Glossary

This glossary includes terms used in Application Performance Management (APM) solutions. Though some terms are specific to certain solutions, it is helpful to include all terms together to promote an in-depth understanding.

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

A

agent *See* capture agent.

AppDoctor The AppTransaction Xpert utility that is used to pinpoint bottlenecks in an application, view statistics about network and application performance, and identify the relative components of application and network delay in the total response time.

AppInternals Xpert The solution that delivers comprehensive performance management for critical Java and .NET applications throughout the application lifecycle, beginning with development and QA, and continuing through deployment and operations. AppInternals Xpert continuously monitors thousands of system and application metrics within each server, across all tiers, and automatically spots performance anomalies with advanced deviation tracking. AppInternals Xpert's unique correlation technology automatically detects patterns in metrics and events, identifying cause-and-effect relationships and pinpointing symptoms that might otherwise go undetected. With deep transaction tracing from within the Java Virtual Machine (JVM) and the .NET Common Language Runtime (CLR) virtual machine, AppInternals Xpert provides method-level visibility into application code, enabling root-cause analysis and rapid problem remediation.

AppInternals Xpert Transaction Trace Analyzer Transaction Trace Analyzer reads trace files generated by AppInternals Xpert's Java Instrumentation and .NET Data Adapters (JIDA / dotNet DA). These transaction trace files record the execution sequence of calls within a Java application and the call hierarchy of Java / .NET classes which the data adapter is configured to trace. Transaction Trace Analyzer shows the call hierarchy in an intuitive user interface that lets you quickly find details (such as execution time and associated SQL statements) on calls of interest.

AppInternals Xpert Transaction Trace Warehouse Transaction Trace Warehouse, a component of AppInternals Xpert, stores continuous transaction trace data harvested from AppInternals Xpert's managed nodes. Transaction traces record the execution sequence and performance of individual method calls in an application.

Transaction Trace Warehouse provides a Web user interface to search for

specific transactions of interest out of the many thousands of available transactions. It displays a response time chart and a summary of transactions that match your search criteria. These charts show general trends in performance and outlier transactions that can be analyzed further in Transaction Trace Analyzer and/or AppTransaction Xpert.

application capture agent *See* capture agent.

application message chart A Data Exchange Chart that filters out network information and shows a task from a application-layer perspective.

application task characterization *See* transaction analyzer model.

application transaction In the context of AppTransaction Xpert, an "application transaction" is the entire set of application traffic exchanged to complete one user-level task. Thus an FTP download transaction consists of all traffic from the transmission of the first GET message to the arrival of the ACK message for the last data packet.

In some cases an application transaction can contain smaller transactions. For example, a web page download over HTTP might include the download of several image files. In this case, each separate file download could be considered a component transaction of the web page download.

application turn An application turn occurs when the flow of messages changes direction. For example, when a TierA —> TierB message is followed by a TierB —> TierA message.

AppResponse Xpert An application based solution that monitors and analyzes end-user experience for all levels of transactions. It also supports in-depth monitoring and analysis of the underlying network, a domain that is vital to comprehensive application performance management.

AppTransaction Xpert Decode Module An add-on module that enables AppTransaction Xpert to decode over 400 types of applications and to perform transaction analysis.

AppTransaction Xpert Packet Trace Warehouse The solution for enterprise-wide, secure web-based packet capture from end-user workstations and servers.

B

Bandwidth delay The component of delay caused by the limited bandwidth of the network.

C

capture agent A process or daemon for capturing traffic data on a local or a remote host. Also known as a *sniffer* or *protocol analyzer*.

capture file *See* packet trace file.

Capture Manager The AppTransaction Xpert utility for capturing application traffic on a network.

congestion delay The measure of a packet queuing in the network.

D

Data Exchange Chart A window that shows the data transferred between tiers on a time line from the start to the end of the application task. *See also* application message chart and network packet chart.

delay *See* network delay, parallel effects, tier processing delay, and user think time.

dependency A visual representation of the delay time and causal relationship between two sequential messages at the same tier. In the Application Message Chart, a dependency appears as two lines that connect the arrival of the first message and the transmission of the second message.

E

environment database *See* preferences file.

F

FTP (File Transfer Protocol) A standard protocol for transmitting files between computers over the Internet.

H

HTTP (Hypertext Transfer Protocol) The set of rules for transferring files (text, graphic images, sound, video, etc.) over the World Wide Web.

HTTPS (HTTP over SSL or HTTP Secure) The use of Secure Socket Layer (SSL) as a sublayer under regular HTTP application layering. HTTPS encrypts and decrypts requests and the data returned by the Web server.

I

<install_dir> A symbol representing the path name of the installation directory, which contains the complete software and model files for all installed OPNET releases. *See also* <reldir>.

K

keystore A file that contains keys and certificates used for authentication.

L

latency delay The component of delay due to latency in the network. (Latency is the time required for 1 bit to be transmitted across the network. Using a ping is one way to measure latency.)

logic script A script inserted into a Transaction Whiteboard file.

M

manual merge The process of merging two or more packet trace files when AppTransaction Xpert cannot merge them automatically. To manually merge two packet trace files, you must specify the time offset between the two capture start times.

multi-tier correlation A procedure for filtering an AppTransaction Xpert task of a transaction captured in a production environment. The aim is to filter extraneous traffic from the task, so that only relevant traffic is included. This feature is useful when you want to diagnose your production environment and how it affects your applications.

Multi-User QuickPredict Enables you to create QuickPredict deployments that involve multiple clients, multiple serves, and/or multiple applications.

N

network delay Delay due to congestion, retransmissions, and other factors specific to the network in which the application was captured.

network packet chart A Data Exchange Chart that shows a task from a network-layer perspective.

Network Transfer effects The combination of bandwidth, protocol, and congestion components that is reported in AppDoctor before bandwidth is specified.

P

packet A structured message that carries information between network components.

packet trace file A traffic data file created by a capture agent. A packet trace file contains the raw traffic data. This file is imported into AppTransaction Xpert to create the transaction analyzer (.atc.m) file, and is also used to show the detailed protocol decodes in AppTransaction Xpert. Also known as a *capture file* or an *application capture file*.

packet tree A group of packets that are copies of a single, original packet.

parallel effects When multiple types of delay occur in parallel, as often happens with HTTP and other protocols.

PathProbe A utility that enables you to measure the characteristics of your network using the Capture Manager and a capture agent.

preference A user-specified setting that controls behavior. Preferences can be specified from the GUI (Edit > Preferences) or, when starting OPNET analysis software, from the command line.

preferences file A text file that contains the preferences for AppTransaction Xpert. Preferences can be saved in the file to be applied automatically when a program is started.

probe An object that represents a user's request to collect a particular piece of data about a simulation, such as local or system-wide statistics, attribute values, and animation data.

protocol decode A text translation of the protocol and application data within one or more network or application packets.

Protocol Decodes Viewer A window that shows the protocol decodes as a set of packets.

protocol delay A metric of network restriction to packet flow. This restriction may be caused by flow control mechanisms imposed by network protocols. TCP, for example, has several built-in flow control mechanisms.

Q

QuickPredict A utility that enables you to determine quickly how network variations will affect your application's performance. *See also* Multi-User QuickPredict.

QuickRecode Provides the ability to manually edit parts of a Transaction Analyzer file so that you can predict the behavior of a "hypothetical application".

R

<reldir> A symbol representing the path name of the release directory, which contains the complete software and model files for a specific release. *See also* <install_dir>.

S

session A single conversation between a client and a server. All traffic between application clients and servers is organized into sessions.

T

TCP/IP (Transmission Control Protocol/Internet Protocol) The basic communication language or protocol of the Internet.

template A panel, graph, or trace without data, but that retains complete trace and format information. New data can be applied to a template and immediately displayed in a predefined way.

think time See user think time.

Tier Pair Circle A window that highlights the conversations between individual tiers and shows which tiers are conversing.

tier processing delay Delay due to application processing between message arrivals and transmissions at a specific tier, including user think time.

trace A series of data points displayed in an analysis panel graph. A trace can be derived from an output vector, output scalar data, or another trace. A graph can contain one or more traces.

trace file Trace files (.apptrace) are generated by AppInternals Xpert data adapters (either the Java Instrumentation Data Adapter (JIDA) or dotNet data adapter). The trace files record execution sequence of calls within an application and the call hierarchy of Java or .NET classes that the data adapter is configured to trace.

transaction analysis The capability to organize a task into individual protocol-specific transactions. The AppTransaction Xpert Decode Module provides this capability for certain protocols such as HTTP.

transaction analyzer model The primary file type, which contains the high-level information about an application transaction. Also called an AppTransaction Xpert *task*. An application task describes a single application transaction.

Transaction Trace Analyzer (TTA) See AppInternals Xpert Transaction Trace Analyzer.

Transaction Whiteboard A component of AppTransaction Xpert that enables you to design and edit an application's behavior in a graphic environment similar to AppTransaction Xpert. You can import and edit existing Transaction Analyzer files, or create Transaction Whiteboard files entirely from scratch. You can also write and insert logic scripts into a Transaction Whiteboard file to model complex application-layer logic and behavior. After modeling an application in Transaction Whiteboard, you can predict the application's performance using discrete event simulations or QuickPredict.

Tree View window The primary window, which shows the AppTransaction Xpert task using a treeview, a statistics table, and a time line.

treeview A hierarchical way of listing related items, such as statistics, for viewing or selection. Higher-level nodes of a treeview can be expanded to show lower-level nodes.

U

user think time Delay incurred whenever a client-side application waits for user input before it can proceed.