

A complete measure of end-user experience

IT administrators and operations managers face an increasingly difficult challenge in ensuring applications are available and perform at acceptable levels. Compuware ClientVantage provides a solution: proactive service-level management that monitors application performance and the end-user experience.

Maintaining agreed levels of service for IT organizations today is often a backbreaking manual task. It starts with a phone call from a frustrated end user to the help desk. IT support staff must scour the network—applications, servers, databases—to identify when, where and why a slowdown occurred. This process can last for hours, even days. ClientVantage, part of the Compuware Vantage application service management suite, provides an alternative to hit-or-miss methods by getting to the right information automatically, even before problems affect application users. ClientVantage has three proven methods that address different kinds of critical end-user experience monitoring needs. These methods are complementary and often used in combination with one another and other Vantage solutions:

Agentless monitoring measures the response times experienced by every user of every application. It passively collects data from anywhere in your network from an easy-to-maintain, centralized location.

Active monitoring lets you gauge the response times for key business applications against established thresholds, using dedicated workstations replaying scripted transactions or scriptless application measurements. Active agents represent predictable users in a known environment performing measurements at scheduled intervals, therefore, providing “control” measurements.

Passive monitoring captures response times for specific transactions, monitors workstation health and captures detailed system information when workstation applications fail. You get hard data about the transaction and all other factors on the workstation that could affect the transaction. This information helps speed and focus problem analysis and correction.

With ClientVantage, you can:

- establish and maintain realistic service level agreements
- accelerate problem resolution and eliminate fingerprinting
- know the delivered and actual end-user response times
- prioritize performance problems based on the number of affected users
- monitor all users on a 24x7 basis
- monitor resource usage on end-user workstations
- diagnose and resolve application faults on end-user workstations
- pinpoint performance problems caused by inefficient application design
- notify key personnel automatically when there are service-level exceptions
- create comprehensive reports with real-time, baseline and trend statistics.

Measure availability proactively and precisely

Don't wait until end users begin reporting problems with application performance. ClientVantage provides proactive end-user monitoring with the ability to identify, notify and facilitate repair of applications before there is an impact on business processes. To get response time and availability measurements, ClientVantage replays key business transactions to replicate the actions and business processes of end users. Unlike other solutions, ClientVantage gives you the freedom to choose the transaction replay methodology that best fits your needs. Options include GUI- or protocol-based approaches from ClientVantage or third-party software.

Know your end user—and be able to prove it

Technical specialists usually start from scratch collecting performance data with methods that are time-consuming and ad hoc: using a manual stopwatch, or writing custom programs to record response times.

ClientVantage monitors critical transactions exactly as the end user executes them at a specific workstation, collecting and storing data including user ID, location, start of transaction, time completed or data stating the transaction did not complete. You also can set up an active transaction, so response time measurements are not influenced by non-critical applications on the workstation and do not include unnecessary user pauses and think time.

The active monitoring feature plays back the scripted transactions or scriptless application measurements, including all of the screen, keyboard and mouse interactions exactly as they were recorded initially. IT managers can prove to end users how the response time was measured and verify whether recorded transactions realistically simulate actual user behavior.

Agentless monitoring, on the other hand, passively collects data from a switch port or tap anywhere on your network using an Agentless Monitoring Device (AMD). The AMD delivers web page performance information to ClientVantage.

Agentless monitoring allows you to see all users—internal workers, remote workers, business partners and customers—on a 24x7 basis. And, because of its passive nature, agentless monitoring introduces no additional load to the application infrastructure and the AMD requires minimal administrative support.

Expand your agentless monitoring solution

The Vantage Analysis Server (VAS) complements the integration of an agentless monitoring solution by focusing analysis on overall web-site performance. In addition to the traditional Vantage business-model entities (application, location, transaction and role), VAS examines web-page delivery performance by location, as well as the hierarchy of Internet topology or connection speed. In each of these perspectives, VAS presents user information in context of actual user names.

To speed the understanding of performance bottlenecks, VAS ties end-user service metrics to network performance characteristics. Interactive reports provide near real-time visibility of all user traffic for monitored web sites. VAS recognizes and counts all real web-site users. VAS shows page load time, server time, HTTP response time, redirect time, loss rate, RTT and realized bandwidth associated with web-page performance. A graphical web-site activity map enhances

presentation for complex web sites, showing which servers deliver which applications and URLs, as well as the performance they provide and their overall usage.

For deeper analysis, the Vantage Advanced Web Diagnostics Server (AWDS) provides detailed web-page and business transaction performance insight. Capabilities include diagnostics that help troubleshoot specific user problems and diagram web-page delivery time, showing timings for each individual web object. For rapid fault domain isolation, AWDS builds an analytical model of the web-site performance to find systemic problems that cause HTTP-based application performance degradation. It then quantifies the impact and severity in clear terms. This helps IT to focus on addressing those web-site problems that are most severe, as well as assigning the right person to the job.

Get an end-to-end view of web transaction performance

ClientVantage quickly identifies web pages suffering from long server-processing times. Both agent-based and agentless end-user monitoring solutions link to complete server-side visibility provided by Vantage Analyzer, Compuware’s deep-dive performance analysis solution for .NET and Java. With Vantage Analyzer, it’s easy to drill down and see the performance of the thread responsible for serving a particular web page. Further object and method-level analysis tells you exactly where the server spent time serving a page and which back-end systems and operations slowed down the processing of the end user’s request. The result? An end-to-end view of web transaction performance unmatched in the industry.

Enterprise Dashboard					
	Client Availability	Client Performance	Network	Server	User Impact (Max / Current)
Applications					
SAP	●	●	●	●	256 / 248
CRM	●	●	●	●	308 / 28
MS Exchange	●	●	●	●	620 / 550
Corp Intranet	●	●	●	●	420 / 390
Locations					
New York	●	●	●	●	605 / 492
London	●	●	●	●	120 / 15
Shanghai	●	●	●	●	220 / 218
Sydney	●	●	●	●	108 / 96

The Enterprise Dashboard displays performance and availability indicators for critical applications, locations and supporting infrastructure monitored by Vantage. It also provides insight into the number of users affected by performance and availability problems so you can quickly determine its impact on the business and prioritize troubleshooting efforts.

Home Website Custom Reports Report Tools Settings Help Logout

URL Performance Overview - Oct02/2006 12:00 AM EDT

Applications Servers URLs Locations Reporting Groups

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URL Name	Pages	Client Volume	Server Volume	Users	Number of Hits	Slow Pages	Performance	Affected Users	Page Load Time	Page Size	Pages Stopped	Errors
https://iboltsandthin...ScriptLibrary/its.htm	21.3 k	17.9 MB	43.5 MB	2.23 k	21.5 k	24	99.9%	20	404 ms	1.67 KB	107	721
http://iboltsandthin...proc=ProcessNewsPage	6.03 k	27.9 MB	90.5 MB	2.19 k	32.3 k	117	90.2%	09	2.54 s	13.1 KB	25	731
https://iboltsandthin...ScriptLibrary/its.htm	0.07 k	6.30 MB	29.6 MB	2.19 k	8.12 k	0	99.9%	0	374 ms	3.5 KB	0	941
https://iboltsandthin...Web/GuestWorks.bot	4.7 k	37.2 MB	200 MB	1.91 k	50.5 k	1,041	77.0%	192	5.55 s	36 KB	347	303
https://iboltsandthin...geDrivers/MainPS.asp	29 k	27.8 MB	173 MB	1.75 k	29 k	192	99.4%	na	1.95 s	5.68 KB	10	1,271
https://iboltsandthin...com/	8.32 k	54.9 MB	205 MB	1.64 k	74.7 k	449	99.4%	na	1.95 s	5.68 KB	10	1,271
https://iboltsandthin...com/View.html	8.48 k	5.5 MB	2.3 MB	1.8 k	8.48 k	0	100%	0	10	10	0	0
https://iboltsandthin...oc=ProcessTransaction	7.98 k	94.4 MB	192 MB	1.55 k	43 k	195	97.4%	130	3.21 s	23.7 KB	81	595
https://iboltsandthin...proc=ProcessSearch	11.8 k	43.9 MB	220 MB	1.48 k	41 k	255	97.6%	145	2.28 s	17.4 KB	32	818
https://iboltsandthin...oc=ProcessPolicyView	8.23 k	48.2 MB	238 MB	1.44 k	45 k	440	95.2%	225	4.08 s	24.4 KB	87	711

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The URL Performance Overview highlights performance problems for the busiest URLs, supplemented with usage, performance and availability metrics, including the number of users.

Prioritize based on impact

ClientVantage delivers real insight into the business impact of performance problems in the context of applications and locations. It provides the number of users affected by availability and performance problems. With this powerful data, you can prioritize troubleshooting tasks more effectively and better align IT with the needs of the business.

Trend for early problem detection

ClientVantage makes it easy to assess and address performance problems as they emerge. The Client-Network-Server (CNS) Trend Report shows how much time transactions spend on each system component, and reveals how well an application interacts with its infrastructure as the rate of transactions

executing increases. With this information, you can track transactions over time and resolve performance problems long before they impact end users.

Get the broader picture of application performance

Analyzing performance problems across diverse, distributed environments is complicated. With so much monitoring and performance alerting data to sift through, it's difficult to grasp the larger picture of performance problems in terms of scope, impact and priority. ClientVantage makes it easy for management to assess and address performance problems with high-level management views:

The Performance Summary views allow you to tailor performance information into a format that provides a high-level view of what's happening across your enterprise. With

a glance, you can determine where you need to focus troubleshooting efforts and quickly assign the right person to the job.

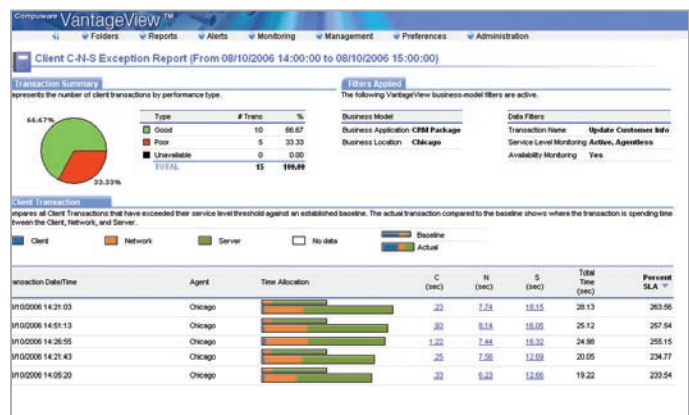
Interactive Heat Charts let managers view summary information that highlights performance data according to application, location, transaction, designated user roles or specified time frames. Allowing managers to focus performance data on specific areas helps them quickly drill down on problems, determine their scope and impact, and identify where troubleshooting resources should focus their efforts first.

Get to the root cause of performance problems

The many tiers of computing resources—the application, the user's workstation, the multiple network layers and the various servers—make it tough to find the originating problem. Also,



The Interactive Heat Chart summarizes performance data according to application, location, transaction, designated user roles and time frames to help you determine the scope and impact of problems quickly.



The CNS Exception report compares transaction performance measurements to a baseline profile and lists possible causes of poor transaction performance.

the fact that performance degradation may be sporadic leaves you without enough data to determine the problem. ClientVantage's advanced diagnostic capabilities help uncover problems at the source.

Performance comparison reporting

The CNS Exception report isolates a problem to the client machine, the network segments or the first-tier servers used in a transaction. The report compares transaction performance measurements to a baseline profile and provides a list of possible causes for poor performance.

The report highlights the actual time and percent change from the baseline times for the client, network and server components.

Automatic latency detection

This technology tracks a transaction for the full length of its execution and measures actual network latency for each segment. The detailed latency report highlights which

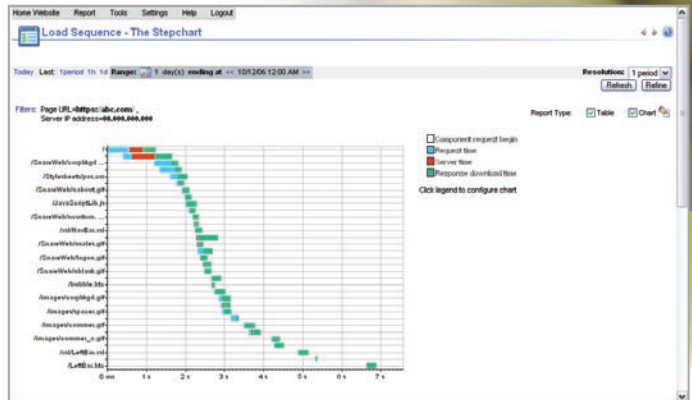
network segments experienced spikes in latency. You identify the segment causing poor performance without needing resource-intensive Sniffer trace tools.

Transaction diagnostic capture

The transaction diagnostic capture feature continuously captures detailed point-in-time diagnostic data and creates troubleshooting reports whenever a transaction exceeds the performance threshold value. It can initiate a transaction communication trace, analyzing the data and creating a report if the service level exceeds its threshold. These reports answer the question: Is it the client, the network, the server or the application?

Resource monitoring

The resource monitoring capability captures critical performance measurements on the end-user workstation, including CPU utilization, disk storage, memory usage



The Slow Page Load view analyzes web-page performance so you can get to the source of the problem, such as web-page design.

and network activity. When predefined thresholds are exceeded, ClientVantage notifies the appropriate IT personnel by pager, e-mail, SNMP or text message.

Application fault monitoring

Whenever an application fails, the application fault monitoring capability automatically captures point-in-time workstation

information, including operating system data, environment variables and program statement information for internally written programs. The alerting mechanism shares the data with support technicians so they can diagnose the problem, regardless if it's the application, workstation resources or the operating system.

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

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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.

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