to set the spacing between adjacent components within a level.

Edge Routing

These options allow you to tailor edge routing.

Option	Description
Orthogonal Routing	When enabled, each edge is drawn as a sequence of line segments that run parallel to the x- and y-axes. Edges have bend points of 90 degrees only. The orthogonal routing style works best in combination with variable level spacing and ports.
Straight Edges	When enabled, this setting merges the incoming edges of a node into a single fork-like structure. Clearer drawings result provided the graph is not too dense. This feature is only available when orthogonal routing is enabled.

Symmetric Layout

To select the symmetric layout (if it is not the current layout), choose the Layout > Symmetric Style from the shortcut menu. The symmetric layout distributes components evenly with very few edge crossings, as in the following example.
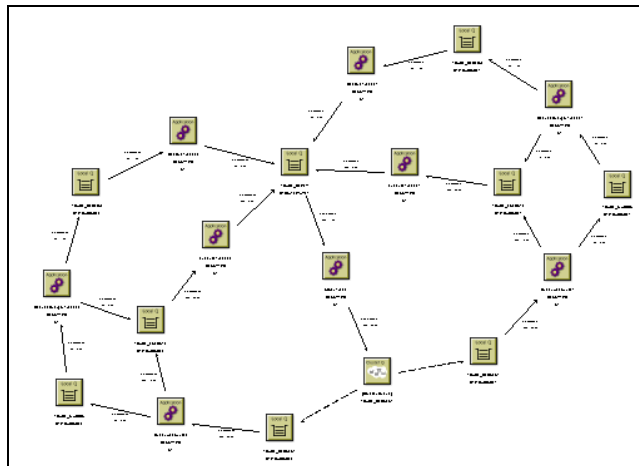
To modify symmetric layout properties, choose the **Layout** > **Layout Properties** menu item. Make desired changes on the Symmetric page, then click **OK**.
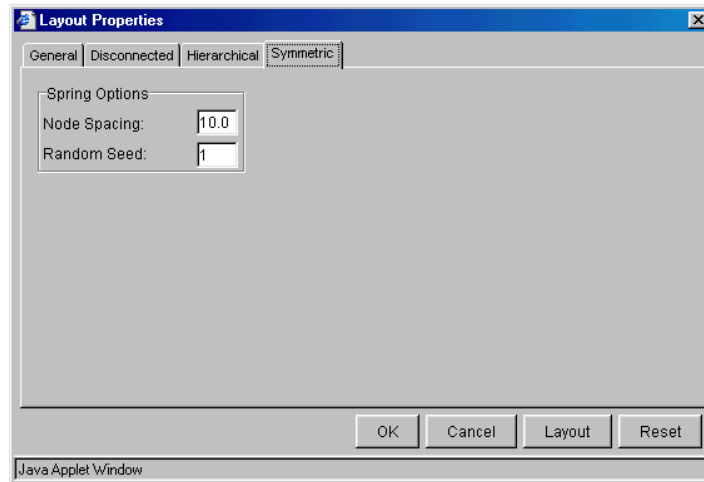
Spring Options

These controls allows you to set the options relating to the spring model of the graph.

Node Spacing
: This value is used in determining the white space between components. It specifies the length of each edge as a function of the width and height of the components to which the edge connects. A node spacing of zero specifies that edge lengths be just long enough to keep components from touching (i.e., no white space between components). The larger the node spacing value, the greater the amount of white space between components.

Random Seed
: The initial layout of the graph is keyed to a random number sequence. The value set in this field is used to generate the random number sequence to set initial coordinates for each components. Each different non-negative value can produce a different layout. This field is active when Incremental Layout is not checked.

General Properties

The General page of the Properties dialog enables you to specify settings that are independent of the layout style. To modify general layout properties, choose the **Layout** > **Layout Properties** menu item. Make desired changes on the General page, then click **OK**.
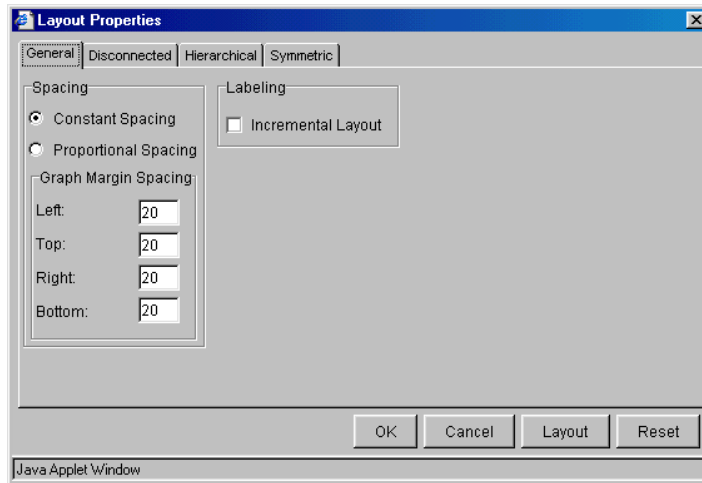
Spacing Model

The concept of frames is used to control the margins around physical objects. These options control which model is used in determining the amount of white space around the perimeter of objects in the graph. Two spacing models are

available, the Proportional Spacing model and the Constant Spacing model. Additional layout-specific spacing options are available, some of which are affected by the spacing model selected here.

Proportional Spacing	When enabled, proportional spacing is used to determine the amount of white space around the perimeter of an object based on the area of the object. For example, if a component's width and height increase, the white space between the component and an adjacent component also increases. The margins of the graph can be controlled through the Graph Margin Spacing fields below. You can set independent proportional spacings for the left, right, bottom, and top sides of the graph. Note that additional spacing controls are available on the other dialog pages.
Constant Spacing	When enabled, a constant space is allocated between like objects in a graph. For example, in hierarchical layout a fixed distance is set between each pair of adjacent components within a level, regardless of the width and height of the nodes. The margins of the graph can be controlled through the Graph Margin Spacing fields below. You can set independent constant spacing values for the left, right, bottom, and top sides of the graph. Note that additional spacing controls are available on the other dialog pages.

Graph Margin Spacing

This group of fields affects the margins for graphs. Separate frame values are stored for the Constant Spacing and Proportional Spacing models, but only one spacing model is in effect at any given time.

Labeling

This option allows you to tailor the automatic positioning of edge labels.

Select **Incremental Layout** to maintain the relative positioning of labels from a graph's previous layout whenever the graph is modified. Incremental Layout results in graphs that maintain the same overall form when changes are made.

Disconnected Properties

The generic term "disconnected objects" is used to refer to both disconnected components and connected subgraphs, unless otherwise noted. A disconnected component is one which has no edges connected to it. A connected subgraph is a graph in which there is an undirected path between each pair of components. In other words, each component can be reached from all other components by following the edges that connect them, regardless of edge direction. If there is no such path between any two components, then either the components belong to different connected components or one of the components is a disconnected node.

To modify disconnected layout properties, choose the Layout > Layout Properties menu item. Make desired changes on the Disconnected page, then click **OK**. These options only have effect if more than one disconnected object exists within the graph.
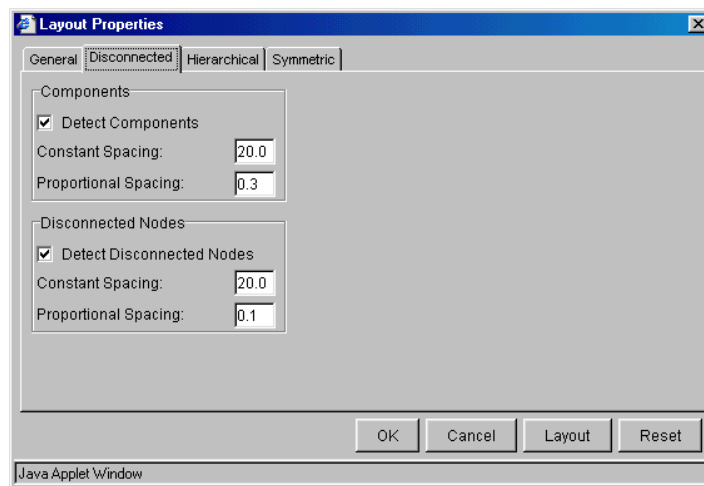
These settings allow you to edit the proportional and constant spacing between disconnected objects of a graph.

Constant Spacing	Specify the minimum amount of white space between adjacent rows and columns.
Proportional Spacing	Specify a factional value. The margin around disconnected objects is calculated as the product of this fractional value and half the height of the node.

4 Using the Transaction Analysis View

The Transaction Analysis correlates events across multiple programs, hosts, and operating systems into local transactions, then correlates local transactions into business transactions.

Transaction Analysis View Components

The following diagram shows an example Transaction Analysis view:

Business Transactions

TransactionVision tracks business transactions by relating local transactions in different processes or threads (for example, relating an MQPUT in one process to the MQGET in a different process). When communication occurs between different local transactions, they are considered part of the same business transaction. For example, when a client process sends a message to a server process, it will do so in the context of a local transaction, and the server receiving the message will similarly do so within a second local transaction. The operations performed within these two local transactions, both the communication operations that allow the two processes to exchange data as well as any other computational operations within these local transactions, are part of the same business transaction.

The pane on the left lists all business transactions that match the current query for the project. By default, the name of a business transaction is the transaction start time. However, you may write a custom Java bean to redefine transaction names into something more meaningful. For information about writing custom Java beans, see the *TransactionVision Advanced Customization Guide*.

Local Transaction Icons

The graph on the right shows a visual representation of the selected business transaction. The icons represent the local transactions that make up the selected business transaction. Each icon indicates the technology for the local transaction. The icon label shows the name of the program executing the transaction. For IMS Bridge events, each MQIMS_BRIDGE_ENTRY and MQIMS_BRIDGE_EXIT event is shown as a local transaction.

A local transaction groups related events within a single thread of execution. For the WebSphere MQ, JMS, EJB, and CICS technologies, a local transaction includes any number of operations performed during the time span of a single unit of work. Operations performed within one unit of work are either committed or are backed out together, so that the effects of a number of operations all are either made permanent (committed) or reversed (backed out) as one atomic group. For servlet events, a local transaction is a servlet call.

Edges

The connecting lines, called edges, show the relationship between the local transactions. Each edge represents a pair of put/get connections.

- A solid edge indicates a message path; it represents a flow of data. An example is a link between a transaction making an MQPUT call, which puts a message on a queue, to a transaction making an MQGET call, which takes that message out of the queue. The data transfer occurs in the direction of the arrow.

- A dashed edge indicates a weak message path. For IMS_BRIDGE_EXIT events, the edges between them and MQGET events are shown as a weak message path.

- A dotted line indicates a control flow. It represents a call sequence. For example, a servlet making several JMS calls will use a dotted line to represent a control flow. The transfer of control occurs in the direction of the arrow.
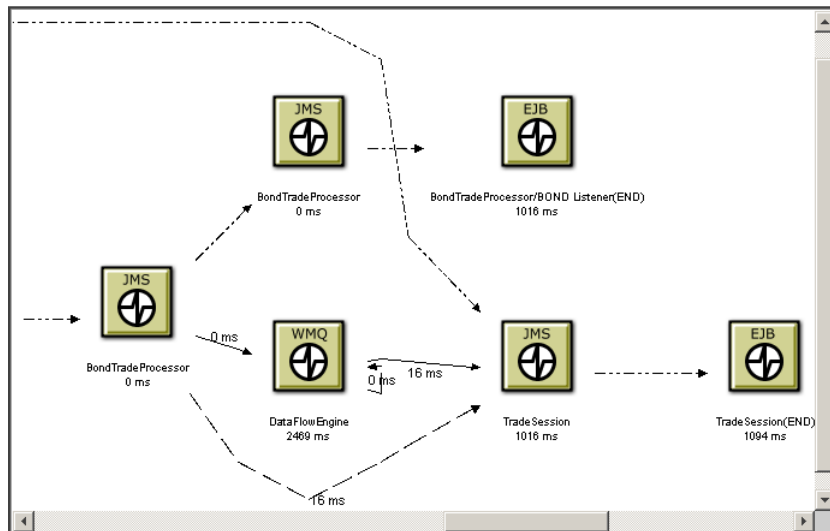
Weak Message Path

In a weak message path, the following criteria are used to match MQPUT/MQPUT1 events with corresponding MQGET events in a business transaction:

- Message ID
- Correlation ID
- Put date and time
- Application and type
- User identifier

While these criteria correctly match most events, it is possible that they may result in an incorrect match. For example, if the message ID and correlation ID are reused and two messages are put onto different queues within the same 100th of a second, a single MQGET event could match both MQPUT/MQPUT1 events.

Strong Message Paths

Strong message paths are those paths where the resolved queue manager and WebSphere MQ object name match on the message path, along with all of the criteria for weak message paths. These additional criteria further enhance the confidence of the relationship between local transactions within the business transaction.

In the following business transaction, in the first local WebSphere MQ transaction, the DataFlowEngine program gets a message from the REQUEST queue and puts it on the FX queue:
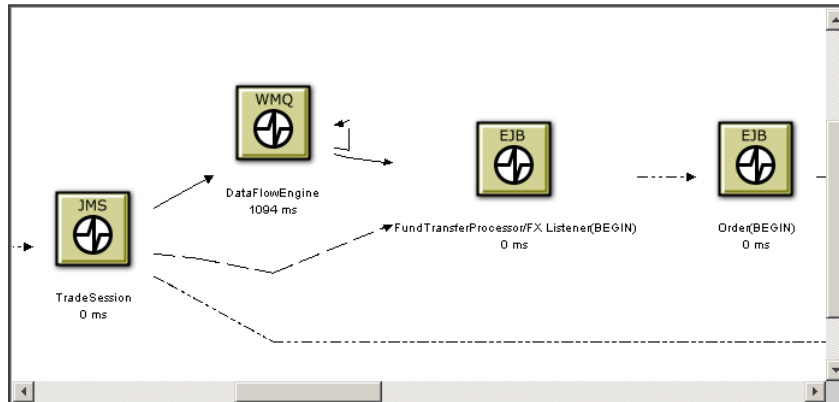
Later in the business transaction, DataFlowEngine gets a message from the REPLY queue and puts it on the REPLY_FOR_SESSION queue:
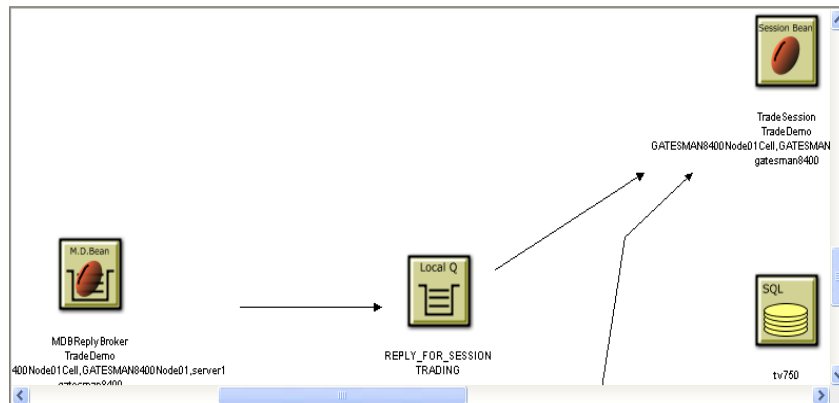
Control Flow

When TransactionVision creates the Transaction Analysis view, its goal is to show the control flow between servlets and EJBs in a linear fashion, then show the WebSphere MQ message flows around it. This view enables you to see the flow of the business process. Time values enable you to exactly how

long it takes for a servlet to complete. In the following example, the Begin and End points of the Java server pages and servlets represent the primary and secondary times of the HTTP events.
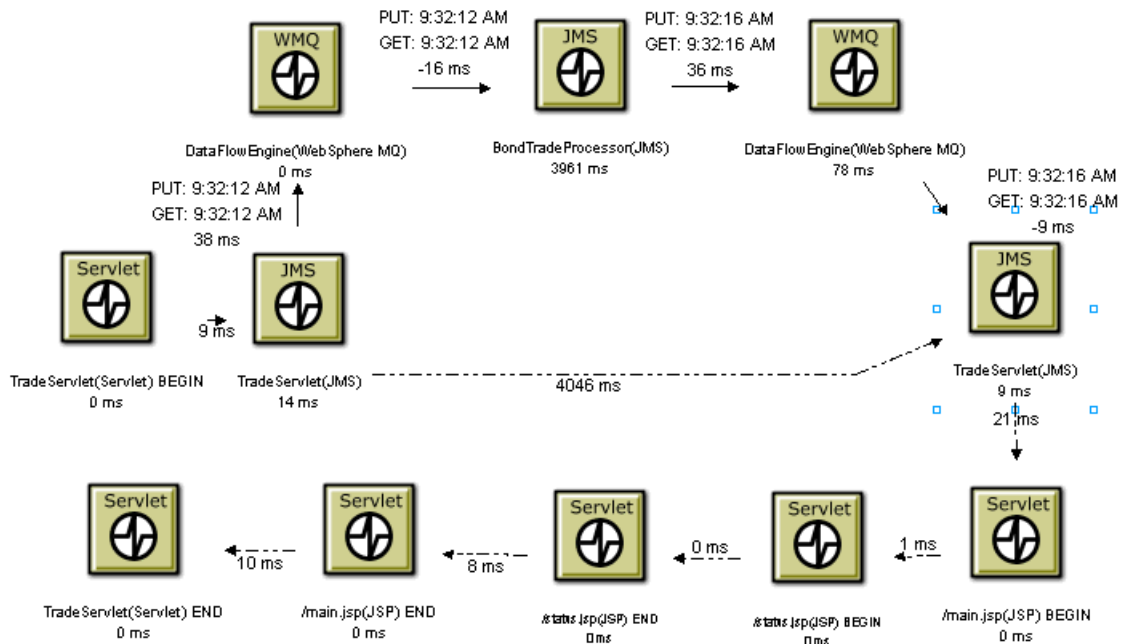
View Commands

View commands enable you to show the current transaction in the Event Analysis or Component Topology Analysis view, modify the view appearance, or print the view graph.

Proxy Paths

The proxy icon represents a proxy path rather than a transaction message path. The time shown in the icon label represents the time from the end of the MQPUT event to the beginning of the corresponding MQGET event. Proxy paths involve applications that are not monitored by a TransactionVision Sensor.

For more information about proxy objects and the proxy Sensor, see the *TransactionVision Sensor Installation and Configuration Guide*.

CICS Transactions

In addition to the program name and completion time, the Transaction Analysis view also displays the CICS transaction name for CICS transactions.

In the following example, note the program name for the third local transaction. In this transaction, the ACCB02 links to TCAPTX3.
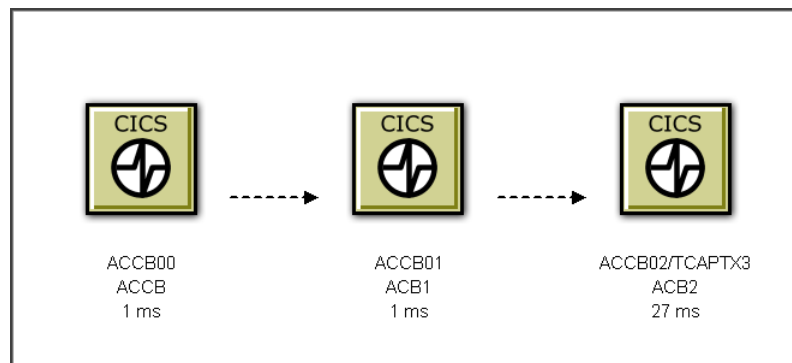
➤ TransactionVision filters out transactions that begin with a C character because they are internal CICS transactions. One exception is CKBP, which denotes a WebSphere MQ-CICS bridge transaction. All CICS DPL programs invoked through MQ-CICS bridge have this transaction name.

User Events

Local transactions containing user events are represented by the User icon. The following shows the Transaction Analysis view displaying a business transaction involving both JMS and user event local transactions. For information about implementing user events in you application, see the *TransactionVision Advanced Customization Guide*.
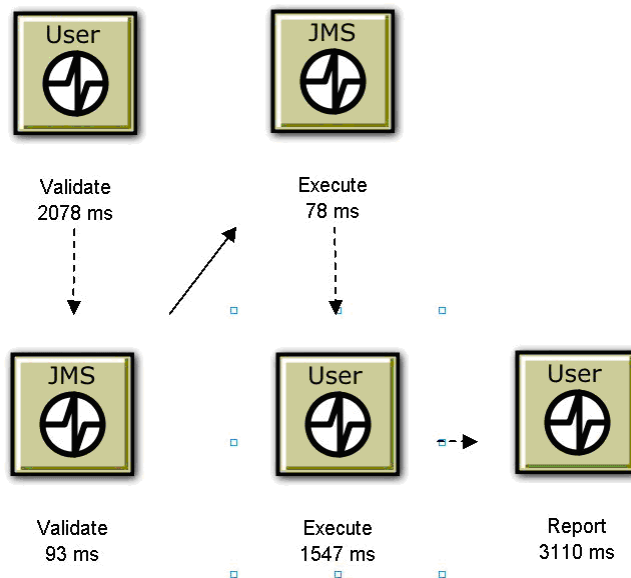
Queries and the Transaction Analysis View

Query conditions reduce the number of events displayed by restricting the hosts, queue managers, programs, times, and APIs associated with displayed events. For example, you can set query conditions to view only those transactions that include events for a specific technology, program, host, time period, or queue. For instructions on using queries, see Chapter 2, Configuring Queries.

Open and Close the Transaction Analysis

To open the Transaction Analysis, choose the **Views** > **Transaction Analysis** menu item. You may also open the Transaction Analysis from the Event Analysis view with the Open these events in: Transaction Analysis view command menu selection.

TransactionVision displays a Transaction Analysis view for the current project and query. To use a different query, select the query from the query menu in the upper right corner of the display. Select New Query from the query menu to create a new query, or select Edit Query to modify the current query. For more information about creating or modifying queries, see Chapter 2, Configuring Queries.

If your browser is unable to display the view or if the view displays, but icons do not appear correctly, your browser security settings may not be set so that TransactionVision can function properly. For instructions on setting minimum security settings for TransactionVision, see Browser Security Settings on page 25.

Moving Icons

To move any icon in the graph, select the icon in the view area and drag it to the desired location. TransactionVision automatically adjusts all edges to and from the icon.

Opening Multiple Views

You may open new browser windows and open multiple Transaction Analysis windows at once and use different queries to display different information.

If you open a Transaction Analysis view in a new browser window, any changes you make in one window are reflected in the other window when it is refreshed. If you start a new browser instance and log into TransactionVision in the new browser, however, a new TransactionVision session is started. If you use multiple sessions, changes you make in one session affect that session only.

Show/Hide the Status Bar and Business Transaction List

Use the Show/Hide arrow buttons to show, hide, or resize the business transaction list and status message panes.

To hide the status bar, click the down arrow button. To show a hidden status bar, click the up arrow button. To resize the status bar, point the cursor to either arrow button so that the cursor changes to a double arrow and drag.

To hide the business transaction list, click the left arrow button. To show a hidden business transaction list, click the right arrow button. To resize the business transaction list, point the cursor to either arrow button so that the cursor changes to double arrow and drag.

Closing the View

The Transaction Analysis view closes when you select a different view or page from the TransactionVision menus.

Refresh the View

To refresh a view with transactions completed since the view was opened, click the **Run Query** view command.

Change Default Settings

As you use the Transaction Analysis view, you may change settings such as edge labels and graph layout. To make the current settings the default for the your user name, click **Save Settings**.

Zoom In or Out

By default, TransactionVision sizes the Transaction Analysis graph to fit in the view window. You can adjust the zoom level using **Zoom In**, **Zoom Out** or **Selective Zoom**. See Zoom In or Out on page 133 for details.

Show/Hide Weak Message Paths

Choose the **Edge** > **Show Weak Link** command to show or hide weak message paths in the Transaction Analysis view.

Modify Edge Labels

You may configure edge labels to provide additional information about transaction. Edge labels may include any (or none) of the following information:

Label	Command	Description
Transaction Times	Edge & Node > Show Transaction Times	Displays edge labels showing the exit time for the put and get calls between the local transactions.
Latency	Edge & Node > Show Latency	Displays an edge label showing number of milliseconds between the exit times of the put and get calls between the local transactions. By default, latency times are calculated with a resolution of 1/100 seconds. To change the resolution, modify the value of the latency_resolution attribute in the Analyzer.properties file. See the *TransactionVision Analyzer Installation and Configuration Guide* for more information about this file.

To enable or disable any of the edge labels in the Transaction Analysis view, choose the corresponding command. The following diagram shows a Transaction Analysis graph with transaction time and latency labels enabled:
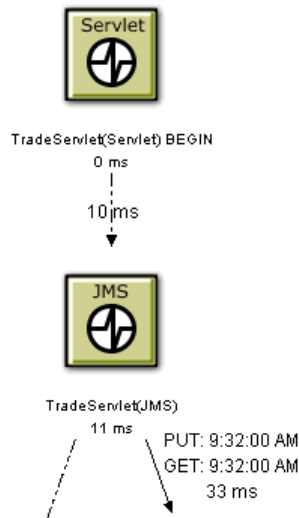
Display a Business Transaction in Other Views

When performing analysis with TransactionVision, you may want to the same events in different views. To create a new view containing events from the current business transaction, choose one of the following menu items:

- **Open View > Component Topology Analysis View** creates a new Component Topology Analysis view containing only events from the selected business transaction. The view is labelled with the business transaction ID shown in the Transaction Analysis view. For more information about using the Component Topology Analysis view, see Chapter 3, Using the Component Topology Analysis View.

- **Open View > Event Analysis View** creates a new Event Analysis view containing only events from the selected business transaction. The view is labelled with the business transaction ID shown in the Transaction Analysis view. For more information about using the Event Analysis view, see Chapter 5, Using the Event Analysis View.

- **Open View > Transaction Detail View** opens the Transaction Details view for the selected transaction.

Using the Transaction Details View

The Transaction Details page provides more detailed information for the selected transaction as shown in the following figure.

» **Detail for Business Transaction100320:**   **Project: Trade**

Summary

Class:	-Unclassified-	Start Time:	04/01/2008 13:58:38.220
Response Time:	73608.949 sec	SLA:	1.000 sec
State:	Unknown	Result:	Unknown
OrderID:	-	Account:	-
TradeType:	-	TradeAction:	-
Status:	-	Reason:	-
BondIssue:	-	BondMaturity:	-
EquitySymbol:	-	Value:	-
Customer:	-	SessionId:	-
Exception:	-	SLAState:	None

Transaction Flow

ID	Application	Start Time	Elapsed Time (sec)	Latency (sec)
1	amqrmppa on amkilab02 - WMQ	13:58:38.220	~0.000	
	→ – amqfcxba on amkilab02 - WMQ (ID = 2)	+0.000	0.032	4.429
	→ – amqfcxba on amkilab02 - WMQ (ID = 3)	+0.000	0.032	4.429
2	amqfcxba on amkilab02 - WMQ ⚠	13:58:42.649	~0.000	
	← – amqrmppa on amkilab02 - WMQ (ID = 1)	+0.000	~0.000	4.429
	← – TRADING:SYSTEM.BROKER.IQ.1.4 ⚠	+0.000	~0.000	
6	amqfcxba on amkilab02 - WMQ ⚠	+71695.583	~0.000	
	← – amqrmppa on amkilab02 - WMQ (ID = 4)	+71695.583	~0.000	4.267
	→ – amqfcxba on amkilab02 - WMQ (ID = 6) ⚠	+71695.583	~0.000	71695.583
	← – amqfcxba on amkilab02 - WMQ (ID = 2) ⚠	+71695.583	~0.000	71695.583
9	amqfcxba on amkilab02 - WMQ ⚠	+1801.843	0.016	
	← – amqrmppa on amkilab02 - WMQ (ID = 7)	+1801.843	~0.000	5.047
	→ – amqfcxba on amkilab02 - WMQ (ID = 9) ⚠	+1801.843	~0.000	1801.843
	← – amqfcxba on amkilab02 - WMQ (ID = 6) ⚠	+1801.843	~0.000	1801.843
12	amqfcxba on amkilab02 - WMQ ⚠	+107.079	0.015	
	← – amqrmppa on amkilab02 - WMQ (ID = 10)	+107.079	~0.000	5.045
	→ – amqfcxba on amkilab02 - WMQ (ID = 12) ⚠	+107.079	~0.000	107.079
	← – amqfcxba on amkilab02 - WMQ (ID = 9) ⚠	+107.079	~0.000	107.079
	→ – amqrmppa on amkilab02 - WMQ (ID = 13)	+0.000	~0.000	5.014
	→ – amqrmppa on amkilab02 - WMQ (ID = 14) ⚠	+0.000	~0.000	5.014
3	amqfcxba on amkilab02 - WMQ	13:58:42.649	~0.000	
	← – amqrmppa on amkilab02 - WMQ (ID = 1)	+0.000	~0.000	4.429
5	amqfcxba on amkilab02 - WMQ	+165.286	~0.000	
	← – amqrmppa on amkilab02 - WMQ (ID = 4)	+165.286	71530.281	4.251
8	amqfcxba on amkilab02 - WMQ	+72902.015	~0.000	
	← – amqrmppa on amkilab02 - WMQ (ID = 7)	+72902.015	430.125	5.047
11	amqfcxba on amkilab02 - WMQ	+537.188	~0.000	
	← – amqrmppa on amkilab02 - WMQ (ID = 10)	+537.188	0.016	5.045
4	amqrmppa on amkilab02 - WMQ	09:53:33.965	~0.000	
	→ – amqfcxba on amkilab02 - WMQ (ID = 5)	+0.000	0.015	4.251
	→ – amqfcxba on amkilab02 - WMQ (ID = 6)	+0.000	0.015	4.267
7	amqrmppa on amkilab02 - WMQ	10:23:35.028	~0.000	
	→ – amqfcxba on amkilab02 - WMQ (ID = 8)	+0.000	0.016	5.047
	→ – amqfcxba on amkilab02 - WMQ (ID = 9)	+0.000	0.016	5.047
10	amqrmppa on amkilab02 - WMQ	10:25:22.109	~0.000	
	→ – amqfcxba on amkilab02 - WMQ (ID = 11)	+0.000	0.016	5.045
	→ – amqfcxba on amkilab02 - WMQ (ID = 12)	+0.000	0.016	5.045
13	amqrmppa on amkilab02 - WMQ	+0.016	~0.000	
	← – amqfcxba on amkilab02 - WMQ (ID = 12)	+0.016	0.015	5.014
14	amqrmppa on amkilab02 - WMQ ⚠	+0.015	~0.000	
	← – amqfcxba on amkilab02 - WMQ (ID = 12) ⚠	+0.015	~0.000	5.014

Legend: ← → Control Flow ←⬛← →⬛→ Message Flow →⬛ ←⬛ Queue Access →◻ ←◻ Resource Access ⇥ Create Thread ✖ Error ⚠ Warning

[Show in Event Analysis View] [Show in Transaction View] [Show in Topology View]

- The **Summary** shows the class, response time, status, start time, result, and the value for any custom attributes (SLAState and SLA in this example).

- The **Transaction Flow** shows the local transaction ID, application name, start time, and processing time for each local transaction within the selected business transaction. An icon indicates whether the local transaction starts a message flow, accesses a queue, accesses a resource, or creates a thread.

  If a message flow starts from the application in a local transaction, a sub-row appears. The direction of the arrows in the message flow icon in the sub-row indicates whether a message flow starts or ends from the application. Arrows pointing right indicate a message flow start; arrows pointing left indicate a message flow end. The message flow icon is followed by the name of the application where the message flow starts or ends. Both the queue icon and the application name link to the local transaction where the message flow ends. Click this link to navigate to the local transaction where the message flow ends.

  A sub-row without an icon indicates that a control flow starts from the application. The sub-row specifies the name of the application where the control flow ends. Click the application name in the sub-row to navigate to the local transaction where the control flow ends.

  Note that processing time for each program does not include the CICS TASK_START and TASK_END events, because these events do not contain a program name. Therefore, the processing time in this report differs slightly from the execution times in the Transaction Analysis view.

To display the Event Details view for an event message in the Transaction Details page, click the message link in the Transaction Flow table or the latency link in the Message Flow table. The Event Details view opens in a separate browser window. For a message flow, separate panes show a side-by-side comparison of the departure and arrival user data buffer. For a control flow, only the event details for the event that corresponds to the destination event in the control flow are shown. For more information about the Event Details view, see Chapter 6, Using the Event Detail View.

To display the current business transaction in the Transaction Analysis view, click **Show in Transaction View** on the Transaction Details page. The Transaction Analysis View opens in a separate browser window. See Using the Transaction Details View on page 164.

Note that the current query is not applied to the Transaction Analysis view. All business transactions are listed in the left pane, with the selected transaction highlighted.

To display the current business transaction in the Event Analysis view, click **Show in Event Analysis View** on the Transaction Details page. The Event Analysis View opens in a separate browser window. For more information about the Event Analysis view, see Chapter 5, Using the Event Analysis View.

To display the current business transaction in the Component Topology Analysis view, click **Show in Topology View** on the Transaction Details page. The Component Topology Analysis View opens in a separate browser window. For more information about the Transaction Analysis view, see Chapter 3, Using the Component Topology Analysis View.

Print Graphs

To print the Transaction Analysis graph using the current print setup, choose the 🖨 > **Print Graph...** menu item. TransactionVision invokes the standard printing mechanism for your platform.

▶ When you print a graph, a Java warning appears asking permission to print. This message is generated by the Java security feature to prevent unauthorized use of printers. The first time you print in a session, it appears multiple times; it appears once after the first time you print. To disable this message, add the following lines in the .java.policy file in your home directory on the client computer:

```
grant {
  permission java.lang.RuntimePermission "queuePrintJob";
};
```

For complete details about printing a graph, see Print Graphs on page 137.

Modify Layouts and Properties

By default, the Transaction Analysis is arranged in a hierarchical layout. While this layout is typically the best choice for e-business systems and therefore recommended, you may choose to display the Component Topology Analysis in a symmetric layout. Note that using a different layout may make it more difficult to follow the flow of messages throughout your system.

Modifying the layouts and properties of the Transaction Analysis is the same as modifying layouts and properties of the Components Topology Analysis. See Modify Layouts and Properties on page 143 for details.

5 Using the Event Analysis View

Event Analysis Overview

The Event Analysis view shows all the events in the project that meet query conditions. By default, this view displays a number of attributes for each event. To see this view, select **Views > Event Analysis**.

Event Attributes

The following table lists all the available attribute columns:

Column	Description
API Name	The WebSphere MQ or JMS API name, the HTTP request, or EJB methods name.
Application Server	For servlet events, the name of the WebSphere MQ application server associated with the event. For WebSphere Application Server 5.0 Express Edition, the application server name default is server1; other names are an alias for this server name.
CICS API Type	For CICS events, the API type (File Control, Interval Control, Program Control, Program Start, Start Attach, Task End, Task Start, Temporary Storage, and Transient Data).
CICS Appl ID	The name by which CICS is known to the network.
CICS Resource ID	For CICS events, the resources used by CICS transactions. Currently, these resources are file name, transient data (TD) queue name, and temporary storage (TS) queue name.
CICS Response Code	For CICS events, the CICS response code associated with the event.
CICS Startcode	A two character code indicating how the CICS transaction associated with the event was started. Refer to the CICS Application Programming Reference (ASSIGN command) for the range of Startcode values and meanings.
CICS SYSID	The CICS SYSID associated with the event.
CICS Task	The CICS task associated with the event.
CICS Terminal ID	The CICS Terminal ID associated with the event.
CICS Transaction	The CICS transaction ID associated with the event.

Column	Description
Completion Code	The completion code in the WebSphere MQ API call return from the WebSphere MQ library.
Connection Name	For all technologies, the connection name represents the connection the event is using. For WebSphere MQ, the connection name and queue manager are typically the same, except in the case where you open a queue on one queue manager using a connection (specified with the hConn parameter) to a different queue manager over a transmission queue. For example, suppose your program opens queue QM1.Q using a connection to queue manager QM1, then later opens QM1.Q using a connection to queue manager QM2. This event shows QM1.Q as the object name, QM1 as the queue manager, and QM2 as the connection name.
Data Size	For WebSphere MQ events, The size in bytes of the user data buffer for MQGET, MQPUT, and MQPUT1 calls. For JMS events, the size of JMS user data in send and receive calls. For Servlet events, the size of the returning HTML page.
Database	For JDBC events, the database name that these events are connected to.
EJB Name	For EJB events, the EJB name associated with the event. If the Program Name column is displayed, the EJB name also appears as the program name.
Entry Time	The time stamp of when the event initiated.
Event Time	The time used to order the event chronologically. It may be either the value of the event entry time or the event exit time, depending on the API. For some event types such as those that receive messages, the important time is not when the event was first called, but when it returned (when the message was received). For those events, the event time is the event exit time; for all other events, the event time is the event entry time.
Exit Time	The time stamp of when the event finished.

Column	Description
Host Name	The host running the application that called the WebSphere MQ or JMS API or the host the WebSphere application server is running on.
Host IP	The host IP address of the machine the events occurred on.
i5/OS Job Name	The i5/OS job name associated with the event.
JDBC Class	For JDBC events, the JDBC class associated with the event.
JMS Class	For JMS events, the JMS class associated with the event.
JMS Exception Code	For JMS events, the exception code associated with the event.
JMS Queue	For JMS events, the name of the JMS queue associated with the event.
Object Name	The WebSphere MQ object (queue, distribution list, namelist, etc.) associated with the event.
Program Name	The name of the program making the event.
Queue Manager	The WebSphere MQ queue manager associated with the WebSphere MQ event. The queue may not be always be the same as the connection name. For example, it will be different when you are putting to a queue on a different queue manager from your connection over a transmission queue.
Reason Code	The reason code in the WebSphere MQ API call return from the WebSphere MQ library.
Reply To Queue	The WebSphere MQ or JMS queue in the Reply To field.
Reply To Queue Manager	The WebSphere MQ or JMS queue manager in the Reply To field.
Servlet	For servlet events, the name of the servlet associated with the event.

Column	Description
SQLCode	For JDBC events, SQL code used by JDBC. The code is based on the underlying database vendor.
SQL Objects	For JDBC events, tables, stored procedures, views, this event accesses.
SQLState	For JDBC events, SQL State values used by JDBC. The values are based on the underlying database vendor.
SQL Type	For JDBC events, type of SQL statement — batched SQL statements such as DELETE, INSERT, MERGE, SELECT, Stored Procedure, UPDATE.
Status Code	For servlet events, the status code associated with the event. Note: The TransactionVision servlet Sensor is unable to get the response status code and any headers in the response object for servlet events generated from an HTTP_HEAD request. Therefore, the status code value for HTTP_HEAD events is always N/A.
Technology	The technology used by the event. Currently, WebSphere MQ, JMS, Servlet, and EJB technologies are supported.
Topic	For JMS events, the name of the topic associated with the event.
Txn ID	For transaction events, the query on the transaction identifier.
Txn Class	For transaction events, the query on the selected transaction class.
Txn Start Time	For transaction events, the query on the transaction start time.
Txn End Time	For transaction events, the query on the transaction end time.
Txn Response Time	For transaction events, the query on the response time, in milliseconds, of the transaction.

Column	Description
Txn State	For transaction events, the events from transactions that are in a Completed/Processing/Unknown state.
Txn Result	For transaction events, the events from transactions that have a Failed/Success/Unknown result.
Txn Label	For transaction events, the events from transactions based on matching the transaction label.
Txn SLA State	For transaction events, the query on the SLA state of Aged out/None/Violated.
User Event Class	For user events, the class associated with the event. For information about implementing user events in your application, see the *TransactionVision Advanced Customization Guide*.
User Event Completion Code	For user events, the completion code associated with the event. For information about implementing user events in your application, see the *TransactionVision Advanced Customization Guide*.
User Event Status	For user events, the status associated with the event. For information about implementing user events in your application, see the *TransactionVision Advanced Customization Guide*.
User Event Object	For user events, the object associated with the event. For information about implementing user events in your application, see the *TransactionVision Advanced Customization Guide*.
Web Application	For servlet events, the name of the web application associated with the event.
z/OS IMS ID	The z/OS IMS identifier associated with the event.
z/OS IMS PSB	The z/OS IMS PSB name associated with the event.
z/OS IMS Region ID	The z/OS IMS region identifier associated with the event.

Column	Description
z/OS IMS Region Type	The z/OS IMS region type associated with the event.
z/OS IMS Transaction	The z/OS IMS transaction name associated with the event.
z/OS Job Name	The z/OS Batch job name associated with the event.
z/OS Job Step	The z/OS Batch step name associated with the event.

By default, some columns (for example, those pertaining only to z/OS events) are hidden. See Set View Options on page 181 for instructions on showing and hiding attribute columns.

Color-Coded Completion Codes

Events with a warning or error completion code are displayed in a different color from other events, making them easy to spot.

Sort Order

If the events are sorted, an arrow to the left of the first attribute column heading indicates the sort order. A down arrow indicates that events are sorted in chronological order. An up arrow indicates reverse chronological order. If the events are not sorted, no arrow is displayed.

For information about sorting, see Sorting and Navigating Large Numbers of Events on page 177.

Navigation

TransactionVision displays events in pages according to the number of events per page specified in the Event List Options dialog. See Set View Options on page 181 for instructions on using this dialog.

If your Event Analysis view contains more than one page of events, use the following navigation links, located below the events, to navigate between pages:

Link	Description
Page Number	Type the page number of the page you wish to display. The numbers to the left of this field indicate the current page number and the total number of pages. For example, [130/731] indicates that the current page is page 130 of 731 total pages.
First Page	Displays the first page of events. This navigation link only appears after page 10 or greater has been displayed.
Prev 10	Goes back 10 pages. This navigation link only appears after page 10 or greater has been displayed.
Prev	Displays the previous page of events. This navigation link does not appear on page 1.
Next	Displays the next page of events.
Next 10	Goes forward 10 pages.
Last Page	Displays the last page of events.

►   If a large number of events match your query (greater than 100,000 by default), you may optionally disable bi-directional scrolling for faster display. If you disable bi-directional scrolling, the Prev 10 and Prev links will not appear. See Sorting and Navigating Large Numbers of Events on page 177 for more information.

Queries and Event Analysis

Query conditions reduce the number of events displayed by restricting the hosts, queue managers, programs, times, and APIs associated with displayed events. For instructions on using queries, see Chapter 2, Configuring Queries.

View Commands

View commands enable you to show selected events in the Transaction Analysis or Component Topology Analysis view, view only events in the same local or business transaction, view event details, or set display options for the view.

Open and Close the Event Analysis

To open the Event Analysis, choose the **Views** > **Event Analysis** menu item. You may also open the Event Analysis from the Transaction Analysis view with the **Switch View > Event Analysis view** command menu selection.

TransactionVision displays an Event Analysis view for the current project and query. To use a different query, select the query from the Query dropdown list in the upper right corner of the display. Select **New Query** from the Query list to create a new query, or select **Edit Query** to modify the current query. For more information about creating or modifying queries, see Chapter 2, Configuring Queries.

Sorting and Navigating Large Numbers of Events

Sorting large numbers of events in the Event Analysis view may take quite a bit of time. Enabling bi-directional navigation (so that you can scroll to previous as well as following pages in the view) for large numbers of events also slows performance. To improve performance in the Event List view, you may choose not to sort results and/or enable bi-directional navigation for query results that exceed a certain threshold.

By default, TransactionVision displays the following dialog if the number of events that match the current query is greater than 100,000:

The number of events returned by this query is 226,802, which exceeds the predefined user interface performance threshold of 100,000. It is recommended that you edit the current query to limit the number of events returned, or select a different query that will produce fewer events.

As an alternative, response time can be improved if sorting and bidirectional page navigation are disabled in the Event Analysis view. Use the following options to fine-tune performance to your needs.

Sort the query result?   ⦿ Yes   ○ No

Allow bidirectional navigation?   ⦿ Yes   ○ No

☐ Make these selections the default behavior and do not show this dialog in the future. Selections may later be changed from the Event Analysis Options page.

[OK]

To change the default number of events for this message to be displayed, change the value on the Event Analysis Options page. See Set View Options on page 181 for instructions.

The recommended action in response to this message is to modify your query to produce fewer events. If you do not wish to modify the query, you may improve response time by disabling sorting of events in this view and/or disabling bi-directional navigation.

Sorting Query Results

To sort events in the Event List view, click **Yes** in response to Sort the query result? For faster display, click **No**.

Allowing Bi-directional Navigation

To enable bi-directional navigation, click **Yes** in response to Allow bi-directional navigation? For faster display, click **No**. If you do not allow bi-directional navigation, the Previous links are not available at the bottom of the view as in the following example; only forward navigation is allowed.

| | Home | Views | Current Project | Administration | Reports | Logout | Help |

	Event Time	API Name	Host Name	Program Name	Technology	Data Size	Servlet	Web Application	Application Server
☐	04/03/2008 14:07:31.811	MQGET	amkilab02	amqfcxba	WebSphere MQ				
☐	04/03/2008 14:07:31.811	MQGET	amkilab02	amqfcxba	WebSphere MQ				
☐	04/03/2008 14:04:41.780	MQGET	amkilab02	amqfcxba	WebSphere MQ				
☐	04/03/2008 14:02:21.717	MQGET	amkilab02	amqfcxba	WebSphere MQ				
☐	04/03/2008 13:59:31.608	MQGET	amkilab02	amqfcxba	WebSphere MQ				
☐	04/03/2008 13:59:31.608	MQGET	amkilab02	amqfcxba	WebSphere MQ				
☐	04/03/2008 13:57:11.592	MQGET	amkilab02	amqfcxba	WebSphere MQ				
☐	04/03/2008 13:54:31.530	MQGET	amkilab02	amqfcxba	WebSphere MQ				
☐	04/03/2008 13:52:01.484	MQGET	amkilab02	amqfcxba	WebSphere MQ				

» Event Analysis - 1001810 Events (showing 1 through 50)   Project: Trade

Query:: All Events

/20037] Page Number: [ ] Go   First Page Prev 10 Prev Next Next 10 Last Page

Open these events in: Event Analysis | View events as: No Transaction | Clear Checks | Run Query | Detail | Compare | Options

When the last page is displayed, the Next link is no longer displayed.

Changing Default Settings

Once you specify whether to sort the query result and allow bi-directional scrolling, you may choose to make your selection the new default behavior. If you check the box to make this selection the default behavior, the Sort dialog will not appear in the future.

You may also set sorting and navigation defaults on the Event Analysis Options dialog. See Set View Options on page 181 for instructions.

Selecting and Deselecting Events

To perform operations such as viewing only events in the same business or local transaction or displaying event details, you must select an event. To select an event, click your cursor in the checkbox to the left of the event. You may select two events; if you select a third event, the first selected event is automatically deselected so that only the two most recent events clicked are selected.

To deselect an event, click the checkbox again to clear the checkmark. To deselect all selected events (useful if selected events are not near each other in the Event Analysis view), click **Clear Checks**.

Closing the View

The Event Analysis view closes when you select a different view or page from the TransactionVision menus.

Refresh the View

To refresh a view with events collected since the view was opened, click the **Run Query** view command.

View Related Events

By default, the Event Analysis displays all events in the project that match the current query conditions.

Business Transaction

To display only events in the same business transaction as an event, click the checkbox next to the event to select it and choose the **View events as** > **Business Transaction** menu item.

Local Transaction

To display only events in the same local transaction as an event, select the event and choose the **View events as** > **Local Transaction** menu item.

No Transaction
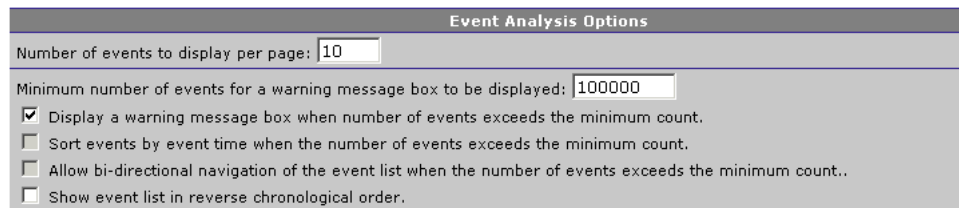
To view all events after viewing only events in a local or business transaction, choose the **View events as** > **No Transaction** menu item.

Set View Options

To customize the appearance of the Event Analysis, click **Options**. The Options page appears.

Set the following options, then click **Finish** to activate your changes or Cancel to close the dialog without activating your changes:

Event Analysis Options

Event Analysis Options
Number of events to display per page: 10
Minimum number of events for a warning message box to be displayed: 100000
☑ Display a warning message box when number of events exceeds the minimum count.
☐ Sort events by event time when the number of events exceeds the minimum count.
☐ Allow bi-directional navigation of the event list when the number of events exceeds the minimum count..
☐ Show event list in reverse chronological order.

Set the default behavior for sorting events and navigating in the Event Analysis view. These options are useful for improving performance when large numbers of events match the query.

• To set the number of events that TransactionVision will display per page, set the desired value for the **Number of events to display per page** option.

- To change the threshold number at which the dialog is displayed, set the desired value for the **Minimum number of events for a warning message box to be displayed** option.

- To display the dialog shown in Sorting and Navigating Large Numbers of Events on page 177 each time the number of events in this view exceeds the threshold, check **Display a warning message box when number of events exceeds the minimum count**. If this option is not checked, TransactionVision uses the default behavior set by the user in the dialog. The user's default is displayed on the Options page.

- To sort events chronologically when the number of events exceeds the threshold, check **Sort events by event time when the number of events exceeds the minimum count**. If this option is not checked, TransactionVision does not sort the events in the Event Analysis view. Disabling sorting improves performance for large numbers of events.

- To allow bi-directional navigation when the number of events exceeds the threshold, check **Allow bi-directional navigation of the event list when the number of events exceeds the minimum count**. If this option is not checked, the Prev and Prev 10 navigational links are not shown in the Event Analysis view. Disabling bi-directional navigation improves performance for large numbers of events.

- To show most recent events first in the Event Analysis view, check **Show event list in reverse chronological order**. By default, events are shown in chronological order if they are sorted. This option is not available if sorting is disabled.

Detail Options

Detail Options
Number of User Data bytes to display: 100

Enter the number of bytes of user buffer data to display in the Event Details view.

Time Column Format

Click the **Show the date along with the time** checkbox to turn on/off the display of the date in addition to the time in the Entry Time and Exit Time columns.

Select whether times in the Entry Time and Exit Time columns should be displayed in millisecond or microsecond format. Note that only events generated on the z/OS and UNIX platforms are recorded with microsecond precision.

Time Zone Options

Select the desired time zone for the Entry Time and Exit Time columns. The timestamp for all events is recorded in Greenwich Mean Time, but all times are displayed in local time for the selected time zone.

Event Analysis Columns

You can add, hide and sort the columns shown in the Event Analysis View. To show all columns associated with one or more technologies, check the checkbox for the desired technology. The associated columns for each selected technology (shown in the following table), are automatically moved to the All Selected Columns list. Clearing a checkbox automatically moves associated columns to the All Available Columns list. For descriptions of the columns shown in this table, see Event Attributes on page 170.

Technology	All Selected Columns
Common	Event Time, Entry Time, Exit Time, API Name, Host Name, Host IP, Program Name, Technology, Data Size
EJB	EJB Name
JDBC	SQL Type, JDBC Class, SQL Objects, Database, SQLCode, SQLState
JMS	JMS Class, JMS Queue, Topic, JMS Exception Code
CICS	CICS Task, CICS SYSID, CICS Transaction, CICS API Type, CICS Terminal ID, CICS Appl ID, CICS Start Code, CICS Resource ID, CICS Response Code
Servlet	Status Code, Servlet, Web Application, Application Server

Technology	All Selected Columns
User Event	User Event Class, User Event Completion Code, User Event Status, User Event Object
WebSphere MQ	Completion Code, Reason Code, Connection Name, Queue Manager, Object Name, Reply To Queue Manager, Reply To Queue
WebSphere MQ z/OS Batch	z/OS Job Name, z/OS Job Step
WebSphere MQ z/OS IMS	z/OS IMS Region ID, z/OS IMS Region Type, z/OS IMS Id, z/OS IMS Transaction, z/OS IMS PSB
WebSphere MQ i5/OS	i5/OS Job Name
Transactions	Txn ID, Txn Class, Txn Start Time, Txn End time, Txn Response time, Txn State, Txn Result, Txn Label, Txn SLA State

To show a hidden column, select the column name in the All Available Columns list and click the right arrow. To hide a visible column, select the column name in the All Selected Columns list and click the left arrow. The All Selected Columns list must contain at least one column.

To change the order of the columns in the Event Analysis, select a column name in the All Selected Columns list and click the up and down arrows.

View Event Details

To view event details for a single event in the Event Analysis, click the API name in the event list entry or select the event and click **Details**. To view event details side-by-side for two events, select them and click **Compare**.The Event Details view opens, displaying detailed information about the event. See Chapter 6, Using the Event Detail View for more information about this view.

Menu Item	Description
Component Topology Analysis	Creates a Component Topology Analysis view. If you are currently viewing events as a local or business transaction, only components related to those transaction events are shown in the Component Topology Analysis. If you are currently viewing no transactions, the Component Topology Analysis reflects all events in the project that meet the current query conditions. For more information about using the Component Topology Analysis view, see Chapter 3, Using the Component Topology Analysis View.
Transaction Analysis	Creates a new Transaction Analysis view. If you are currently viewing events as a business transaction, that business transaction is selected and displayed in the Transaction Analysis view. Otherwise, the first business transaction in the project is selected and displayed. For more information about using the Transaction Analysis view, see Chapter 4, Using the Transaction Analysis View.

6 Using the Event Detail View

The Event Details view provides additional information about any event in the Transaction Analysis or the Event Analysis. The Event Details view interprets and displays all of the information in the MQMD header information, the dead letter queue header, and the user data buffer associated with the event.

Open and Close the Event Details View

To view details about an event, select the event in the Event Analysis View and click **Detail**. The Event Details window opens.

Field	Value
⊟ Event Information	
│ ├ API Name	MQPUT
│ ⊟ HostArch	
│ │ ├ OS	Windows XP
│ │ └ Vendor	Microsoft
│ ├ Encoding	MQENC_NATIVE (546)
│ ├ CCSID	1252
│ ├ EntryTime	03/27/2008 09:13:28.896000
│ ├ ExitTime	03/27/2008 09:13:28.896000
│ ├ TimeSkew	00:00:00.000
│ ├ CommlinkTimeSkew	00:00:00.003
│ ├ ClientTimeSkew	00:00:00.000
│ ├ Host	gatesman8400
│ ├ HostIPAddress	192.168.1.111
│ ├ TechName	WebSphere MQ
│ ├ UserName	gatesman
│ ├ ProgramPath	C:\Program Files\IBM\WebSphere MQ\bin\
│ ├ ProgramName	amqfcxba
│ ⊟ ProgramInstance	
│ └ StartTime	03/26/2008 19:20:47.125000

[Collapse All] [Expand All] [Save As XML]

User Data	
⊟ <Order>	
├ <ID>	00000119cfeacb9b000000000000001f
├ <Account>	MID210001
├ <Transaction>	Transfer
├ <OrderType>	Cash
├ <Product>	FUND
├ <MarginRatio>	0
├ <UnitPrice>	1.0
├ <Quantity>	12000
├ <Amount>	12000.0
├ <Status>	OPEN
├ <Reason>	Normal
├ <Currency>	USD
└ <RecvAcct>	SE550005

Callout (top): Click to collapse data structure fields. A + indicates a collapsed field. Click it to expand.

Callout (bottom): User data buffer pane

This is a secondary window that displays the contents of the event data structure fields. If the event is for any of the following calls, the window displays the contents of the user data buffer for the event in a separate pane below the other fields:

- WebSphere MQ MQPUT, MQPUT1, or MQGET calls. Note that for IBM z/OS Batch events, the WebSphere MQ connection handle seen by the user application and the one reported by the Analyzer are always different. The user application sees the SPC pointer, while the Analyzer reports the real connection handle.

- JMS send or receive calls.

- Servlet HTTP_POST or HTTP_GET requests. When a servlet includes other servlets to compose its contents, the user data for each included servlet shows the portion of contents it generated. The user data for the parent servlet shows all the contents generated by all included servlets, plus its own data.

▶ Note that if the data collection filter assigned to the project specifies to collect the API Names Only data range, TransactionVision is unable to display details for events recorded with that filter. See the *TransactionVision Administration Guide* for more information about data collection filters.

Expand and Collapse Details

TransactionVision displays event details in a hierarchy, enabling you to view different levels of detail.

To expand a single node, click the arrow. To expand all nodes, click **Expand All**.

To collapse the details below a single node, click the arrow. To collapse all nodes, click **Collapse All**.

Save Copy of Event Details

To save a copy of the current event as an XML document, click **Save as XML**. This option is only available for Internet Explorer.

Compare Two Events

To compare values for two events, select them both in the Event Analysis view and click **Compare**. The details appear in a secondary window that displays the contents of the event data structure fields for both events side-by-side. If the events are both for the same call type (for example, both for MQGET events or

both JMS send events), any fields with different values are highlighted in yellow. Note that any two EJB events are comparable, too. The difference will be highlighted and the event detail tree nodes is sorted under the same level.

Scroll lock is automatically set for the left and right panes. Scrolling in one window automatically scrolls the other window so you can compare fields easily.

Set Data Buffer Display Options

You may set the following options for the user data buffer contents:

Option	Description
View Data As:	Select whether to display the contents of the user data buffer in binary or text format.
Code Page:	Applies code page conversions to event data. Choose **Auto-Detect** or select from available string code conversions.
View MIME Type:	Select a MIME type to view or save the contents of the user data buffer as and click **View**. TransactionVision displays the contents of the user data buffer as a file of the selected type. You may save this file if you wish.

7 Using Reports

Reports provide vertically focused business reporting to specific industries, as well as custom business reports and analysis developed to suit your specific requirements.

This chapter provides instructions on using the standard reports installed with TransactionVision. For information on creating your own custom reports, see the *TransactionVision Advanced Customization Guide*.

Viewing Reports

To view a list of available reports, click **Reports**. The Available TransactionVision Reports page appears.

This page lists all available reports. For each report, it also lists any saved configurations. You can save a report configuration after running a report. Saving a configuration enables you run a report using the saved configuration settings, rather than setting configuration options each time you run the report. This feature is useful for reports that you run with the same configuration options on a regular basis, such as a daily performance report.

Report

Saved Configuration

Home	Views	Current Project	Administration	Reports	Logout	Help

» **Available TransactionVision Reports**   **Project: TRADE**

Performance Analysis & Problem Resolution

Reports

Am I meeting my Service Level response requirements?

Saved Settings	Description	Saved By	Time
SLA Week	Weekly SLA Analysis Report	admin	05/10/2008 06:40:15 PM 🗑Delete

How are my WebSphere MQ and JMS components performing?
How are my Application Server components performing?
How are my SQL statements performing?
Where are my transactions?
What transactions occurred within a specific web session?
What was my transactional throughput in the past and capacity for the future?
How did my transactions perform previously?
How is the message latency on a given queue performing?
What is the volume of my transactions?

Dashboards

How is my IT infrastructure performing?
How are my current transactions performing?
What transactions are taking place?

Compliance, Risk & IT Governance

Governance

What are my charge-back costs for the transactional infrastructure?

Risk

How is IT infrastructure performance and availability affecting my business?

Running a Report

To run a report, perform the following steps:

1   Click the link for the report. TransactionVision displays a report configuration dialog similar to the following:

> » WebSphere MQ and JMS Statistics Report - (Hide)   Project: Trade
>
> **Report Parameters**
> Reporting Time Period: [All Time Periods ▾]
> ☐ Queue Filter [*]
> ☐ Queue Manager Filter [*]
>
> [Generate Report] [Printable View] [Save Settings]

2   Select the reporting time period from the list of predefined time periods.

— To specify a custom time period, choose **Date Range** and specify the start and end dates and times. The default start and end dates are based on the dates and times of events in the project. Click the calendar icon to select a date from a calendar control.

— To include all statistics for the entire project, choose **All Time Periods**.

3   Different reports may have additional configuration settings; see the section for the specific report you are running for information about its configuration settings.

4   Click **Generate Report**. TransactionVision runs the report, then displays the results page as in the following example. The results page contains the following components:

— Report configuration dialog

— Report toolbar for updating the report with different configuration settings, generating a print preview of the report results, and saving configuration settings

— Chart or table showing report results

▶   To hide the report configuration dialog and report toolbar, click **Hide Form** in the report title. To show a hidden report configuration dialog and report toolbar, click **Show Form**.

| » WebSphere MQ and JMS Statistics Report - (Hide) | | | | | Project: Trade |

Configuration Settings

Report Results

Report Parameters

Reporting Time Period: All Time Periods

☐ Queue Filter: *

☐ Queue Manager Filter: *

[Generate Report] [Printable View] [Save Settings]
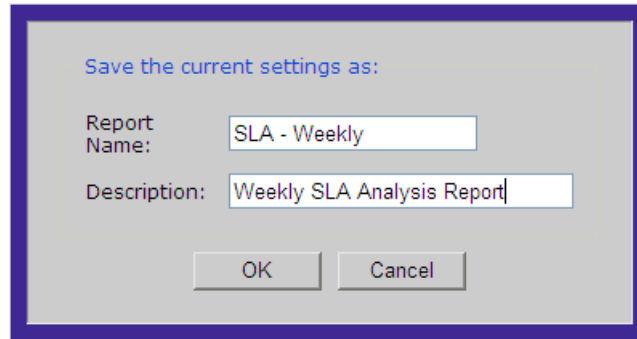
WebSphere MQ Statistics

Queue Manager	Queue	Applications Interacting	Average Latency (sec)	Puts [success/warning/error]	Gets [success/warning/error]
unknown		2	-	0 [0/0/0]	0 [0/0/0]
	TRADING	2	-	0 [0/0/0]	0 [0/0/0]
TRADING		2	23.23	283 [283/0/0]	518 [259/24/235]
	FX	1	-	0 [0/0/0]	0 [0/0/0]
	SYSTEM.BROKER.DEFAULT.STREAM	2	0.12	0 [0/0/0]	127 [16/0/111]
	SYSTEM.BROKER.ADMIN.STREAM	1	-	0 [0/0/0]	124 [0/0/124]
	FX_LOCAL	1	0.15	0 [0/0/0]	4 [1/3/0]
	EQUITY	1	0.01	0 [0/0/0]	3 [1/2/0]
	REPLY_FOR_SESSION	1	-	0 [0/0/0]	0 [0/0/0]
	BOND	1	0.09	0 [0/0/0]	4 [1/3/0]
	SYSTEM.JMS.REPORT.QUEUE	2	0	45 [45/0/0]	14 [14/0/0]
	SYSTEM.JMS.PS.STATUS.QUEUE	1	26.85	222 [222/0/0]	224 [224/0/0]
	SYSTEM.JMS.D.CC.SUBSCRIBER.QUEUE	2	0.03	16 [16/0/0]	18 [2/16/0]

Saving Configuration Settings

To save the current configuration settings after running a report, perform the following steps:

1 Click **Save Settings**. TransactionVision displays the following dialog:

> **Save the current settings as:**
>
> Report Name: SLA - Weekly
>
> Description: Weekly SLA Analysis Report
>
> OK   Cancel

2   Enter a name and description for the configuration. This information appears on the Available TransactionVision Reports page.

3   Click **OK**. TransactionVision saves the configuration settings for a particular project, so the saved settings will only be visible when that project is active. A saved report is also visible to any other users who have access to this report, so users can share the results of their reports with others.

Running a Report with Saved Configuration Settings

If you have already saved a report configuration and want to run it again with the same settings, click the link for the saved configuration on the Available TransactionVision Reports page. TransactionVision runs the report using the saved configuration settings and displays the results page.

Deleting Saved Configuration Settings

To delete saved configuration settings, click the **Delete** button to the right of the saved configuration on the Available TransactionVision Reports page. Only the user that saved a configuration may delete it.

Updating a Report

After running a report, you may wish to run it again with different configuration settings. To update a report, perform the following steps:

1   On the report results page, change configuration settings as desired.

2   Click **Generate Report**. TransactionVision runs the report with the new configuration settings and displays the results.

Printing Report Results

Use your browser's print mechanism to print report results. However, printing the report results page prints the configuration settings and report toolbar in addition to the report results. To print only the report results, perform the following steps:

1   On the report results page, click **Printable View**. TransactionVision opens a new page showing only the report results.

2   Choose the browser's **File** > **Print** menu item to print the page.

Changing Chart Types

Many TransactionVision reports use the PopChart control to display results in a chart. By default, TransactionVision uses the Macromedia Flash Player to display these charts. If the Flash Player is not installed or is older than version 6, you are automatically directed to the Macromedia web site to install the latest version.

If you prefer to use the Adobe SVG viewer instead of Flash to display charts, edit the file <TVISION_HOME>/config/ui/PopChart.properties, setting the popChartOutput property to SVG instead of Flash.

Service Level Analysis Report

The Service Level Analysis report provides transaction response time and availability service level analysis for the current project.

To run the Service Level Analysis report, perform the following steps:

1   Click the **Am I meeting my Service Level Agreement response requirements?** link on the Reports page.

2   Select the reporting time period from the list of predefined time periods. To specify a custom time period, choose **Date Range** and specify the start and end dates and times. Click the calendar icon to select a date from a calendar control. To include all statistics for the entire project, choose **All Time Periods**.

3   Check the transaction classes you wish to include in the report. To select all transaction classes, click **Select All**. To deselect all transaction classes, click **Unselect All**. For information about defining classes, see the *TransactionVision Advanced Customization Guide*.

4   By default, the report plots three elements over time for each transaction class:

    —   Average response time

    —   Maximum transaction response time

    —   Transaction volume

Select each element you wish to include in your report; deselect any element you do not with to include.

5   Check whether to show combined totals for all selected transaction classes instead of totals for each selected class.

6   Select whether to display results in a graph, a table, or both.

7   Click **Generate Report**. TransactionVision displays the results in a chart similar to the example on the following page and/or a table, depending on your report settings.

For each transaction class, vertical bars represent transaction volume, triangles represent the transaction with the maximum response time, and circles represent the average response time.

8   To view more information about a data item in the chart, move your cursor over the data item. TransactionVision displays a tool-tip that shows the legend and value of the data item.

9   For more detailed information about transactions in the report, do either of the following:

— Click a section of a vertical bar to run the Transaction Tracking report on all the transactions it represents.

— Click a triangle to show the Transaction Details view of the Transaction Tracking report for the specific transaction it represents.

For more information about the Transaction Tracking report, see Transaction Tracking Report on page 211.
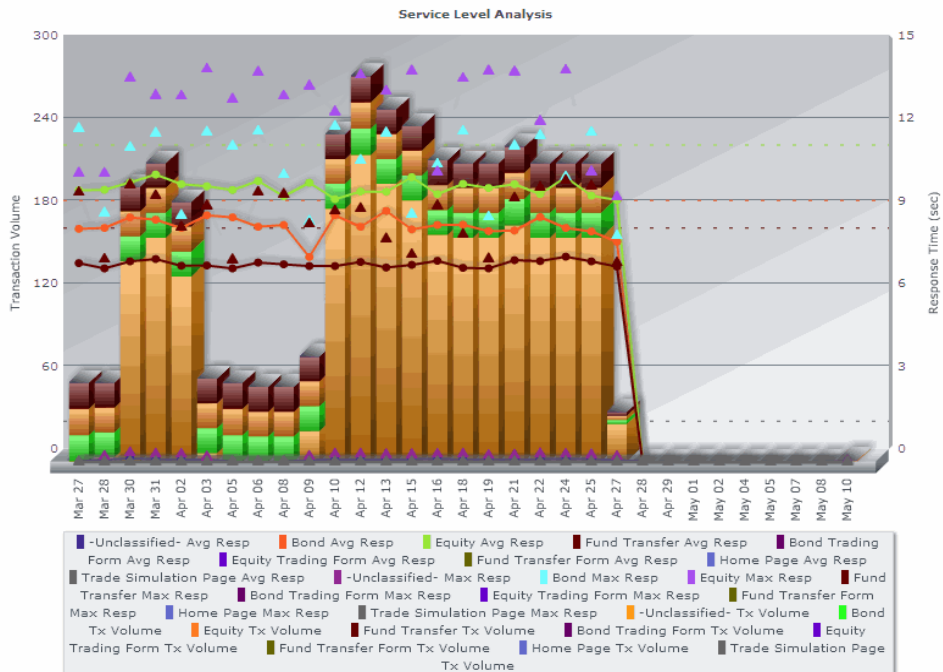
Service Level Analysis

WebSphere MQ and JMS Statistics Report

This report shows statistics on the activity of your WebSphere MQ and JMS infrastructure. For each queue manager, it reports the following activity for each queue, for both WebSphere MQ and JMS:

- Applications interacting with the queue
- Average latency in seconds
- Total number of WebSphere MQ Get and Put or JMS send/receive events
- Number of successful, warning, or failed WebSphere MQ Get and Put or JMS send/receive events

To run the WebSphere MQ and JMS Statistics report, perform the following steps:

1 Click the **How are my WebSphere MQ and JMS components performing?** link on the Reports page.

Report Parameters	
Reporting Time Period:	All Time Periods ⌄
☑ Queue Filter	TRADE*
☐ Queue Manager Filter	*

2 Select the reporting time period from the list of predefined time periods. To specify a custom time period, choose **Date Range** and specify the start and end dates and times. Click the calendar icon to select a date from a calendar control. To include all statistics for the entire project, choose **All Time Periods**.

3 If desired, specify queue and/or queue manager filters. By default, TransactionVision includes all queues and queue managers in the project in the report. To restrict the report to specified queues or queue managers, check the queue filter and or queue manager filter check box and enter the names of the queues and/or queue managers to include in the report. Separate multiple queues or queue managers with commas. You may include the * wildcard character as the prefix or suffix to an object name; for example, TRADE* to restrict the report to queue names with the prefix TRADE.

4 Click **Generate Report**. TransactionVision shows the results in a table similar to the following example:

WebSphere MQ Statistics					
Queue Manager	Queue	Applications Interacting	Average Latency (sec)	Puts [success/warning/error]	Gets [success/warning/error]
unknown		2	-	0 [0/0/0]	0 [0/0/0]
	TRADING	2	-	0 [0/0/0]	0 [0/0/0]
TRADING		2	23.23	354 [354/0/0]	2,432 [259/24/2,149]
	FX	1	-	0 [0/0/0]	0 [0/0/0]
	SYSTEM.BROKER.DEFAULT.STREAM	2	0.12	0 [0/0/0]	1,053 [16/0/1,037]
	SYSTEM.BROKER.ADMIN.STREAM	1	-	0 [0/0/0]	1,112 [0/0/1,112]
	FX_LOCAL	1	0.15	0 [0/0/0]	4 [1/3/0]
	EQUITY	1	0.01	0 [0/0/0]	3 [1/2/0]
	REPLY_FOR_SESSION	1	-	0 [0/0/0]	0 [0/0/0]
	BOND	1	0.09	0 [0/0/0]	4 [1/3/0]
	SYSTEM.JMS.REPORT.QUEUE	2	0	116 [116/0/0]	14 [14/0/0]
	SYSTEM.JMS.PS.STATUS.QUEUE	1	26.85	222 [222/0/0]	224 [224/0/0]
	SYSTEM.JMS.D.CC.SUBSCRIBER.QUEUE	2	0.03	16 [16/0/0]	18 [2/16/0]

JMS Statistics					
Queue Manager	Queue	Applications Interacting	Average Latency (sec)	Puts [success/warning/error]	Gets [success/warning/error]
TRADING		8	0.06	32 [32/0]	32 [32/0]
	FX	1	0.12	3 [3/0]	0 [0/0]
	SYSTEM.BROKER.DEFAULT.STREAM	4	0.08	16 [16/0]	0 [0/0]
	FX_LOCAL	1	0.09	0 [0/0]	3 [3/0]
	EQUITY	2	0.01	2 [2/0]	2 [2/0]
	REPLY_FOR_SESSION	2	0.02	8 [8/0]	8 [8/0]
	BOND	2	0.04	3 [3/0]	3 [3/0]
	SYSTEM.JMS.D.CC.SUBSCRIBER.QUEUE	4	0.04	0 [0/0]	16 [16/0]

5   Click the event count link for a queue to view a chart and table showing additional information about the WebSphere MQ Put or Get events for that queue. TransactionVision displays the results in a new window.
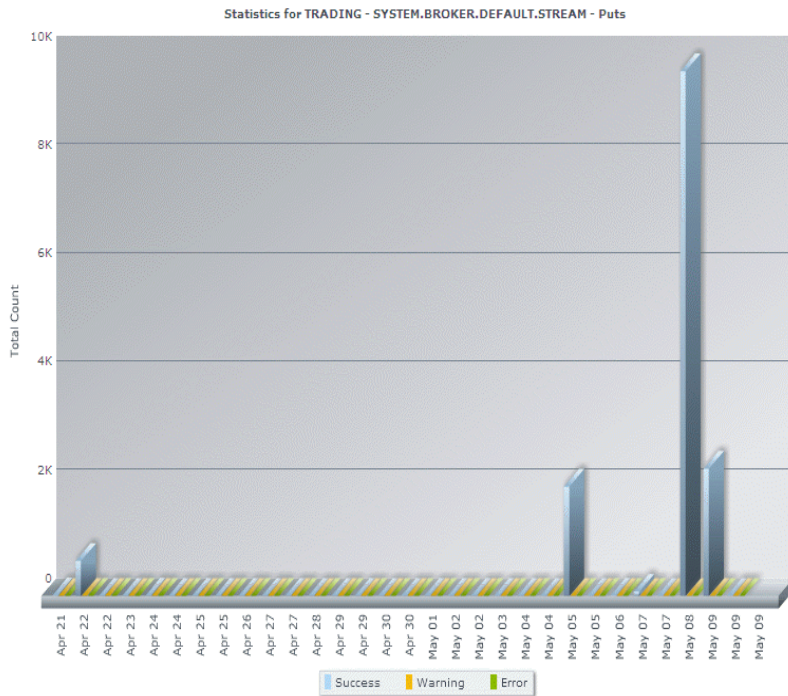
Statistics for TRADING - SYSTEM.BROKER.DEFAULT.STREAM - Puts

6   Move your cursor over the Total Count bar in the chart to display a tooltip showing its value.

7   Click the **Total** link in the table or the Total Count bar in the chart to view transaction details for all the transactions for a given day. TransactionVision displays the results in a new window.

8 To view more information, do any of the following:

— Click an **API Code** link to view the Event Detail view for that API.

— Click **Show in Transaction View** to display a transaction in the Transaction Analysis view.

— Click **Show in Event Analysis View** to display the transaction events in the Event Analysis view.

— Click **Show in Topology View** to view the flow of events within the transaction in the Component Topology Analysis view.

Application Server Statistics Report

This report shows statistics on the activity of your EJBs and Servlets. It breaks down activity by EJB and EJB method, and by Servlet, showing the following for each:

- Successful call count

- Error call count

- Average latency

To run the Application Server Performance report, perform the following steps:

1 Click the **How are my Application Server components performing?** link on the Reports page.

Report Parameters	
Reporting Time Period:	All Time Periods ⌄
☐ EJB Filter	*
☐ Servlet Filter	*

2 Select the reporting time period from the list of predefined time periods. To specify a custom time period, choose **Date Range** and specify the start and end dates and times. Click the calendar icon to select a date from a calendar control. To include all statistics for the entire project, choose **All Time Periods**.

3 If desired, specify EJB and/or servlet filters. By default, TransactionVision includes all EJB and servlet names in the project in the report. To restrict the report to specified EJBs or servlets, check the EJB filter and or servlet filter check box and enter the EJB and/or servlet names to include in the report. Separate multiple entries with commas. You may include the * wildcard character as the prefix or suffix to a name; for example, TRADE* to restrict the report to names with the prefix TRADE.

4 Click **Generate Report**. TransactionVision displays results similar to the following example:

EJB Statistics			
EJB	**EJB Method**	**Call count [sucess/error]**	**Average Latency (sec)**
BondTradeProcessor			
	onMessage	1796/0	0.45
EquityTradeProcessor			
	onMessage	1778/0	0.44
FundTransferProcessor			
	onMessage	919/0	0.46
Order			
	ejbCreate	2704/0	0.08
	ejbLoad	2704/0	0.02
	ejbPostCreate	2704/0	0.07
	ejbStore	5408/0	0
	getData	5408/0	0
	getId	10815/0	0
	getType	5408/0	0
	process	2704/0	0
	setData	2704/0	0.01
	setId	2704/0	0.01
	setType	2704/0	0.01
QualifyTrade			
		42/0	0
	EquityTradeProcessor	21/0	0
	Order	42/0	0.01
	getData	42/0	0
	qualify	2788/186	0
	queue://TRADING/REPLY_FOR_SESSION	42/0	0
	queue://TRADING/REQUEST	21/0	0.04
	setData	21/0	0.04
	setType	21/0	0.11
	waynecpc	21/0	0.11
TradeSession			
	ejbCreate	2890/0	0
	processTrade	2889/0	0.43

Servlet Statistics		
Servlet	**Call count [sucess/error]**	**Average Latency (sec)**
TradeSession	5355/0	11.88

5   Click the Success Call count link to view a chart and table showing additional information about an EJB method or servlet. TransactionVision displays the results in a separate window.

» Overview of: EJB:Order, method 'ejbCreate'

Statistics for EJB: Order, method: ejbCreate
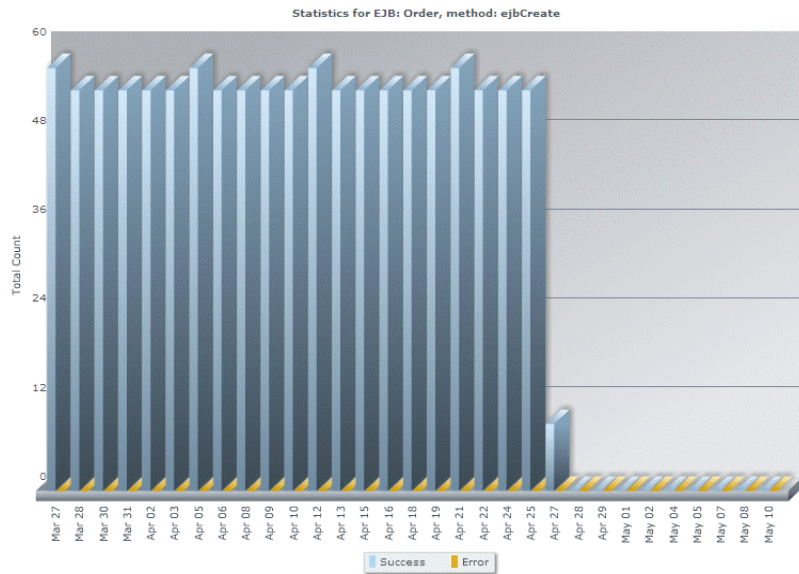
From	To	Success	Error
Mar 27	Mar 28	57	0
Mar 28	Mar 30	54	0

6 Move your cursor over the Total Count bar in the chart to display a tooltip showing its value.

SQL Statistics Report

The SQL Statistics report shows statistics on the JDBC activity in your applications.

To run the SQL Statistics report, perform the following steps:

1 Click **How are my SQL statements performing?** on the Reports page.

Report Parameters	
Reporting Time Period:	All Time Periods ▾
☐ Program Filter	*
☐ Table Filter	*
Include Statement Types	☑ Batch ☑ Call ☑ Delete ☑ Insert ☑ Merge ☑ Select ☑ Update [Select All] [Unselect All]
Sort by:	Total Time ▾
Show results in:	Descending order ▾
Results per page:	20

2   Select the reporting time period from the list of predefined time periods.

To specify a custom time period, choose Date Range and specify the start and end dates and times. Click the calendar icon to select a date from a calendar control. To include all statistics for the entire project, choose All Time Periods.

3   If desired, specify program and/or table filters.

By default, TransactionVision includes all programs and tables used in the project in the report. To restrict the report to specified programs or tables, check the program filter and or table manager filter check box and enter the names of the program and/or tables to include in the report.

Separate multiple programs or tables with commas. You may include the * wildcard character as the prefix or suffix to an object name

4   Select the statement type to limit reports on only those statements matching the type you select.

5   If desired, choose a column on which to sort the results.

JDBC Statistics (18 statements, showing 1-18)												
Program	SQL statement	Database	Total Time (ms)	Execute Time (ms)			Cursor Time (ms)			Cursor iterations	Get count	Calls [errors]
				Min	Avg	Max	Min	Avg	Max			
JDBCTimingTest	SELECT statement using TESTTIMING	TVISION	311	0	3	30	15	28.1	47	1010	17000	10 [0]
JDBCStmt	SELECT statement using USER_PREF	TESTDB	118	40	40	40	78	78	78	2	3	1 [0]
JDBCStatementTest	INSERT statement using TESTTABLE	TVISION	80	0	6.15	70	-	-	-	-	-	5 [8]
JDBCStatementTest	SELECT statement using TESTTABLE	TVISION	40	40	40	40	0	0	0	0	0	1 [0]
JDBCStmt	SELECT statement using USER_PREFS	TESTDB	10	10	10	10	-	-	-	-	-	0 [1]
JDBCResultTest	SELECT statement using TESTRS	TVISION	10	10	10	10	-	-	-	-	-	1 [0]
	INSERT											

6   Click **Generate Report**. TransactionVision shows the results in a table similar to the above example.

Clicking on the SQL statement field displays the full SQL used, instead of the abbreviated SQL statement type and a list of tables it accesses. For each SQL statement, the report shows the following:

- Total time - This is the total time spent executing the SQL, and interacting with the cursor (if applicable)

- Min/Avg/Max Execute time - Min/Avg/Max timing information on how long it took to execute the SQL statement

- Min/Avg/Max cursor time - Min/Avg/Max timing info on how much time was spent interacting with the JDBC result set (iterating over the cursor, retrieving database values)

- Cursor Iteration - The number of result rows that were retrieved using this statement

- Get Count - The number of data elements that were retrieved from the result row(s) from this statement

- Calls[errors] Number of times statement was called, in brackets is the number of calls that had errors

Transaction Tracking Report

The Transaction Tracking report enables you to list transactions and drill down into individual transactions to analyze their behavior. A number of filtering criteria enable you to limit the displayed results to only those transactions with a certain completion state, result state, or those transactions that have exceeded the service level. Individual transactions can be further examined to display additional details.

To run the Transaction Tracking report, perform the following steps:

1 Click the **Where are my transactions** link on the Reports page.

2 Select the reporting time period from the list of predefined time periods. To specify a custom time period, choose **Date Range** and specify the start and end dates and times. Click the calendar icon to select a date from a calendar control. To include all statistics for the entire project, choose **All Time Periods**.

3   Select the transaction states you wish to include in the report. Only transactions with the selected state will be included in the report results.

4   Select the transaction result codes you wish to include in the report. Only transactions with the selected result codes will be included in the report results.

5   Check the transaction classes you wish to include in the report. To select all transaction classes, click **Select All**. To deselect all transaction classes, click **Unselect All**. For information about defining classes, see the *TransactionVision Advanced Customization Guide*.

6   Specify whether to show only transactions that exceed service level agreements.

7   Select a custom attribute to sort results by, if desired. Custom attribute columns are available if you have added rules to the transaction definition file $TVISION_HOME/config/services/ TransactionDefinition.xml to configure the Analyzer to extract and store the other information about transactions (such as session ID, customer ID, etc.). For more information on adding rules to the transaction definition file, see the *TransactionVision Advanced Customization Guide*.

8   Specify whether to show results in descending or ascending order by transaction start time. The default order is ascending.

9   Specify whether to search on a custom transaction attribute and enter the value of the attribute. Custom attribute columns are available if you have added rules to the transaction definition file $TVISION_HOME/config/ services/TransactionDefinition.xml. This field allows you to search on any defined custom transaction attribute field.

10 Specify the number of transactions to show per page of results. If the number of transactions that match the setting exceeds this number, TransactionVision generates multiple pages of results.

11 Click **Generate Report**. TransactionVision displays results similar to the following example:

Transaction Tracking Report (6249 transactions, showing 1-20)						
Tx Class	**Start Time**	**Response Time**	**Completion State**	**Result State**	**SLA State**	**Label**
-Unclassified-	06/07/2005 10:47:46.851	0.02	Unknown	Unknown	None	
-Unclassified-	06/07/2005 10:47:46.893	0.02	Unknown	Unknown	None	
-Unclassified-	06/07/2005 10:47:46.923	0.02	Unknown	Unknown	None	
-Unclassified-	06/07/2005 10:47:47.019	0.04	Unknown	Unknown	None	
-Unclassified-	06/07/2005 10:47:47.156	0.04	Unknown	Unknown	None	
-Unclassified-	06/07/2005 10:47:47.283	0.04	Unknown	Unknown	None	
-Unclassified-	06/07/2005 10:47:47.397	0.01	Unknown	Unknown	None	
-Unclassified-	06/07/2005 10:47:47.427	0.03	Unknown	Unknown	None	
-Unclassified-	06/07/2005 10:47:48.756	0.04	Unknown	Unknown	None	
-Unclassified-	06/07/2005 10:47:48.804	0.01	Unknown	Unknown	None	
-Unclassified-	06/07/2005 10:47:48.913	0.04	Unknown	Unknown	None	
-Unclassified-	06/07/2005 10:47:50.832	0.05	Unknown	Unknown	None	
-Unclassified-	06/07/2005 10:47:50.963	0.14	Unknown	Unknown	None	
-Unclassified-	06/07/2005 10:47:51.164	0.11	Unknown	Unknown	None	
-Unclassified-	06/07/2005 10:47:51.358	0.08	Unknown	Unknown	None	
-Unclassified-	06/07/2005 10:47:51.504	0.06	Unknown	Unknown	None	
-Unclassified-	06/07/2005 10:47:51.633	0.05	Unknown	Unknown	None	
-Unclassified-	06/07/2005 10:47:51.765	0.05	Unknown	Unknown	None	
-Unclassified-	06/07/2005 10:47:51.889	0.05	Unknown	Unknown	None	
-Unclassified-	06/07/2005 10:47:52.011	0.05	Unknown	Unknown	None	

First Page Prev 10 Prev Go to page: 1 ⌄ Next Next 10 Last Page

By default, this report shows the following information for each transaction that meets the report requirements:

— Transaction class. By default, transactions are unclassified. See the *TransactionVision Advanced Customization Guide* for information about transaction classification.

— Start time

— Response time

— Completion state

— Result state

— Label. By default, transaction labels are null. See the *TransactionVision Advanced Customization Guide* for information about modifying transaction attributes.

Furthermore, if you have added rules to the transaction definition file $TVISION_HOME/config/services/ TransactionDefinition.xml to configure the Analyzer to extract and store the other information about transactions (such as session ID, customer ID, etc.), the report provides columns for

that information as well. In this example, SLAState is a custom column. For more information on adding rules to the transaction definition file, see the *TransactionVision Advanced Customization Guide*.

12 To view details about a particular transaction, click the transaction class link. TransactionVision displays the Transaction Details page in a new browser window, so you may view details for more than one transaction at a time. The Transaction Details page provides the following information for the selected transaction:

» **Detail for Business Transaction8:**   **Project: Trade**

Summary

Class:	Fund Transfer Form	Start Time:	04/04/2008 08:13:05.027
Response Time:	0.156 sec	SLA:	1.000 sec
State:	Completed	Result:	Success
OrderID:	-	Account:	-
TradeType:	-	TradeAction:	-
Status:	Executed	Reason:	-
BondIssue:	-	BondMaturity:	-
EquitySymbol:	-	Value:	-
Customer:	-	SessionId:	-
Exception:	-	SLAState:	None

Transaction Flow

ID	Application	Start Time	Elapsed Time (sec)	Latency (sec)
1	**TradeServlet on amkilab02 - Servlet**	08:13:05.027	0.016	
2	|- TradeServlet on amkilab02 - Servlet	+0.016	0.047	
→	– /main.jsp on amkilab02 - Servlet (ID = 3)	+0.047	~0.000	
3	**/main.jsp on amkilab02 - Servlet**	08:13:05.090	~0.000	
4	|- /main.jsp on amkilab02 - Servlet	+0.000	0.077	
→	– /fx.jsp on amkilab02 - Servlet (ID = 5)	+0.062	~0.000	
5	**/fx.jsp on amkilab02 - Servlet**	08:13:05.152	0.016	
6	|- /fx.jsp on amkilab02 - Servlet	+0.016	~0.000	

Legend: ← → Control Flow   ←▯← →▯→ Message Flow   →▯ ←▯ Queue Access   →0 ←0 Resource Access   ⇥ Create Thread   ✕ Error △ Warning

[Show in Event Analysis View]   [Show in Transaction View]   [Show in Topology View]

— The Summary shows the class, response time, status, start time, result, and the value for any custom attributes (SLAState and SLA in this example).

— The Transaction Flow shows the local transaction ID, application name, start time, and processing time for each local transaction within the selected business transaction. An icon indicates whether the local transaction starts a message flow, accesses a queue, accesses a resource, or creates a thread.

If a message flow starts from the application in a local transaction, a sub-row appears. The direction of the arrows in the message flow icon in the sub-row indicates whether a message flow starts or ends from the application. Arrows pointing right indicate a message flow start; arrows pointing left indicate a message flow end. The message flow icon is followed by the name of the application where the message flow starts or ends. Both the queue icon and the application name link to the local transaction where the message flow ends. Click this link to navigate to the local transaction where the message flow ends.

A sub-row without an icon indicates that a control flow starts from the application. The sub-row specifies the name of the application where the control flow ends. Click the application name in the sub-row to navigate to the local transaction where the control flow ends.

Note that processing time for each program does not include the CICS TASK_START and TASK_END events, because these events do not contain a program name. Therefore, the processing time in this report differs slightly from the execution times in the Transaction Analysis view.

13 To display the Event Details view for an event message in the Transaction Details page, click the message link in the Transaction Flow table or the latency link in the Message Flow table. The Event Details view opens in a separate browser window. For a message flow, separate panes show a side-by-side comparison of the departure and arrival user data buffer. For a control flow, only the event details for the event that corresponds to the destination event in the control flow are shown. For more information about the Event Details view, see Chapter 6, Using the Event Detail View.

14 To display the current business transaction in the Transaction Analysis view, click **Show in Transaction View** on the Transaction Details page. The Transaction Analysis View opens in a separate browser window. For more information about the Transaction Analysis view, see Chapter 4, Using the Transaction Analysis View.

Note that the current query is not applied to the Transaction Analysis view. All business transactions are listed in the left pane, with the selected transaction highlighted.

15 To display the current business transaction in the Event Analysis view, click **Show in Event Analysis View** on the Transaction Details page. The Event Analysis View opens in a separate browser window. For more information about the Event Analysis view, see Chapter 5, Using the Event Analysis View.

16 To display the current business transaction in the Component Topology Analysis view, click **Show in Topology View** on the Transaction Details page. The Component Topology Analysis View opens in a separate browser window. For more information about the Transaction Analysis view, see Chapter 3, Using the Component Topology Analysis View.

Web Session Report

This report provides access to all transactions by session ID within a specified time range. You may optionally specify a customer ID to filter the sessions in the report output.

Enabling Session Tracking

In order to use this report your Analyzer must be configured to extract and store session ID information. This information is not stored by default. To filter using the customer ID, the customer field must also be populated for each business transaction.

To enable analysis and classification of session ID with a servlet's transaction, perform the following steps:

1 Modify the transaction.xdm file to include the fields to store the transaction id.

2 The web session report uses the /Transaction/sessionid and /transaction/customer fields to display its report.

To add the customer and session xdm mapping, add the following:

```
<Column name="customer" type="VARCHAR" size="32"
description="Customer">
  <Path>/Transaction/Customer</Path>
</Column>
```

```
<Column name="sessionid" type="VARCHAR" size="32"
description="SessionId">
  <Path>/Transaction/SessionId</Path>
</Column>
```

3   Enable the Classification bean in the Beans.xml file.

4   Add the following classification definition to TransactionDefinition.xml.
    Add your schema name to the dbschema attribute.

```
<Class name="web" dbschema="YOUR_SCHEMA_NAME_HERE">
  <Classify id="1">
    <Match xpath="/Event/Technology/Servlet/HTTP/Method"
operator="EQUAL" value="HTTP_GET"/>

  </Classify>
  <Classify id="2">
    <Match xpath="/Event/Technology/Servlet/HTTP/Method"
operator="EQUAL" value="HTTP_POST"/>

  </Classify>


  <Attribute name="SessionId">
    <Path>/Transaction/SessionId</Path>
    <ValueRule name="SetSessionId">
      <Match xpath="/Event/StdHeader/TechName"
operator="EQUAL" value="Servlet"/>
      <Value type="XPath">/Event/Technology/ Servlet/
Session/ID</Value>
    </ValueRule>
  </Attribute>

</Class>
```

5   Add a rule for storing the customer name to TransactionDefinition.xml.
    This rule varies, depending on your system and where this information is
    stored in message data that passes through TransactionVision.

6   Restart your Analyzer, and then create a new project to pick up these
    changes.

7   Insert the transaction class definition into your new schema by running
    the following SQL:

```
INSERT INTO YOUR_SCHEMA_NAME_HERE.TRANSACTION_CLASS
(CLASS_ID, CLASS_NAME, SLA) VALUES(1,'web',4000);
```

Note that if there are already custom classes in the system, the class_id should have a different value.

8   Now start collecting events. The transactions should be classified into the web transaction class-this can be verified by going to the Where are my transactions? report and seeing web transactions listed. To verify that the session id is stored in the transaction table, run the web session report.

Running the Web Session Report

To run the Web Session report, perform the following steps:

1   Click the **What transactions occurred within a specific web session?** link on the Reports page.

2   Select the reporting time period from the list of predefined time periods. To specify a custom time period, choose **Date Range** and specify the start and end dates and times. Click the calendar icon to select a date from a calendar control. To include all statistics for the entire project, choose **All Time Periods**.

3   Optionally specify the customer name to include in the report. If you do not specify a customer name, the report shows web session information for all customers.

4   Specify the number of results to display per page.

5   Click **Generate Report**. TransactionVision displays results similar to the following example:

Web Session Report				
(103 sessions, showing 1-10)				
Session Start	**Session End**	**Customer**	**Transaction Count**	**Value (Dollars)**
02/02/2005 16:25:11.935	02/02/2005 16:25:18.623	NE-210001	1	$1,006.90
02/02/2005 17:45:47.805	02/02/2005 17:45:54.430	NE-210001	1	$128.75
02/02/2005 17:48:37.133	02/02/2005 17:48:43.446	PC-460004	1	$38,437.50
02/02/2005 17:49:15.456	02/02/2005 18:10:16.020	MW-330001, MW-330003, MW-830004, MW-890005, NE-210001, NE-210002, NE-210003, NE-410006, NE-510007, NE-910010, PC-330007, PC-370003, PC-380006, PC-550005, PC-650030, PC-740009, SE-340002, SE-450001, SE-880004, SE-920005	35	$1,879,363.25
02/02/2005 18:10:48.020	02/02/2005 18:13:19.083	MW-830004, MW-890005, NE-210001, NE-410006, PC-740009	5	$264,273.00
02/02/2005 18:13:51.098	02/02/2005 18:18:19.956	MW-330003, NE-320004, NE-510007, PC-330007, PC-650030, SE-450001, SE-880004	8	$371,771.75
02/02/2005 18:18:51.956	02/02/2005 18:18:56.471	SE-920005	1	$40,000.00
02/02/2005 18:19:28.473	02/02/2005 18:20:49.067	MW-330001, NE-410006, PC-380006	3	$176,512.50
02/02/2005 18:21:21.067	02/02/2005 18:23:15.801	NE-320004, PC-830008, SE-340002, SE-450001	4	$254,975.00
02/02/2005 18:23:47.801	02/02/2005 18:26:58.051	MW-280002, MW-830004, MW-890005, NE-320005, NE-410006, SE-880004	6	$383,559.50

Go to page: 1 ⌄   Next Next 10 Last Page

> For each session, this report shows the session start and end time, the customer, the number of transactions in the session, and the dollar value of the session.

6   For information about the transactions that occurred within a specific session, click the **Session Start** link. TransactionVision runs the Transaction Tracking report on the transactions within that session.

Capacity Planning Report

The primary purpose of the Capacity Planning report is to make a projection of future transaction response times based on current trends. This report displays a graph of average response time and transaction volume for each selected transaction class for the specified time range. It then performs a linear regression analysis to project forward the current transaction response times a specified number of periods. Looking at the resulting graph for the intersection of the projected response time to the service level for that transaction gives you an estimate of when a particular transaction, using the resources it currently has available, might start to exceed its service level.

To run the Capacity Planning report, perform the following steps:

1   Click the **What was my transactional throughput in the past and capacity for the future?** link on the Reports page.

2　Select the reporting time period from the list of predefined time periods. To specify a custom time period, choose **Date Range** and specify the start and end dates and times. Click the calendar icon to select a date from a calendar control. To include all statistics for the entire project, choose **All Time Periods**.

3　Specify the number of periods into the future to project. You may project one, two, or three periods of the same type as the reporting time period.

4　Specify the polynomial degree of analysis to perform when making projections.

5　Select the transaction classes to include in the report. To select all transaction classes, click **Select All**. To deselect all transaction classes, click **Unselect All**. For information about defining classes, see the *TransactionVision Advanced Customization Guide*.

6　Check whether to show combined totals for all selected transaction classes instead of totals for each selected class.

7　Select whether to display results in a graph, a table, or both.

8　Click **Generate Report**. TransactionVision displays results in a chart similar to the following example and/or a table.

For each transaction class, this chart shows the following:

— Vertical bars represent transaction volume.

— Solid lines represent actual and projected average response times.

Capacity Planning Analysis
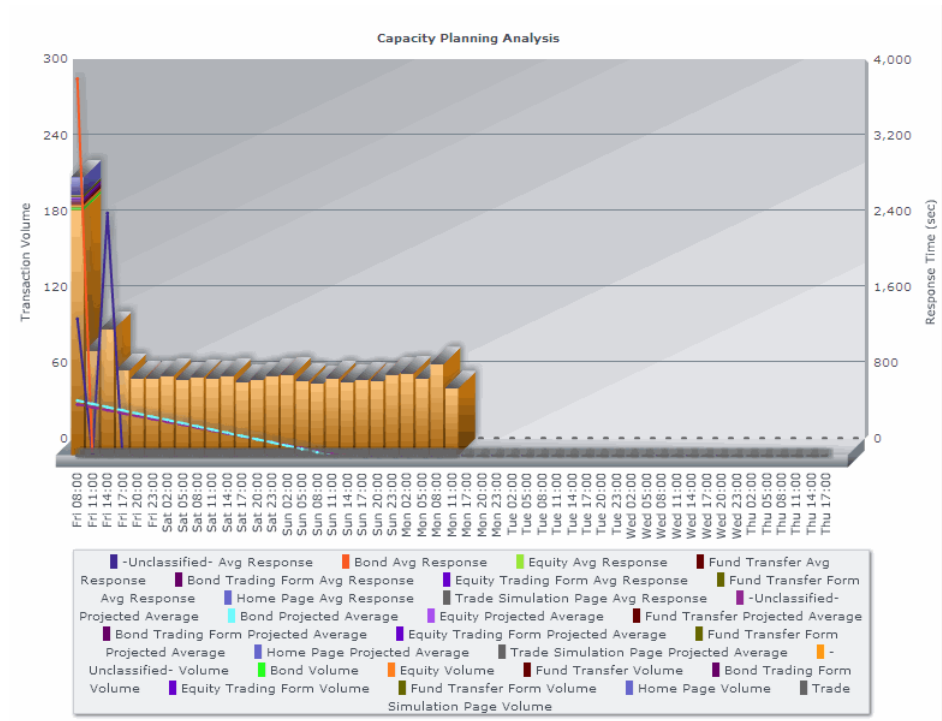
9   To view more information about a data item in the chart, move your cursor over the data item. TransactionVision displays a tool-tip that shows the value of the data item.

Transaction Performance Report
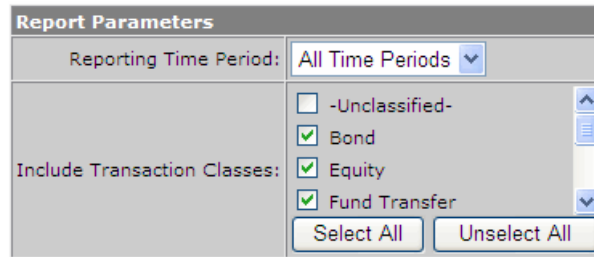
This report displays a gauge showing the average transaction response time for each selected transaction class. Additionally, it provides a quality ratio measurement that displays the percentage of transactions that have succeeded.

You may run the Transaction Performance report either for a specific time period in the past, or in real-time.

Transaction Performance for a Specific Time Period

To run the Transaction Performance report for a specific time period, perform the following steps:

1   Click the **How did my transactions perform previously?** link on the Reports page.

2   Select the reporting time period from the list of predefined time periods. To specify a custom time period, choose **Date Range** and specify the start and end dates and times. Click the calendar icon to select a date from a calendar control. To include all statistics for the entire project, choose **All Time Periods**.

3   Select the transaction classes to include in the report. To select all transaction classes, click **Select All**. To deselect all transaction classes, click **Unselect All**. For information about defining classes, see the *TransactionVision Advanced Customization Guide*.

4   Click **Generate Report**. TransactionVision displays results in a gauge for each selected transaction class, as in the following example:

Bond	Equity	Fund Transfer
Quality Ratio	**Quality Ratio**	**Quality Ratio**
0%	100%	50%
Average Response Time (s)	**Average Response Time (s)**	**Average Response Time (s)**
3,973.2	0.7	2.4
Service Level Target: 1s	**Service Level Target: 1s**	**Service Level Target: 1s**

5   Click the transaction class name on a gauge to run the Transaction Tracking report for that transaction class.

6   Click the quality ratio gauge to run the Transaction Tracking report on transactions that have exceeded required service levels.

Transaction Performance in Real Time

To run the Transaction Performance report in real time, perform the following steps:

1   Click the **How are my transactions performing?** link on the Reports page.

Report Parameters

Include Transaction Classes:	☐ -Unclassified- ☑ Bond ☑ Equity ☑ Fund Transfer
	Select All Unselect All
Dashboard will show data from the past	60 minutes
Refresh Dashboard interval (in minutes):	5

2   Select the transaction classes to include in the report. To select all transaction classes, click **Select All**. To deselect all transaction classes, click **Unselect All**. For information about defining classes, see the *TransactionVision Advanced Customization Guide*.

3   Specify the number of minutes you wish to show performance results for. The default value is 60 minutes.

4   Specify the interval (in minutes) that you with to refresh the results. TransactionVision will continue to update the report results at this interval as long as this report page is displayed in the TransactionVision user interface.

5   Click **Generate Report**. TransactionVision displays results in a gauge for each selected transaction class, as in the following example. The time period for the results is displayed below each gauge.
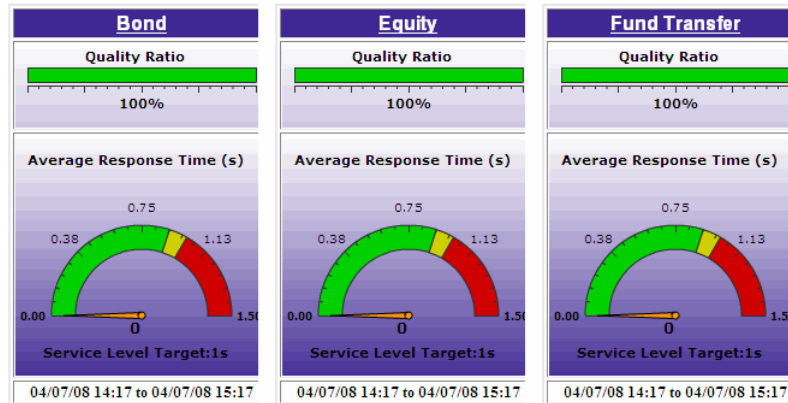
6   Click the transaction class name on a gauge to run the Transaction Tracking report for that transaction class.

7   Click the quality ratio gauge to run the Transaction Tracking report on transactions that have exceeded required service levels.

Message Latency Analysis Report

This report displays a chart showing the average and maximum latency on a selected message queue.

To run the Message Latency Analysis report, perform the following steps:

1   Click the **How is the message latency on a given queue performing?** link on the Reports page.

2   Select the reporting time period from the list of predefined time periods. To specify a custom time period, choose **Date Range** and specify the start and end dates and times. Click the calendar icon to select a date from a calendar control. To include all statistics for the entire project, choose **All Time Periods**.

3   Select the queue for which you want to view latency information: WebSphere MQ or JMS. Use the drop-down list to choose from all queues in the project.

4   Specify whether to show results in a graph, a table, or both.

5   Specify whether to report the average latency, maximum latency, or both.

6   Click **Generate Report**. TransactionVision displays results in a chart and/or table, similar to the example on the following page.

Message Latency Analysis - TRADING:BOND
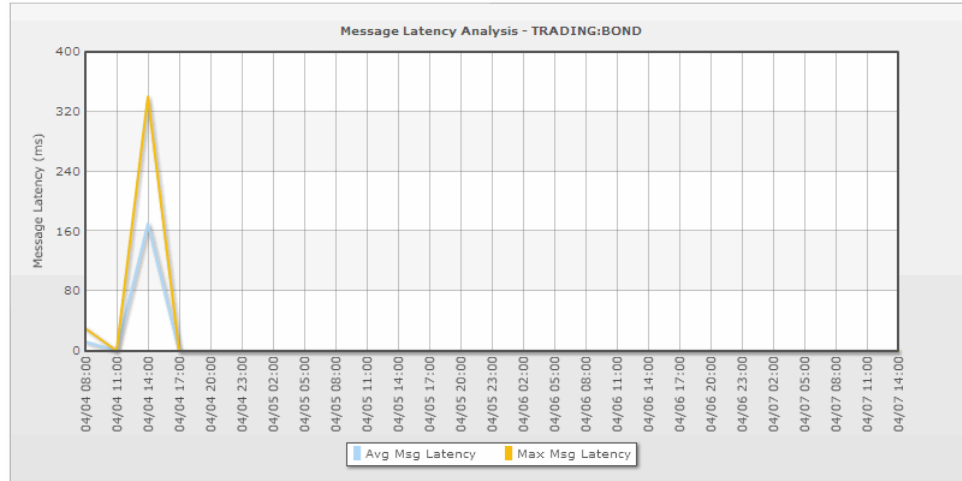
7   To view more information about a data item in a chart, move your cursor over the data item. TransactionVision displays a tool-tip that shows the value of the data item.

Transaction Volume Analysis Report

This report displays a chart showing the volume of successful, failed, or late transactions for a given transaction class.

To run the Transaction Volume Analysis report, perform the following steps:

1   Click the **What is the volume of my transactions?** link on the Reports page.

Report Parameters	
Reporting Time Period:	All Time Periods ▼
Include Transaction Classes:	☑ -Unclassified- ☑ Bond ☑ Equity ☑ Fund Transfer Select All Unselect All
Series Selection:	☑ Show successful transactions ☑ Show late transactions ☑ Show failed transactions ☑ Show total transactions
Combine Transaction Class Totals	☐
Output results as	☑ Graph ☐ Table

2 Select the reporting time period from the list of predefined time periods. To specify a custom time period, choose **Date Range** and specify the start and end dates and times. Click the calendar icon to select a date from a calendar control. To include all statistics for the entire project, choose **All Time Periods**.

3 Select the transaction classes to include in the report. To select all transaction classes, click **Select All**. To deselect all transaction classes, click **Unselect All**. For information about defining classes, see the *TransactionVision Advanced Customization Guide*.

4 Check each series you wish to include in your report.

5 Check **Combine Transaction Class Totals** to display results for all selected transaction classes in a single chart. Otherwise, TransactionVision displays a separate chart for each selected transaction class.

6 Specify whether to show results in a graph, a table, or both.

7 Click **Generate Report**. TransactionVision displays results in a chart and/or table, similar to the following example (in this case, the report displays combined transaction class totals).
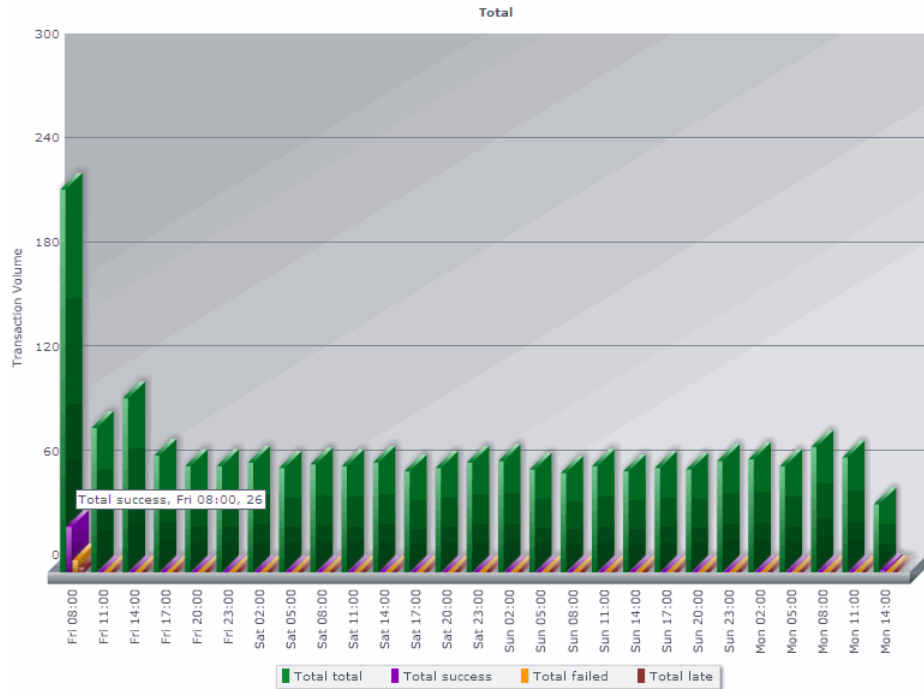
Total

8   To view more information about a data item in a chart, move your cursor over the data item. TransactionVision displays a tool-tip that shows the value of the data item.

9   To run the Transaction Tracking report on a series for a given date, click the bar representing that series and date. TransactionVision displays the results in a separate window.

Dashboard Reports

Performance Dashboard Report

This report provides an overview of the performance of all activities for the following categories:

- Transactions

- Application Servers

- WebSphere MQ

- JMS

- JDBC

For each category, it provides summary information and applicable performance statistics, including a graph that plots the activity/volume over the specified time interval.

To run the Performance Dashboard report, perform the following steps:

1   Click the **How is my IT infrastructure performing?** link on the Reports page.

2   Select the reporting time period from the list of predefined time periods. To specify a custom time period, choose **Date Range** and specify the start and end dates and times. Click the calendar icon to select a date from a calendar control. To include all statistics for the entire project, choose **All Time Periods**.

3   Click **Generate Report**. TransactionVision displays results in text and chart format, similar to the example on the following page.

4   To view more information about a data item in a chart, move your cursor over the data item. TransactionVision displays a tool-tip that shows the value of the data item.

Transaction Analysis

Total Transactions:	1,868
Average transactions per day:	467
Average transactions per week:	693
Highest volume time of day:	10:00 - 11:00
Highest volume day of week:	Friday
Highest volume day of month:	04/04/2008
Average transaction response time:	299.65 sec
Maximum transaction response time:	275,220.91 sec
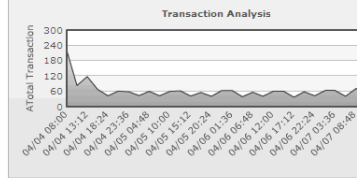
Application Server Analysis

Total Servlet hits:	164
Total Servlet data size (MB):	0.64
Total EJB calls:	131
Total errors:	0
Busiest Servlet component:	/main.jsp
Slowest Servlet component:	TradeServlet
Max Servlet response time:	4.2 sec
Average Servlet response time:	0.14 sec
Busiest EJB Method:	Order/getId
Slowest EJB Method:	TradeSession/processTrade
Max EJB Response time:	3.65 sec
Average EJB Response time:	0.08 sec
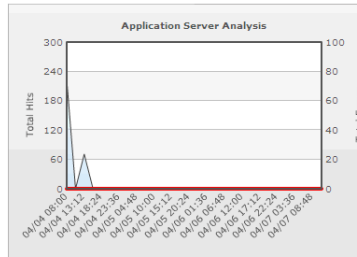
WebSphere MQ Analysis

Total messages sent:	351
Total messages received:	259
Total megabytes sent:	0.03
Total megabytes received:	0.03
Total errors:	2,246
Highest traffic queue:	BOND
Highest traffic queue manager:	TRADING
Highest traffic application:	amqrmppa
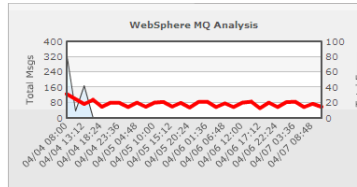
JMS Analysis

Total messages sent:	32
Total messages received:	32
Total megabytes sent:	0.01
Total megabytes received:	0.01
Total errors:	0
Highest Traffic queue/topic:	REPLY_FOR_SESSION
Highest traffic application:	queue:///EQUITY Listener
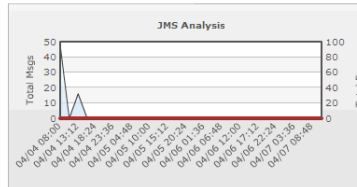
JDBC Analysis

Total SQL executed:	0
Total Errors	0
Max Insert Execution time:	
N/A	
Max Select Execution time:	
Max Cursor time	
N/A	
Max Batch Execution time:	
N/A	
Max Other Execution time:	
N/A	
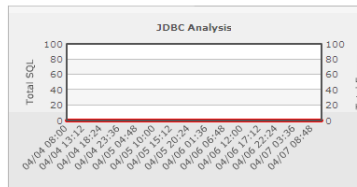
Transaction Tracking Dashboard

This report provides a list of the most recent transactions that are going into the system.

To run the Transaction Tracking Dashboard report, perform the following steps:

1 Click the **What transactions are taking place?** link on the Reports page.

2 Select the Transaction State

3 Select the Transaction Result Code

4 Select Transaction classes

5 Select Only show transactions exceeding service level

6 Specify maximum rows on the Dashboard.

7 Specify how often you want to refresh (in seconds).

8 Click **Generate Report**.

Charge-Back Report

This report calculates the charge-back value for different transactions. The rate of charge-back is determined by a cost-per-transaction valued defined in the COST_PER_TRANSACTION column of the transaction class definition. The cost-per-transaction is multiplied by the volume of transactions for the given time period.

To run the Charge-Back report, perform the following steps:

1   Click the **What are my charge-back costs for the transactional infrastructure?** link on the Reports page.

2   Select the reporting time period from the list of predefined time periods. To specify a custom time period, choose **Date Range** and specify the start and end dates and times. Click the calendar icon to select a date from a calendar control. To include all statistics for the entire project, choose **All Time Periods**.

3   Select the transaction classes to include in the report. To select all transaction classes, click **Select All**. To deselect all transaction classes, click **Unselect All**. For information about defining classes, see the *TransactionVision Advanced Customization Guide*.

4   Click **Generate Report**. TransactionVision displays results in a table similar to the following example. If you specify a predefined reporting time period, the table shows results from both the current reporting period and the previous one.

Transaction Charge-back Report					
		This Period		**Last Period**	
Transaction Class	**Cost per Transaction**	**Transaction Count**	**Cost**	**Transaction Count**	**Cost**
-Unclassified-	0.0000	2,440	$0.00	N/A	N/A
Bond	0.0880	385	$33.88	N/A	N/A
Equity	0.0200	385	$7.70	N/A	N/A
Fund Transfer	0.0100	385	$3.85	N/A	N/A
Bond Trading Form	5.0000	0	$0.00	N/A	N/A
Equity Trading Form	5.0000	0	$0.00	N/A	N/A
Fund Transfer Form	5.0000	0	$0.00	N/A	N/A
Home Page	10.0000	0	$0.00	N/A	N/A
Trade Simulation Page	10.0000	0	$0.00	N/A	N/A
			Total: $45.43		**Total: $0.00**

Business Impact Report

This report provides a view of the dollar impact of system performance on defined business groups. A business group is a group of one or more transaction classes or child business groups.

In order to use this report, you must define business groups and a mapping of transaction classes to corresponding business groups. You must also configure the Analyzer to extract and store the appropriate Value information.

To set up business groups, see the *TransactionVision Advanced Customization Guide*.

Enabling Value Tracking

In order to use this report your Analyzer must be configured to extract and store value information. This information is not stored by default.

To enable analysis and classification of session ID with a servlet's transaction, perform the following steps:

1   Modify the transaction.xdm file to include the fields to store the transaction id.

2   The Business Impact report uses the /Transaction/value and /transaction/ sessionid fields to display its report.

To add the value and session xdm mapping, add the following:

```
<Column name="value" type="DOUBLE" description="Value">
  <Path>/Transaction/Value</Path>
</Column>
<Column name="sessionid" type="VARCHAR" size="32"
description="SessionId">
  <Path>/Transaction/SessionId</Path>
</Column>
```

3 Enable the Classification bean in the Beans.xml file.

4 Add the following classification definition to TransactionDefinition.xml.
   Add your schema name to the dbschema attribute.

```
<Class name="web" dbschema="YOUR_SCHEMA_NAME_HERE">
  <Classify id="1">
    <Match xpath="/Event/Technology/Servlet/HTTP/Method"
operator="EQUAL" value="HTTP_GET"/>

  </Classify>
  <Classify id="2">
    <Match xpath="/Event/Technology/Servlet/HTTP/Method"
operator="EQUAL" value="HTTP_POST"/>

  </Classify>

  <Attribute name="StartTime" final="false">
    <Path>/Transaction/StartTime</Path>
    <ValueRule name="EventTime">
      <Value type="XPath">/Event/StdHeader/
SecondaryTime</Value>
    </ValueRule>
  </Attribute>


  <Attribute name="SessionId">
    <Path>/Transaction/SessionId</Path>
    <ValueRule name="SetSessionId">
      <Match xpath="/Event/StdHeader/TechName"
operator="EQUAL" value="Servlet"/>
      <Value type="XPath">/Event/Technology/Servlet/
Session/ID</Value>
    </ValueRule>
  </Attribute>
```

```
</Class>
```

5   Add a rule for storing the value to TransactionDefinition.xml. This rule
    varies, depending on your system and where this information is stored in
    message data that passes through TransactionVision.

6   Restart your Analyzer, and then create a new project to pick up these
    changes.

7   Insert the transaction class definition into your new schema by running
    the following SQL:
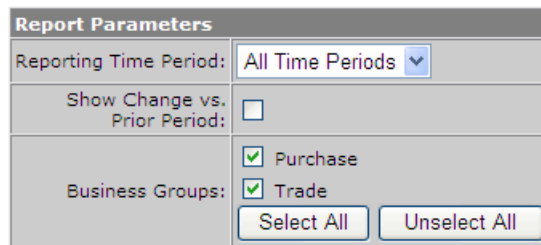
```
INSERT INTO YOUR_SCHEMA_NAME_HERE.TRANSACTION_CLASS
(CLASS_ID, CLASS_NAME, SLA) VALUES(1,'web',4);
```

8   Now start collecting events. The transactions should be classified into the
    web transaction class-this can be verified by going to the Where are my
    transactions? report and seeing web transactions listed. To verify that the
    value is stored in the transaction table, run the Business Impact report.

Report Instructions

To run the Business Impact report, perform the following steps:

1   Click the **How is IT infrastructure performance and availability affecting my
    business?** link on the Reports page.

Report Parameters	
Reporting Time Period:	All Time Periods ∨
Show Change vs. Prior Period:	☐
Business Groups:	☑ Purchase ☑ Trade [Select All] [Unselect All]

2   Select the reporting time period from the list of predefined time periods.
    To specify a custom time period, choose **Date Range** and specify the start
    and end dates and times. Click the calendar icon to select a date from a
    calendar control. To include all statistics for the entire project, choose **All
    Time Periods**.

3   To display the change compared to the prior period, check the **Show Change vs. Prior Period** check box. This option has no effect if you select All Time Periods.

4   Select the business groups to include in the report. To select all business groups, click **Select All**. To deselect all business groups, click **Unselect All**. For information about defining business groups, see the *TransactionVision Advanced Customization Guide*.

5   Click **Generate Report**. TransactionVision displays results similar to the following example for each selected business group:

Business Impact Report

Name	Met Service Level	Completed Successfully	All Transactions			Delayed Transactions			Exceptions		
			Count	Total Value (Millions)	Avg. Value (Millions)	Count	Total Value (Millions)	Avg. Value (Millions)	Count	Total Value (Millions)	Avg. Value (Millions)
Purchase			4	$0.2401	$0.06	2	$0.1107	$0.0554	0	$0	$0
Bond			2	$0.1107	$0.0554	2	$0.1107	$0.0554	0	$0	$0
Equity			2	$0.1294	$0.0647	0	$0	$0	0	$0	$0
Trade			2	$0.0005	$0.0003	1	$0	$0	0	$0	$0
Fund Transfer			2	$0.0005	$0.0003	1	$0	$0	0	$0	$0

The data in the report is grouped into sections according to Business Group. The top row of each section (in blue) represents the business group. This row contains the aggregated data values for the transaction classes within that group. Subrows in each section display data for each transaction class within the business group.

A successful transaction is one that completes and returns a positive status code.

If you selected Show Change vs. Prior Period, each row is followed by a row showing the change from the prior period.

6   To run the Service Level Analysis report for all transaction classes in a business group, click the business group link. TransactionVision opens a separate window to display the results of the Service Level Analysis report. For more information about this report, see Service Level Analysis Report on page 199.

7   To run the Service Level Analysis report for a single transaction class, click the transaction class link. TransactionVision opens a separate window to the display the results of the Service Level Analysis report.

8   To run the Transaction Tracking report on the transactions reflected in the Business Impact report results, click a **Count** link. TransactionVision opens a separate window to display the results of the Transaction Tracking report for the transactions included in the count. For more information about this report, see Transaction Tracking Report on page 211.

8 Using TransactionVision with WebSphere Business Integration

TransactionVision Sensors typically monitor WebSphere MQ API calls such as MQPUT and MQGET invoked by WebSphere Business Integration Message Brokers (WBIMB) rather than the independent message flows that make up the WBI processes. The result is that the broker appears as a black box; the Sensor is unable to provide insight into the message flow activities. However, TransactionVision provides a WBI Sensor that enables TransactionVision to distinguish the various message flows and identify individual logical transaction paths within WBI.

➤ See the TransactionVision release notes for information about which versions of WBI are supported by TransactionVision.

The WBI Sensor is a WBI plug-in that supports trace nodes inserted into normal execution paths, and failure nodes inserted into failure paths. You may insert any number of processing nodes into an existing message flow at the desired points. Each processing node is a checkpoint that collects the state of the current message flow and reports it to the Analyzer. The reported event provides information such as broker name, message flow name, message data, etc. You may assign a unique label to each node; the label is reported in the TransactionVision event associated with the node instance.

TransactionVision Nodes

TransactionVision supports the following two types of nodes:

- Trace nodes
- Failure nodes

Trace Nodes

The trace node (TransactionVisionTrace) has an input terminal (in) and an output terminal (out). You may insert the node at any point within the message flow between two existing connected processing nodes. In general, the input terminal of the trace node will be connected to the output terminal of an existing source node, while the output terminal of the trace node will be connected to the input terminal of the node originally connected to the source node.

Failure Nodes

The failure node (TransactionVisionFailure) also has one input terminal (in) and an output terminal (failure). In general, you will attach this type of node to the failure terminal of an existing node in the message flow through the input terminal. If there is already a node attached to the existing node's failure terminal, this node can be reconnected to the failure terminal of the TransactionVision failure node.

Debug Logging

Both trace and failure nodes have a Boolean property called nodeTracing that controls informational debug logging. By default, this property is set to false. If you enable this property, any informational TransactionVision WBI Sensor events will be recorded in the local logging facility supported on the Sensor host. Sensor errors and problems will always be logged, regardless of this property setting.

WBI Sensor Events

Events generated by the trace and failure nodes are reported in TransactionVision under the API MQSI2TRACE API. This API is an extension API implemented in the Sensor. It provides a standard interface to represent message flow states.

The MQSI2TRACE API has the following prototype:

```
void MQSI2TRACE(
    MQHCONN         hConn,
    BSMQSIMFH       *pMFH,
    MQMD            *pMQMD,
    MQLONG          nBufferLength,
    PMQVOID         pBuffer,
    PMQLONG         pCompCode,
    PMQLONG         pReason)
```

The following table describes the parameters for this API:

Parameter	Description
hConn	The connection handle to the queue manager associated with the broker executing the message flow.
pMFH	A pointer to the message flow header structure (BSMQSIMFH) defined by TransactionVision.
pMQMD	A pointer to the message descriptor structure (MQMD) associated with the current message.
nBufferLength	The length of the message data reference by pBuffer.
nBuffer	Points to the message data at the current stage of message flow processing.
pCompCode	Points to the completion code representing the current trace state. The completion code also indicates the origin of the event. Trace nodes always return the completion code MQCC_OK. Failure nodes always return MQCC_FAILED.
pReason	Points to a reason code.

The structure BSMQSIMFH is defined by TransactionVision and is used to organize information about the message flow. It is defined as follows:

```
typedef struct tagBSMQSIMFH {
    MQCHAR4     StrucId;
    MQLONG      Version;
    MQCHAR48    MsgFlowName;
    MQCHAR48    NodeName;
    MQCHAR48    NodeLabel;
```

```
MQCHAR48    QMgrName;
MQCHAR48    BrokerName;
MQCHAR48    ExecutionGroupName;
} BSMQSIMFH;
```

The following table describes each field of this structure:

Field	Description
StrucId	Contains a string that uniquely identifies the structure. The value for this field is defined as "MFH ".
Version	Contains the version number of this structure. In the current release, the value of this field is always 1.
MsgFlowName	Contains the name of the message flow associated with the current event.
NodeName	Contains the name of the type of node associated with the current event. For trace nodes, the value is ComBristolTVisionTrace. For failure nodes, the value is ComBristolTVisionFailure.
NodeLabel	Contains the label string associated with the node of the current event. This label helps to identify the particular trace or failure node instance in a message flow.
QmgrName	Denotes the queue manager associated with the WBIMB handling the current event.
BrokerName	Denotes the WBIMB handling the current event.
ExecutionGroupName	Denotes the associated execution group for the current message flow.

Installation and Configuration

To use the WBI Sensor, you must do the following:

- Integrate the TransactionVision plugin with the Message Brokers Toolkit for WebSphere Studio.

- Install the TransactionVision WBI Sensor on the WBIMB platform.

See the *TransactionVision Sensor Installation and Configuration Guide* for instructions on installing and configuring the WBI Sensor.

Node Insertion

Once the installation and configuration tasks are complete, you may insert any number of TransactionVision Sensor trace and failure nodes into any message flows through the Message Brokers Toolkit. Remember that any changes made to the configuration repository must be deployed to the appropriate brokers.

TransactionVision Filtering

TransactionVision filtering support has been extended to support WBI trace and failure node monitoring. For both data collection filters and queries, you may filter on the API name (MQSI2TRACE), the broker name, and the message flow name. For queries, you may also filter on the parameters for the MQSI2TRACE API.

Quick Tour

To illustrate TransactionVision's WBI monitoring process, modify the Text Messenger sample from the WBI sample suite to introduce TransactionVision message flow tracing. Before you begin, make sure that TransactionVision has been integrated properly for the Message Brokers Toolkit and the WBI Sensor is installed with the WBI message broker(s).

Modifying Message Flow

The first step is to modify the Text Messenger message flow by adding TransactionVision trace and failure nodes.

The TEXTMESSENGER node retrieves the original message from the input queue, the Add IBM text node processes and modifies the message to add IBM text, and the PAGER node delivers the new message to the output queue. If a failure occurs somewhere along the flow, the message will be put on a failure queue by the TEXTMESSENGER_FAIL node.

Modify this message flow as follows:

1   Insert a TransactionVision trace node named "Before IBM text" between the TEXTMESSENGER and Add IBM text nodes. (Right-click the node and select **Rename...** to rename a node.) Connect the trace node in terminal to the out terminal of the TEXTMESSENGER node, and the out terminal of the trace node to the in terminal of the Add IBM text node. This node captures the flow state before the Add IBM text processing.

2   Insert a trace node named "After IBM text" between the Add IBM text and the PAGER nodes. This node captures the flow state after a successful Add IBM text processing.

3   Connect a TransactionVision failure node between the TEXTMESSENGER and TEXTMESSENGER_FAIL nodes. This node captures the flow state if a failure occurs within the message flow.

You may now deploy the modified Text Messenger message flow to the appropriate WBI broker.

9 Using TransactionVision with BAC

This chapter introduces the usability features possible when TransactionVision is integrated with Business Availability Center. It covers the following areas:

- Transaction class publishing to CMDB.

- TV Sample Job and BAC KPIs for TV.

- Flow map from BAC.

- Drill downs from Real User Monitor (RUM).

- Business Process Monitor (BPM) drill down.

See the *TransactionVision Administration Guide* for configuration details.

➤ To enable the integration between TV and BAC, users should enable the **Allow third party cookie** option in the Privacy settings of their browser.

Transaction Class Publishing to CMDB/BAC

Publishing Transaction Classes to CMDB

TransactionVision transaction classes correspond to *Business Transaction* and *Transaction Monitor* CIs in BAC.

- The Business Transaction object defines the class entity, and the Monitor holds a specific subset of the class attributes relevant to BAC.

- Whenever a transaction class is updated in the TV classification editor, the update is propagated to the corresponding CMDB objects

Transaction Class Publishing overview
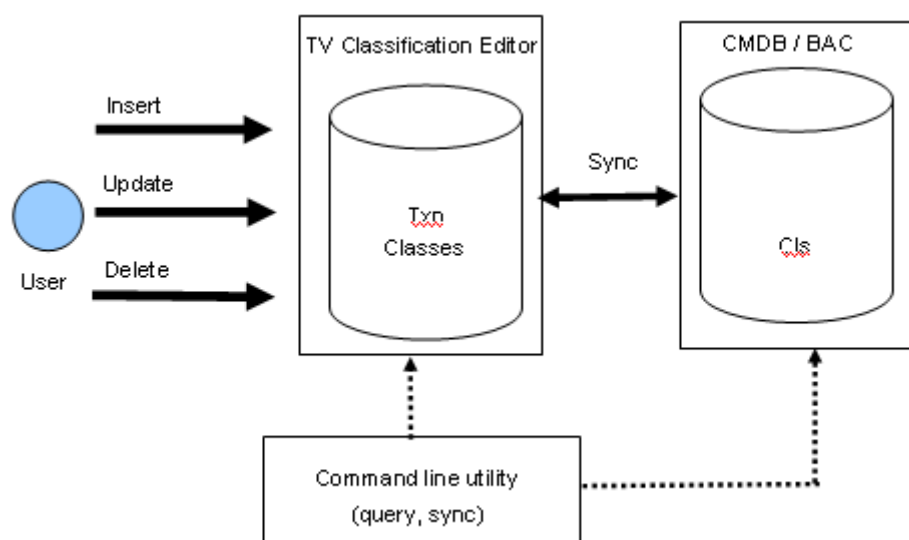
Transaction Class Publishing details
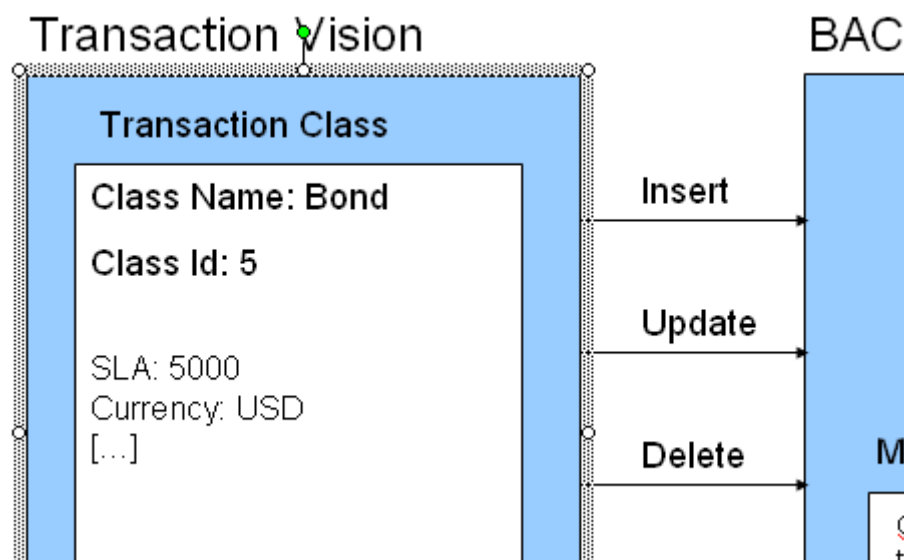
CI Attributes

The **Transaction Monitor CI** contains the following attributes that are populated by TV:

`Integer tvClassId`: the TV transaction class ID.

`String name`: the class name.

`Integer threshold`: the SLA attribute.

`String unit`: the currency unit, for example USD.

Unlike the above, the following Monitor CI attributes do not correspond to TV class attributes:

`Integer interval`: the sample interval of the BAC job.

`Integer timeSliceDelta`: the time slice shift amount in the BAC job.

`Boolean exceptionRuleDefined`: whether the class definition contains any rules for the *Exception* attribute.

`Boolean valueRuleDefined`: whether the class definition contains any rules for the *Value* attribute

`Boolean failureRuleDefined`: whether the class definition contains any rules for the *Result* attribute

The **Business Transaction CI** only has one attribute, the class name.

Transaction Classes

Defining a new Transaction Class in TV

Open the Transaction Classification Editor from the Administration menu. Click the **New** button, enter the information required and click **Finish** to save the new class to the TransactionVision database.

See the *TransactionVision Administration Guide* section on Classifying Transactions for more information.

The new Transaction class appears in the following way:
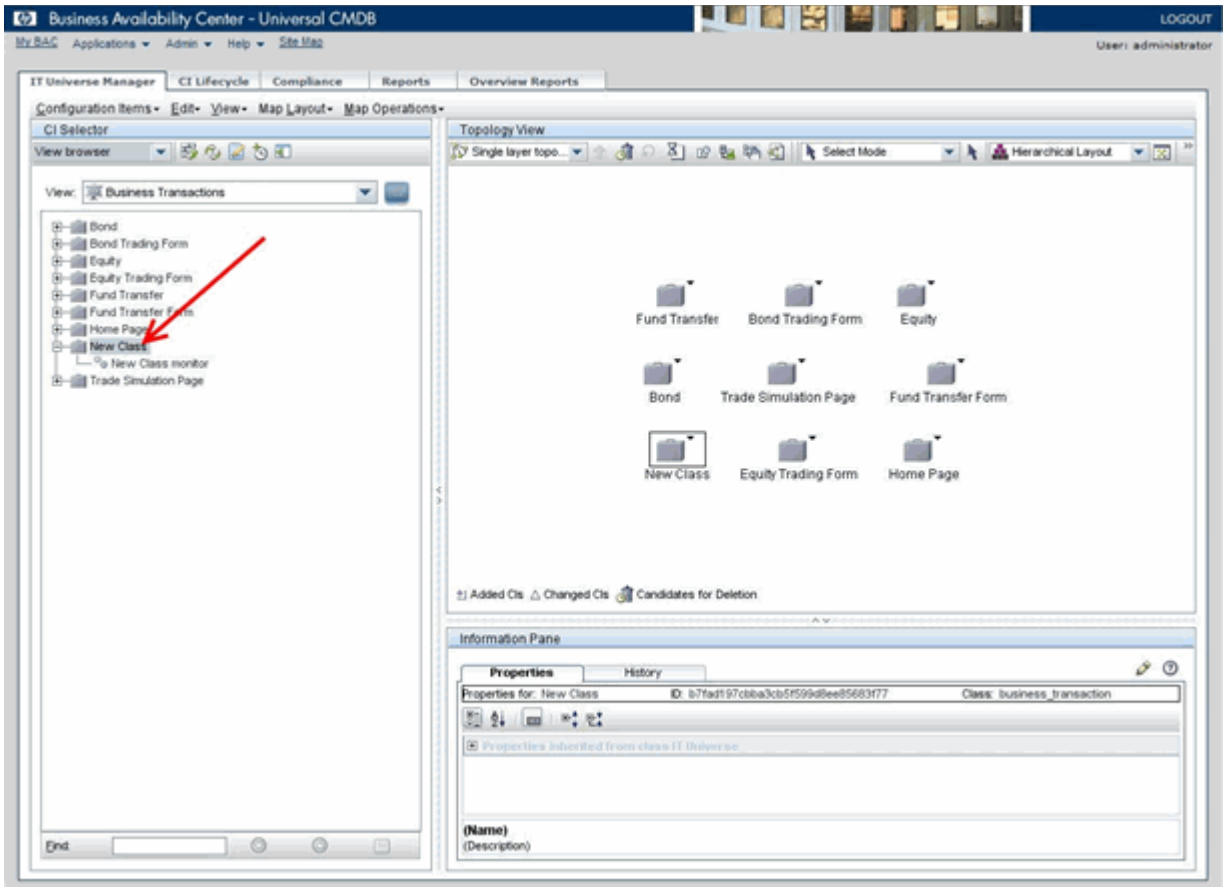
Command Line Diagnostic Utility

This utility is optional, mainly used for debugging. It offers the following functionality:

-delete: clears out all Business Transaction and Monitor CIs in CMDB.

-querycmdb: displays a list of all Business Transaction and Monitor CIs:

-querytv: displays a list of all Transaction Classes defined in TV:

-querydiff: displays the data that is not in sync between TV and CMDB.

-sync: synchronizes all Transaction Class data between TV and CMDB.

Example:

```
PublishTransactionsToCMDB.bat -h ovrntt124.ovrtest.adapps.hp.com
-p 8080 -u admin -p admin -a sync
```

TV Sample Job and BAC KPIs for TV

TV Sample job queries the business transaction table, and delivers aggregated samples of the monitored transactions within a certain time frame. The time frame is 5 minutes by default, but can be configured.

The samples are sent for two types of transactions:

- completed
- in-process.

The sample then delivers pre-defined metrics to BAC via HTTP Post.

BAC sample job is part of the TV job framework. For more information on configuring and starting the TV Sample Job, see the *TransactionVision Administration Guide*.

TV Sample common fields:

Field Name	Type	Description	Mand-atory
customer_name	string	The name of the customer	Y
time_stamp	long	Current BAC server time.	Y
tx_name	string	Transaction class name	Y
tx_id	int	Transaction class ID	Y

TV sample fields sent for completed transactions:

Field Name	Type	Description	Mand-atory
tot_tx_value	double	Total transaction value	N
tot_failed_tx_value	double	Total failed transaction value	N
tot_late_tx_value	double	Total late transaction value	N

Field Name	Type	Description	Mand-atory
tot_exp_tx_value	double	Total exception transaction value	N
tx_count	int	Total transaction count	Y
failed_tx_count	int	Total failed transaction count	N
late_tx_count	int	Total late transaction count	N
exp_tx_count	int	Total exception transaction count	N
sum_response_time	double	Total transaction response time	N
min_response_time	double	Total minimum transaction response time	N
max_response_time	double	Total maximum transaction response time	N

TV sample fields sent for in-process transactions:

Field Name	Type	Description	Mand-atory
curr_late_tx_count	int	Total in-process late transaction count	N
curr_tx_count	int	Total in-process transaction count	Y
curr_tot_tx_value	double	Total in-process transaction value	N
curr_tot_late_tx_value	double	Total in-process late transaction value	N
curr_failed_tx_count	int	Total in-process failed transaction count	N

Field Name	Type	Description	Mandatory
curr_tot_failed_tx_value	double	Total in-process failed transaction value	N
curr_exp_tx_count	int	Total in-process exception transaction count	N
curr_tot_exp_tx_value	double	Total in-process exception transaction value	N

A typical use case

The job that runs every 5 minutes:

- Retrieves the current time from the BAC time server.

- Queries the business transaction table in the given time range.

- Aggregates results to generate KPI metrics as defined in the functional specification.

- Dispatches the BAC samples to the BAC server using HTTP Post.

- A mechanism is in place for guaranteed delivery of samples.

Once BAC receives the samples from TV, it displays them in the dashboard.

Troubleshooting Tips

When TV samples are not delivered to BAC we recommend you check if:

- The BAC host name is not valid.

- The HTTP post is receiving a status code other then 200.

- BAC is ignoring samples due to different formats etc.

If you still do not see TV samples in the BAC dashboard, you can debug further by turning on tracing:

- Turn on BAC sample job's debug on the TV side, and make sure that samples are being sent successfully.

- Turn on BAC's trinity log, make sure no samples are ignored by BAC.

Debugging the TV sample job

1 Stop the BAC sample job.

2 Edit the job by inputting `-debug true` parameter.

3 Restart the job.

4 Once the debug flag is enabled, debug information is written to `ui_job.log` file in `{TVISION_HOME}/logs` directory.

5 The debug information includes the BAC time server's time stamp, the time stamps used by queries, and the SQL themselves, etc. It also contains the HTTP status code.

Debugging the receiving of samples by BAC

1 Turn WDE debug on by going to:

`{HPBAC DIR}\conf\core\Tools\log4j\mercury_wde\wde.properties`

2 Search loglevel and set `loglevel=DEBUG`.

See the logs in `{HPBAC DIR}\log\mercury_wde`:

— `wdeIgnoredSamples.log` (is filled in any mode)

— `wdePublishedSamples.log` (is filled only in DEBUG mode)

— `wde.log`

— `wde.all.log`

Flow Map from BAC
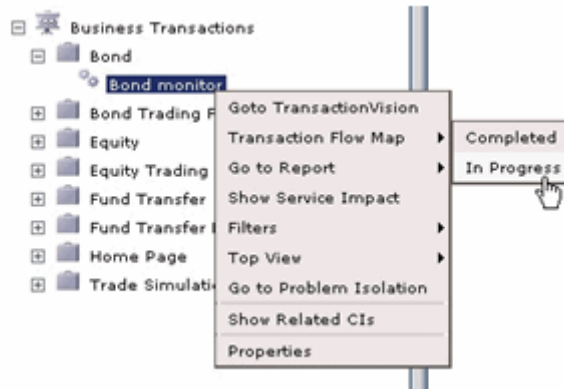
Flow Maps can be displayed to show either transactions that have:

- Completed - OR
- Are In Progress.

By default the flow map is displayed with the last 5 minutes of data, but this is configurable.

A tooltip displays the following metrics broken down by transaction categories, for each link in the flow map.

Metrics

- Value: Monetary amount associated with the transactions over a given path.
- Volume: Number of transactions over a given path
- Latency/Duration: Average time spent over a given path

Transaction State Categories

- Successful
- Late
- Failed

2 / 3 / 0
$3,310 / $1,496 / -
155.5 / 199 / -

2 / 3 / 0
$3,310 / $1,496 / -
0 / 30 / -

topic://REQUEST

topic://REQUEST Listener

topic://REQUEST ☐ topic://REQUEST Listener			
	Success	Late	Fail
Volume	2	3	0
Value	$3,310	$1,496	-
Latency	0	30	-

2 / 3 / 0
$3,310 / $1,496 / -
0 / 0 / -

2 / 3 / 0
$3,310 / $1,496 / -
0 / 10 / -

2 / 3 / 0
$3,310 / $1,496 / REPLY_FOR_SESSION
0 / 10 / -

2 / 3 / 1
$3,310 / $1,496 / -
456.5 / 6,445.67 / 26

Web Clients

2 / 3 / 1
$3,310 / $1,496 / -
25.89 / 395.36 / 3.75

TradeDemo

Host:tvvm

2 / 3 / 0
$3,310 / $1,496 / -
13.5 / 14.33 / -

2 / 3 / 0
$3,310 / $1,496 / -
0 / 3.33 / -

2 / 3 / 0
$3,310 / $1,496 / -
0 / 3.33 / -

topic://REPLY

topic://REPLY Listener

Host:tvvm

2 / 3 / 0
$3,310 / $1,496 / -
141 / 6,102.6 / -

2 / 3 / 0
$3,310 / $1,496 / -
0 / 10 / -

amqfcxba

Host:tvvm

2 / 3 / 0
$3,310 / $1,496 / -
0 / 10 / -

BOND

queue:///BOND Listener

Host:tvvm

Drill downs from Real User Monitor (RUM)

Benefits of Integration

- To help isolate problems occurring on the server side: the integration allows you to identify which parts of a server call are causing long server response times. In TV you'll see all events that participated in the server call, and the time taken for each sub-step of the server call.

- Adds direct links from RUM reports in BAC, to TV reports.

BAC Report	TV
Session Details	Drill down based on a specific page instance according to GUID and start time.
Session Analyzer	Drill down based on session ID + GUID of one of the pages.
Page Summary	Gets from RUM up to 10 pages GUID's, by worst server time, and drill down to TV report.
Page Summary: Page over time (only for the first page applied to filter)	Gets from RUM up to 10 pages GUID's, by worst server time, and drill down to TV report.
Page Summary: End Users by Page	Gets from RUM up to 10 pages GUID's, by worst server time, and drill down to TV report.
Page Summary: Servers by Page Summary	Gets from RUM up to 10 pages GUID's, by worst server time, and drill down to TV report.
Page Summary: Pages by Server Summary	Gets from RUM up to 10 pages GUID's, by worst server time, and drill down to TV report.

Drill down from BAC Page Summary (Page over time) to TV Report:
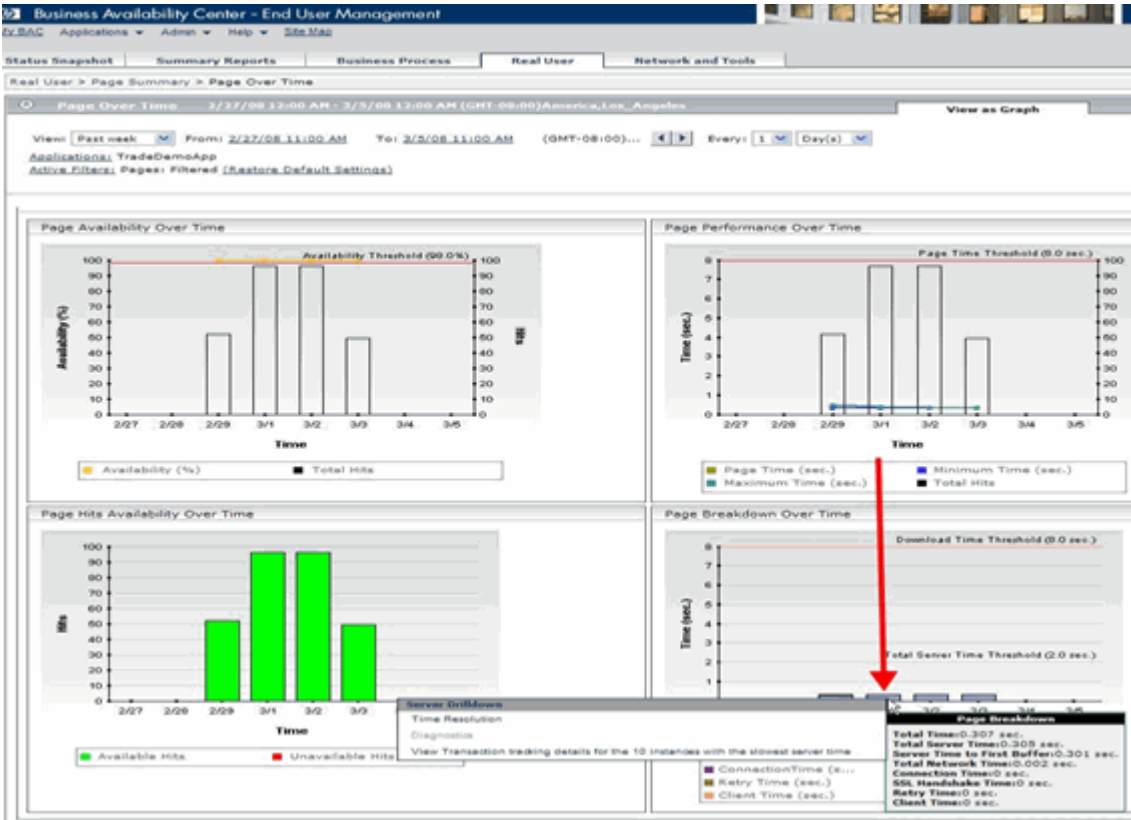
Drill down from Session Analyzer to TV Report:

Drill down from Session Details to TV Report:

Known limitations/behaviors

- **Click Stream must be enabled**: by default the 'click stream' is enabled. For performance reasons this can be disabled and BAC can be configured to store only a very limited amount of data. Other BAC functionality will not work when this is disabled, so HP cautions against this.

- **Time zone on target applications must be set correctly**.

- **TV does not support Session ID matching** based on, for example, regular expressions. BAC allows configuring a regular expression for the location of the Session ID within the request headers. TV currently only supports two fixed request header attributes (JSESSIONID and WebLogicSession), and a list of user-defined request header attribute names.

Business Process Monitor (BPM) drill down
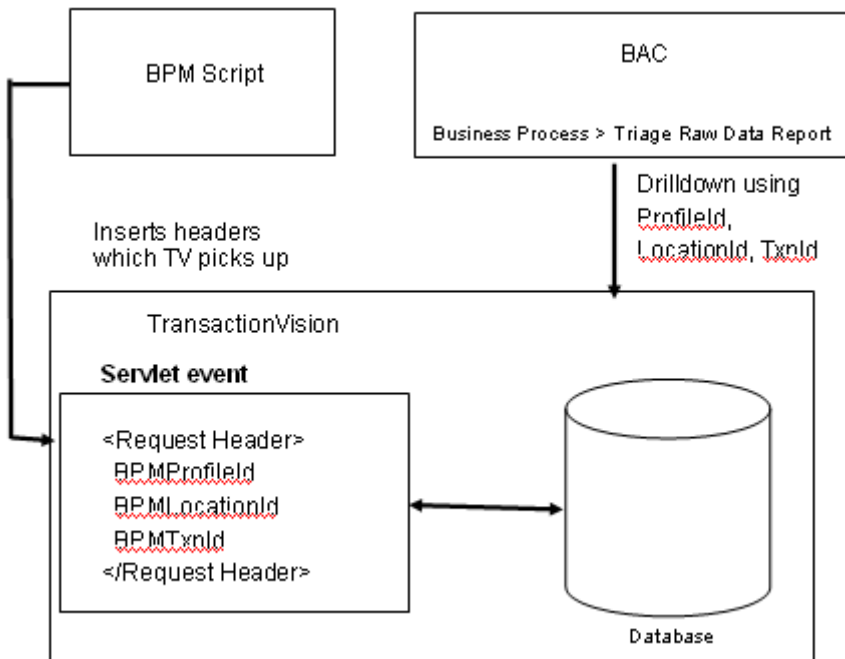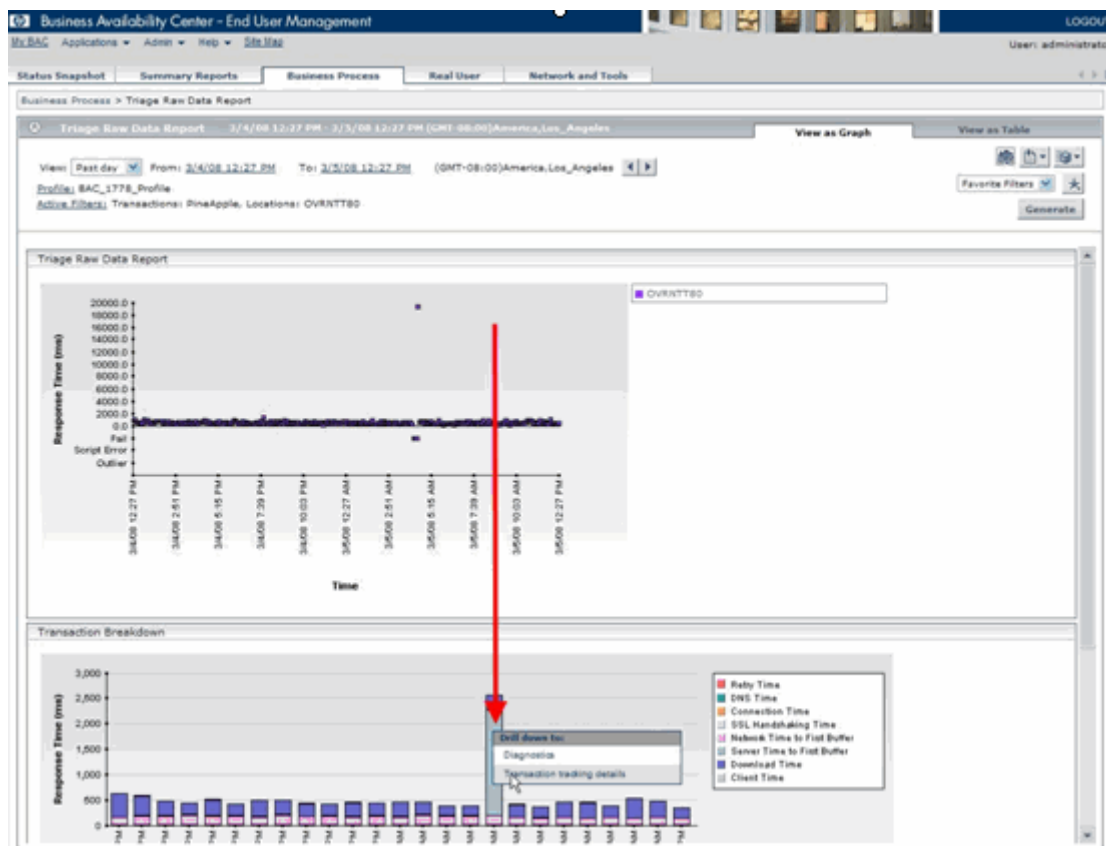
10 Using TransactionVision with BPI

The integration between BPI and TransactionVision enables you to:

1 Import TransactionVision business transaction event definitions into the BPI Model Repository. You can then use the Modeler to create processes which have Data progress HPBPI business processes

2 Progress to BPI business processes with data received from TransactionVision business transaction events.

3 Link from details of TransactionVision instances, to the process instance details page within the BPI Business Process Dashboard.

4 Provide the detail of TransactionVision transaction level problems to BPI.

You can define rules within TransactionVision which are specific to BPI. These rules define the business transaction events that you want made available to BPI. TransactionVision then collects these events and aggregates the data related to the events. The events and the aggregated data are placed on a JMS queue and are available for BPI to import into the Model Repository.

The components of TransactionVision communicate using an application server, specifically, the message-oriented middleware component of the application server; this is referred to as a messaging bus in this chapter. You need a component of the same messaging bus on the machine where BPI is installed in order that BPI can communicate with TransactionVision. Typically, these are referred to as client and server components.

This diagram shows the high level architecture of the BPI and
TransactionVision integration.
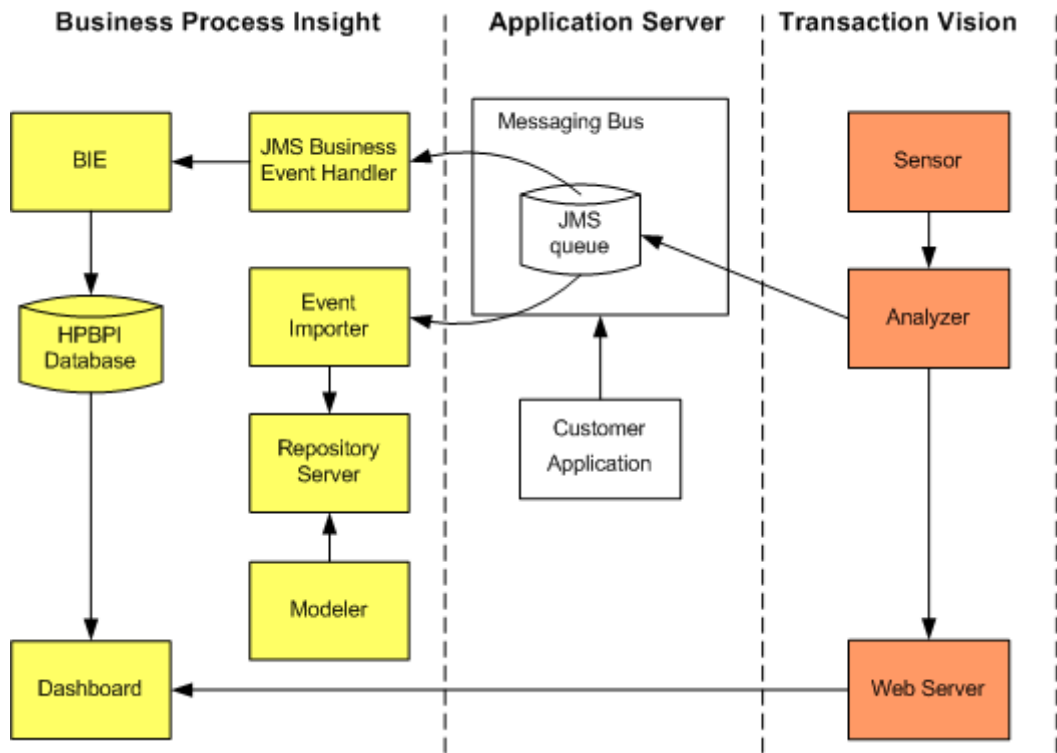
Design-Time Integration

This section describes how data is moved between TransactionVision and BPI when you are designing your processes and configuring your systems.
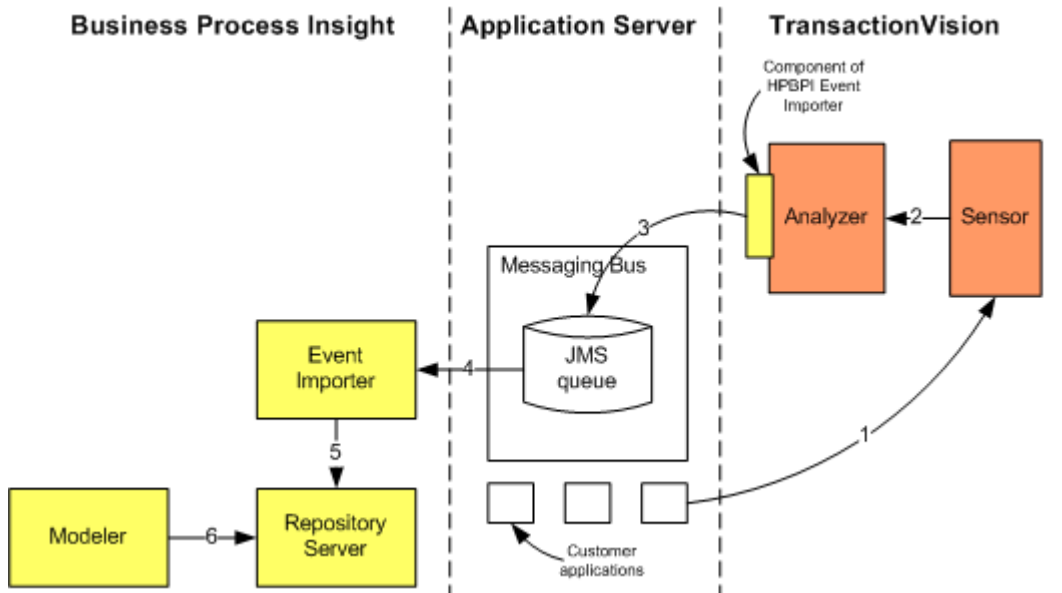
The flow of configuration information, as shown in the diagram above, is described in the following steps:

Step 1: Transactions sourced from customer applications are imported into Transaction Vision.

Step 2: TransactionVision sensors are configured to collect transaction events from the customer applications.

Step 3. Event and transaction rules are defined to filter the incoming transactions according to your requirements. The required transaction events are placed on the configured BPI JMS queue.

Step 4: The HPBPI event importer component reads the transaction events from the JMS queue and imports them into the Model Repository, where they are available to the Modeler.

Step 5: You define your processes as usual and create Data definitions, which can then subscribe to the imported Event definitions.

Run-Time Integration

This section describes how data is processed between TransactionVision and BPI when your system is operational.
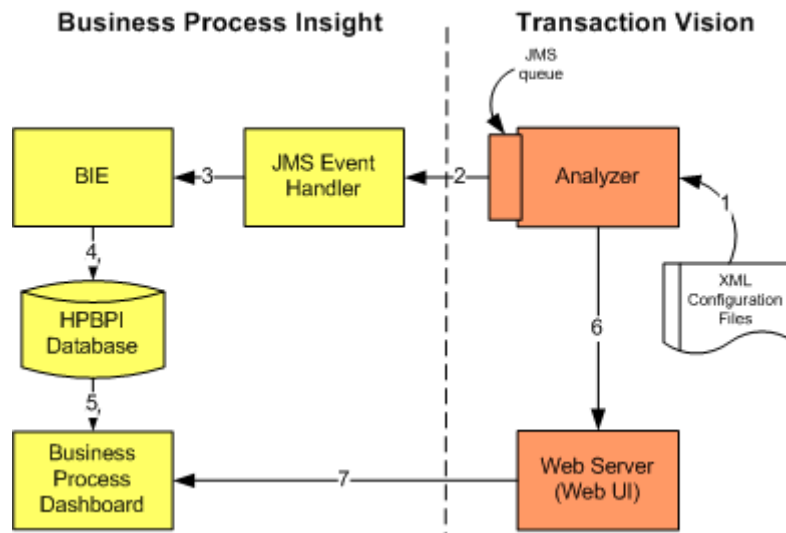
The flow of data, as shown in the diagram above, is described in the following steps:

Step 1: Using the rules that you have defined in an XML file for the business transaction events that you want to collect, TransactionVision filters the appropriate events and places these events on a JMS queue that you have defined.

Step 2: The JMS Business Event Handler is listening for new events that are arriving on the queue.

Step 3: The JMS Business Event Handler processes the transaction events and sends them to the Business Impact Engine for processing.

S**tep 4**: Details of the process and its progression are held in the BPI database as usual:

Step 5: The Business Process Dashboard presents the results of the process progression.

Step 6: Details of the TransactionVision events are displayed within the TransactionVision Web user interface.

Step 7: The Business Process Dashboard provides links to the appropriate business transaction events within the TransactionVision Web user interface.

File   Edit   View   Favorites   Tools   Help

Back   Search   Favorites

Address   http://16.25.83.66:44080/hpbpi-bpd/gen/flowInstance.jsp?view=flowDiagram&flowinstanceid=2001c82c%3A11937af32db%3   Go   Links

Process Steps

Step Name	Overall Duration (H:M:S)	Latest Start Time	Latest End Time	Multiple Starts?
Automated Disapprove	0 : 00 : 00.00	--	--	No
Confirm Identity	0 : 00 : 00.20	10-Apr-2008 11:18:51 BST	10-Apr-2008 11:18:51 BST	No
Create Contract	0 : 00 : 00.21	10-Apr-2008 11:18:51 BST	10-Apr-2008 11:18:51 BST	No
Create Form	0 : 00 : 00.00	10-Apr-2008 11:18:51 BST	10-Apr-2008 11:18:51 BST	No
Credit Check	0 : 00 : 00.00	--	--	No
Initial Checks	0 : 00 : 00.26	10-Apr-2008 11:18:51 BST	10-Apr-2008 11:18:51 BST	No
Manual Checks	0 : 00 : 00.19	10-Apr-2008 11:18:51 BST	10-Apr-2008 11:18:51 BST	No
Manual Disapprove	0 : 00 : 00.00	--	--	No
Phoneline Activated	0 : 00 : 00.00	10-Apr-2008 11:18:52 BST	10-Apr-2008 11:18:52 BST	No
Provision Phone	0 : 00 : 00.31	10-Apr-2008 11:18:51 BST	10-Apr-2008 11:18:52 BST	No

Associated Data (TV Phone_Data)

Property Name	Property Value	View Transaction Tracking Details
CustomerType	Regular	
LastBPIEventName	Phone_Finish	
OrderValue	105 (USD)	
Region	Central	
State	Phoneline Activated	
TransID	5001	

Discussions   Discussions not available on http://16.25.83.66:44080/

Local intranet

BPI Dashboard with Process Instances that have TransactionVision tracking information. If you click on the icon on the right side of the CustomerType row, you are taken into TransactionVision.

Refer to the *Business Process Insight Reference Guide* for information on:

- Event Importer options, and running the Event Importer.
- How to configure a JMS Business Event Handler.
- How to configure an Event source.

Single Sign-On

If Lightweight Single-Sign-On (LW-SSO) is configured in TransactionVision and BPI, it will allow the user to navigate between these products without any further authentication. For more details on setting up LW-SSO, see the LW-SSO section in the BPI and TransactionVision documentation.

11 Drilling Down to Diagnostics from TransactionVision

This chapter explains:

- How to view Diagnostics Data from TransactionVision.

- How to drill down to the Diagnostics Hosts View from TransactionVision.

- How to drill down to the Diagnostics Server Requests Data from TransactionVision.

About Viewing Diagnostics Data from TransactionVision

TransactionVision 7.50 integrates with Diagnostics 7.50 to provide additional information useful in triaging performance problems.

A typical scenario would be to use TransactionVision to identify a specific instance of a business transaction that is performing poorly, and then drill down to the application server requests in Diagnostics to continue the process of identifying the problem code components.

➤ Before viewing Diagnostics data from TransactionVision, you need to configure the integration. See the *TransactionVision Administration Guide* for this procedure.

With Diagnostics integrated with TransactionVision, you can drill down from TransactionVision to Diagnostics to get the following types of information:

- The drill down to a Diagnostics Hosts view provides system metrics like CPU utilization and memory utilization that can help you determine if the problem is a system issue.

- The drill down to a Diagnostics Server Requests view can help you study the performance of these server requests over time and look at detailed instance trees (call profiles, methods, exceptions and faults) associated with the server requests, to identify where the issue lies.

- From the Server Request data you can navigate to the corresponding probe entity and look at the application server metrics (for example, JMX metrics) to see if the issue lies with the application server.

➤ If single sign-on is configured in both Diagnostics and TransactionVision, you will not be prompted to login each time you wish to drill down from TransactionVision to Diagnostics views. Refer to the *TransactionVision Administration Guide*, *Integrating TransactionVision with other Products* section for details on configuring single sign-on.

Drilling Down to the Diagnostics Hosts View from TransactionVision

You can drill down from a TransactionVision event to the Diagnostics Hosts view as follows:

1 From the TransactionVision main menu select **Views > Event Analysis**.

2   Select any J2EE event (for example, EJB event, HTTP event, JMS event) and click **Details** to display the Event Details.

3   Select the drill to Diagnostics icon located next to a TransactionVision
     host.

4   The Diagnostics UI opens and the Hosts view is displayed. The
     TransactionVision host is selected, data for the host is shown in the graph
     and metrics for the host are displayed in the details pane. This is useful
     because you can see system metrics and identify if the problem is a system
     issue.

     Some of the metrics available in the details pane for the host system
     include: Average CPU Utilization, Average Memory Utilization, Average
     Disk IO in Bytes/Second, Average Network IO in Bytes/Second.

     From this Hosts view in Diagnostics you can see the performance of the
     host system charted over various time periods. Also you can check to see if
     the system has recently experienced a performance degradation or if the
     system has consistently under performed.

Drilling Down to the Diagnostics Server Requests Data from TransactionVision

There are several ways to drill down to Diagnostics server requests data from
TransactionVision.

•   Drill down from the Transaction Tracking report.

•   Drill down from the Event Analysis details.

Drilling down from the Transaction Tracking report to Diagnostics Server Requests data:

1   From the TransactionVision main menu select **Reports > Where are my
     transactions?** In the Transaction Tracking report select the **Generate Report**
     button.

2   Select any business transaction instance that has J2EE events to view the
     transaction details.

3   Select the Drill to Diagnostics icon located next to the business
    transaction or transaction step. The drill to Diagnostics icon displays

    whenever there is a server request associated with the business
    transaction or the transaction step in the Transaction Tracking detail
    report.

4   The Diagnostics UI opens and a Snapshot view of the server requests
    corresponding to this business transaction displays.

▶   For information on how to interpret the data in a snapshot, see the *HP
    Diagnostics User's Guide*

Drilling down to Diagnostics Server Requests data from TransactionVision Event Analysis:

1   From the TransactionVision main menu select **Views > Event Analysis**.

2   Select an event and click **Detail**.

3   The Event Details page opens.

4   Select the drill to Diagnostics icon located next to a TransactionVision
    URI.

5   The Diagnostics UI opens and the Snapshot view of the server requests
    corresponding to the event for this URI is displayed.

Troubleshooting tips

▶ No snapshot displays:

— If the minimum.method.latency configured for the probe in the `capture.properties` file is so high that the server request's latency does not reach this threshold.

— If the transaction you drilled down from in TransactionVision is a forwarded event. This is because Diagnostics does not track forwarded requests.

Further Diagnostics resources

See the *HP Diagnostics User's Guide*.

Index

local transactions
    displaying in Event Analysis, 181

login to TransactionVision, 25

log out, 31

M

menus, 29

message ID query
    WebSphere MQ, 91

message ID query, WebSphere MQ IMS
    Bridge, 100

message latency analysis report, 225

message tracking example, 32

method query
    EJB, 73
    JMS, 80
    Servlet, 85
    User Events, 102

modifying, 129
    node labels, 128

MQSeries-IMS Bridge Sensor, 15

N

name query
    EJB, 72

node labels, modifying, 128

O

object query
    WebSphere MQ, 89
    WebSphere MQ IMS Bridge, 100

P

performance analysis example, 39

performance dashboard report, 228

primary event time, 25

printing
    component topology analysis graphs, 137
    report results, 198

printing graphs, Transaction Analysis view,
    166

projects
    definition, 18
    view details of active project, 30

proxy paths, Transaction Analysis view, 157

Proxy Sensor, 14

Q

Queries
    definition, 23

Z