

Precise, accurate performance analysis

Compuware ApplicationVantage quickly pinpoints the source of performance problems in pre-production and production environments for mission-critical applications by identifying slowdowns and validating improvements.

Transaction response-time performance matters more than ever for mission-critical and revenue-producing applications. When it comes to troubleshooting distributed applications, it is often difficult to establish which component is contributing to poor response times. This process involves many layers of infrastructure, including client workstations, networks, servers and databases. IT staffs generally consist of multiple groups, each armed with their own individual tools that look for problems in isolation. Unfortunately, most of these tools cannot isolate a performance bottleneck in a complex application environment.

ApplicationVantage is the premier troubleshooting solution in the marketplace today for addressing application transaction performance concerns. It helps find and fix application performance and infrastructure problems in pre-production and production. By providing detailed troubleshooting insight,

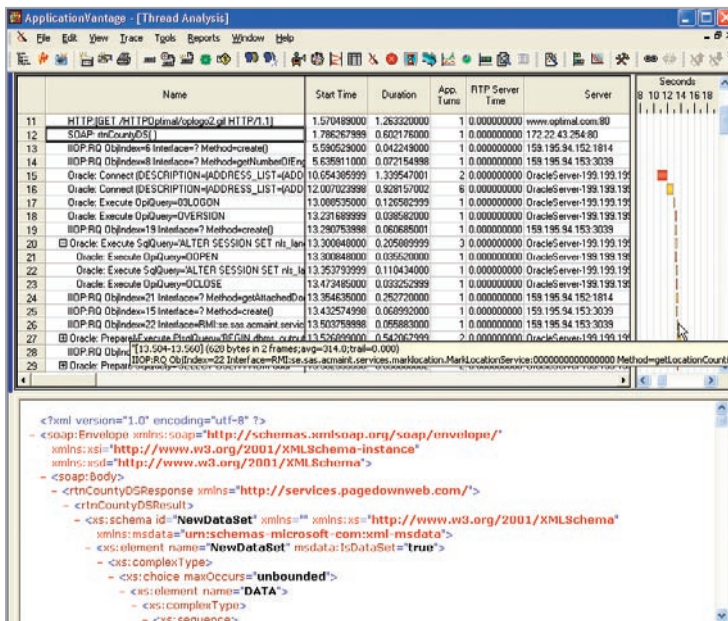
ApplicationVantage pinpoints and corrects the causes of poor end-user response times wherever they reside—client workstations, the network, a server or even the application itself—thus, eliminating time-consuming guesswork. In addition, ApplicationVantage helps ensure new applications roll out successfully the first time around, and provides crucial information for establishing and meeting service requirements.

Make well-informed problem-solving decisions

To troubleshoot application performance problems effectively in today's complex distributed application environments, IT professionals need a complete picture of the problem so business can be restored as quickly as possible. ApplicationVantage provides numerous analyses and reports to help network administrators and others understand a distributed application's behavior and performance dependencies.

The Thread Analysis, for example, provides an easy way to understand the files or commands an application sends over the network in a single transaction, such as Java commands, SQL statements or HTTP/HTTPS commands. It also provides insight into the time and duration of a thread and the relationships between threads. Optional decode modules analyze specific database and middleware commands to isolate performance problems. When Compuware's Vantage Analyzer product is installed in Java and .NET environments, ApplicationVantage presents a complete end-to-end view of the end user's transaction and pinpoints the component causing poor performance anywhere in the infrastructure (first tier or back-end).

With the Thread Analysis report, you get a complete picture of a transaction's performance, which helps speed up the resolution process.



Thorough network data collection and analysis

With ApplicationVantage, many of the functions that are provided with other vendors' packet capture and analysis solutions can be performed from a single console location. This allows the ApplicationVantage user to perform transaction analysis without switching products.

Baseline comparisons: Eliminate the guesswork

When troubleshooting, it is much simpler to compare the poor performance of a transaction to a known good one. The Comparison View allows users to compare the performance of a problem transaction with a user-designated "baseline" trace.

The Comparison View evaluates the most significant differences between the traces and highlights them in order of priority. It also provides possible causes of problems and indicates the next steps IT teams should take.

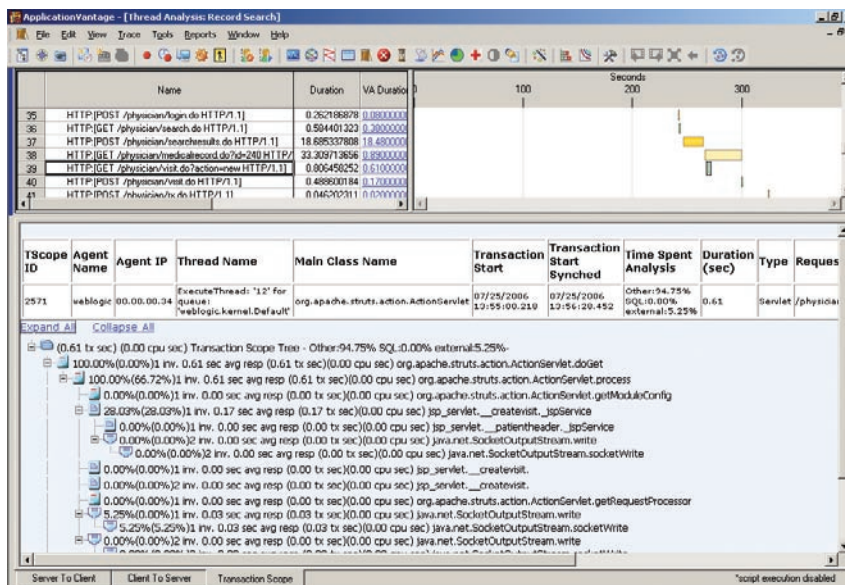
Getting the right data

To pinpoint specific problems identified by users, IT professionals need to obtain transaction-specific data. With ApplicationVantage, they can set up a capture from multiple remote agents and obtain network trace data from the production environment.

The patented Extended Merge™ module, for example, provides a manual start-and-stop process for applying relevant filters to obtain capture information on problem transactions. From there, users can retrieve and merge any number of traces to obtain a realistic view of the transaction and determine the source of the problem.

By contrast, the Unattended Capture Manager™ (UCM) module allows users to capture data on an "as needed" basis. When collecting data from remote agents, a time filter for a specific period can be selected to limit the amount of data captured. For example, agents can be set up to capture data for three hours. If a problem occurs during that period, the administrator may decide only to retrieve data five minutes before and after the event so only the relevant data necessary to troubleshoot the problem is collected.

In some cases, it is only possible to collect data from a single point, possibly on the system of the client who is reporting the performance problem. ApplicationVantage provides the ability to capture the transaction from this point with its patent-pending Active Latency Detection™ (ALD). When the resulting trace file has been retrieved, the user can use the Single Trace Adjust feature and the ALD information to produce an accurate representation of the client's transaction, showing the effects of bandwidth and latency separately from server processing time. From there, the user can analyze and resolve the problem quickly and easily, knowing the data is accurate.



ApplicationVantage presents a complete end-to-end view of Java and .NET transactions when used in conjunction with Vantage Analyzer.

Solving problems once and for all—the first time

ApplicationVantage provides a predictive troubleshooting component that allows network administrators to see the impact of various performance adjustments on a transaction's response time over the following components:

- Network: modifying bandwidth, latency and load
- Server: increasing/decreasing the power of a server
- Application: changing application turns for individual "thread" components, varying TCP window size.

By adjusting these parameters one at a time, administrators can determine if the overall response time of the transaction is affected significantly. If it is, they can recommend a corrective course of action that will resolve the problem.

A performance expert is unnecessary

You don't need a performance guru on your IT staff with the ApplicationVantage Transaction Expert on duty. This tool, which is part of the Expert Analysis module, provides fully automated task analysis and reporting via Microsoft Word. Reports include an Executive Summary that provides a short synopsis of the task's performance, a Conclusion and Recommendations section that identifies major bottlenecks and how to fix them, and a Results and Discussion section that provides protocol summaries, detailed delay characteristics via an application bottleneck graphic and network characteristic sparklines. With the Transaction Expert, you get immediate troubleshooting insight into application performance problems, as well as recommendations on how to correct them in a succinct report that's easy to communicate to management and colleagues.

Ensure production readiness

With today's shortened development cycles, many new applications are passed to operations groups with little validation as to their impact on the enterprise. All too often, distributed applications that "worked well in the lab" fail to work in a distributed and complex WAN environment. As hundreds of end users begin using the new application, they don't get the performance they expect. In the meantime, other applications are severely impacted by the overhead of the new application. This can cause a complete breakdown on the infrastructure, resulting in lost revenue. In addition, resources often become over-taxed and it's difficult to bring the environment back to normal.

Executive Summary

Overview

The analysis presented is for the application **Demo - Flowchart Examples**. The task analyzed is **Processing Sensitive Transaction Example**. The task involved two nodes on two identifiable tiers. The trace took place at 3:39 pm on Friday, January 17, 2003.

The total response time is **16.61** seconds.

The Transaction Expert has determined that **Node Processing** is the most important aggregate factor limiting performance for this task across all resources. Node Processing on **LJQA-W2KADV-GHO** was the largest contributor in this category, and accounted for 10.43 seconds, or **62.80%** of overall response time.

Resource Usage

LJQA-W2KADV-GHO contributed the most delay of any single resource, **10.44** seconds, or **62.82%** of total response time.

Resource	16.61 seconds	Final
WAN	7.78%	1.29 seconds
LAN	0.03%	0.00 seconds
LJQA-W2KADV-GHO	62.82%	10.44 seconds
Client	29.38%	4.88 seconds

The running percentage delay attributable to each resource is shown, ending with the final breakdown of response time by resource.

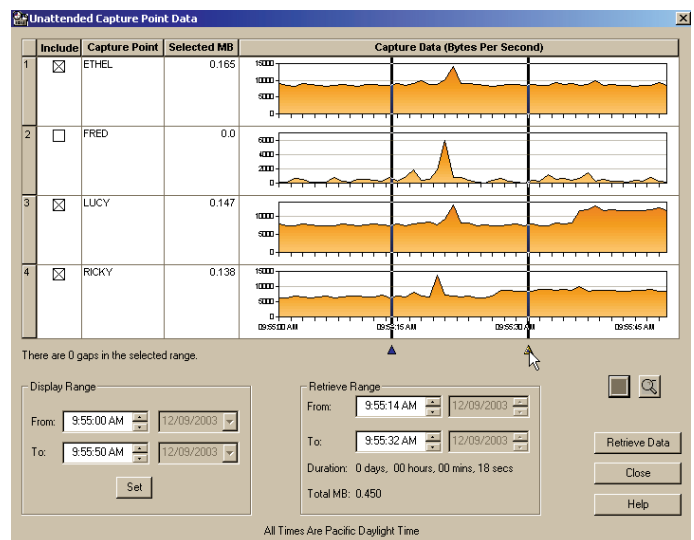
Application Participants

There were two nodes in the trace, Client (which was the client) and LJQA-W2KADV-GHO. Presented is a summary of their interaction.

Conversation	Offered Load	Total Bytes	Transit Time (ms)	Low	High	Bandwidth
Client		7,743		15	103	256 kbps
LJQA-W2KADV-GHO		12,030		15	315	

Offered load for each direction is shown throughout the duration of the measured interval. Transit time is shown for WAN conversations (note: transit time may include queuing time).

The Transaction Expert tool provides fully automated task analysis and reporting. It generates a comprehensive troubleshooting report for a selected task via a polished Microsoft Word document.



The Unattended Capture Manager allows you to see how much data has been captured and focuses you only on the trace data needed to troubleshoot the problem.

ApplicationVantage provides an easy-to-use certification process for the rollout of new or modified applications. Network administrators can capture specific application transactions for in-depth analysis of behavior across multiple tiers of a network in controlled environments. In this environment, individual mission-critical transactions can be analyzed and tweaked to ensure they are working optimally before the application is put into production.

WAN provisioning—made easy

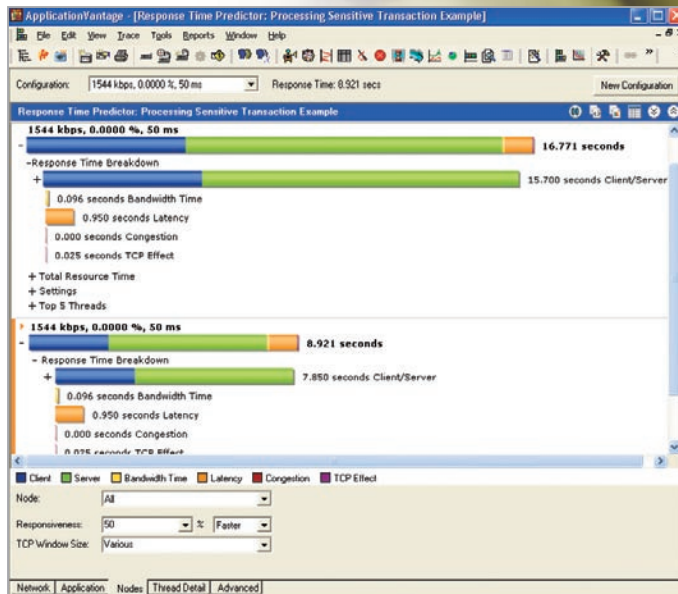
ApplicationVantage tells you how the production network will affect your new application. But what will happen to the performance of your network when the application is deployed to possibly hundreds of end users at a remote office?

The optional WAN Deployment Expert (WDE) module focuses on the dominant network budget metric: WAN bandwidth. It allows users to determine what impact hundreds of users will have on the infrastructure before rolling out a new application. With WDE, users can use the previously captured tasks in ApplicationVantage to quickly build typical workload scenarios of users at remote branch offices. From there, they can help ensure the new application will be productive the first time it's rolled out.

Delivering on the Service-level Management promise

With the emergence of Service-level Management, application performance has become measurable, and IT managers are now fiscally responsible for guaranteeing that applications and networks provide optimal performance. In addition, the IT department is often tasked with setting up SLAs, but has little data on which to establish realistic and attainable performance goals for business-critical transactions.

The ApplicationVantage Response Time Predictor (RTP) helps you establish realistic and attainable end-user response time and service-level goals, as well as make cost-effective decisions concerning WAN provisioning. And, when using the Sweep feature, you can determine at what point adding bandwidth will not improve performance.



Using the Response Time Predictor, you can establish realistic SLAs as well as see the effects of changing network, application, node and thread detail parameters on end-user response times.

For more details about ApplicationVantage, such as supported application and data sources, please visit the web site below and select Product Previews and then Performance Troubleshooting.

To learn more about Vantage, visit www.compuware.com/vantage

Compuware products and professional services—delivering IT value

Compuware Corporation (NASDAQ: CPWR) maximizes the value IT brings to the business by helping CIOs more effectively manage the business of IT. Compuware solutions accelerate the development, improve the quality and enhance the performance of critical business systems while enabling CIOs to align and govern the entire IT portfolio, increasing efficiency, cost control and employee productivity throughout the IT organization. Founded in 1973, Compuware serves the world's leading IT organizations, including 95 percent of the Fortune 100 companies. Learn more about Compuware at www.compuware.com.

Compuware Corporation Corporate Headquarters
One Campus Martius
Detroit, MI 48226

For regional and international office contacts, please visit our web site at www.compuware.com

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