

# Mastering Management for the Next-Generation IT Environment

A Three-part Series from SolarWinds

Part Two: Augmenting Server  
Monitoring with Application  
Performance Monitoring

# Augmenting Server Monitoring with Application Performance Monitoring

Server performance monitoring is a standard enterprise service; application monitoring, however, usually consists of isolated load-testing events to evaluate application performance prior to production deployment or during some performance crisis. Ongoing application performance monitoring gives you that special insight into an application's performance over time and not just during evaluations or other one-shot events. Application monitoring needs to provide a total perspective of how network, server, and storage performance affect application performance. This guide illustrates how a comprehensive monitoring solution simplifies complex application monitoring with an integrated approach.

## An Application Is More than Just a TCP Listener

From your experience with other monitoring tools, you might believe that application monitoring means periodically checking an application's TCP port. This periodic "ping" of an application's TCP port only checks for its up or down status but gives you no information about its performance or whether the application is working correctly. Contemporary applications are more complicated and require more depth of information.

### Application Monitoring Defined

Application monitoring consists of the standard TCP port status but adds connectivity, availability, queues, resources used, logs, events, and transactions. It also includes performance from a user's perspective, which is driven by round-trip (from the application to the user and back) response times.

In addition, the definition of application doesn't stop at compiled applications or commercial software. You can monitor the performance of your own custom Windows, Linux, or UNIX scripts.

## Bursting the Bubble with an Integrated Approach

Applications are no longer the isolated, single-tiered listeners that they once were. How many data-backed applications do you run on your network? How many applications are multi-tiered? Count the number of your multi-tiered applications that run on multiple systems and possibly in multiple locations. Old monitoring schemes no longer apply to these complex environments. A holistic approach is necessary to capture the total performance picture.

## Finding the Bottlenecks

This holistic monitoring approach examines statistical data from the application, the operating system (OS), the physical or virtual system, and the host system (in the case of virtualized systems). Locating application bottlenecks involves focusing on each entity in this chain individually, which is possible using this holistic application view approach.

A classic performance-monitoring tool collects and reports data from a server perspective but leaves you empty when it comes to pinpointing the source of the bottlenecks that plague your users. An application monitoring tool that's tightly woven into the performance fabric of your systems and network provides the ability to locate hot spots, bottlenecks, and failures as they occur in real time.

## Looking at the Application from the User's Perspective

SolarWinds' Orion Application Performance Monitor (APM) features User-Experience Monitors that measure performance from an end user's perspective. No longer do you have to wait for emailed or phoned-in complaints with vague descriptions of "It's slow" or "The application isn't working correctly." User-Experience Monitors allow you to collect objective performance data, to isolate application performance problems, to observe infrastructure-related performance bottlenecks, and to rule-out end user-owned connectivity or performance issues.

## Server Performance: A Good Place to Start

By knowing what your underlying infrastructure is doing, you can bypass hours of dead-end troubleshooting and avoid downtime. The traditional method of finding application performance bottlenecks is initially to play the blame game. Application support techs blame the hardware and systems administrators blame the code. Each side of the argument blames the other because neither is seeing the full performance picture.

When considering commercial application performance, server infrastructure performance should be examined carefully as the reasonable source of the perceived bottlenecks. Fortunately, for users of Orion APM, it won't take long to separate hardware-caused slowdowns from application-caused complications.

## It's the Network, Isn't It?

Application users often blame "the network" as the source of slow performance. To measure network performance, Orion APM extends the network performance monitors of the Network Performance Monitor (NPM). The purpose of integrated monitoring is to allow systems administrators, network administrators, and developers to quickly view, isolate, diagnose, and repair problems before users are impacted.

## Advanced Application Monitoring Scenarios

Orion APM offers you the ability to configure advanced and complex alerts. For example, if you want to know about certain sustained conditions or correlated events, you can set up those events to alert you when the conditions are met. You can set up complex conditions that, when certain conditions are met, external applications launch. You can also choose from and set up multiple alert delivery methods, including email, paging, SNMP traps, or syslog messages.

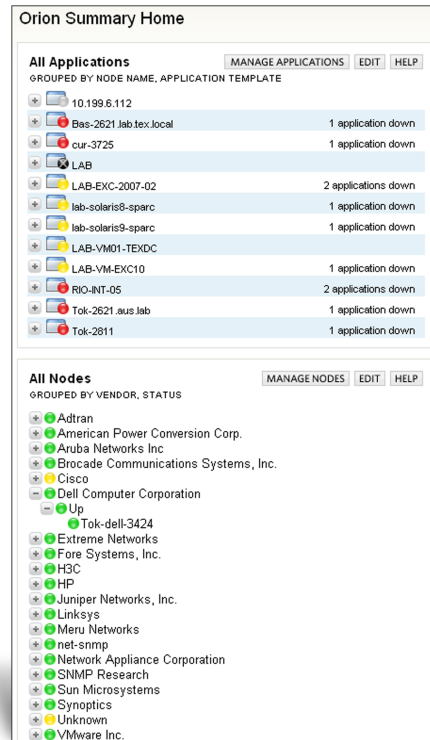


Figure 1: Orion APM single view of applications and servers

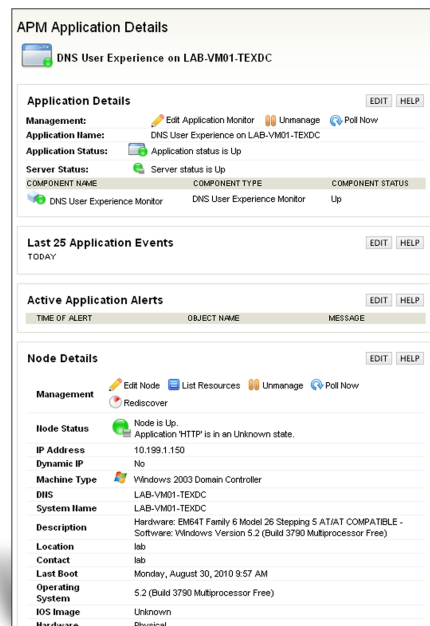


Figure 2: Orion APM single view of network monitor (DNS user experience) and server details

## Map that App for Better Visibility into Performance

You can create visual application maps that provide you with a comprehensive picture of your network and application health. From the 10,000-foot view, you can visualize what your applications are doing by location. A geographic representation of your applications, network connectivity, and underlying infrastructure brings a single window view of performance into focus. From a single building to the entire world, Orion APM gives you the best possible view of your applications' performance.

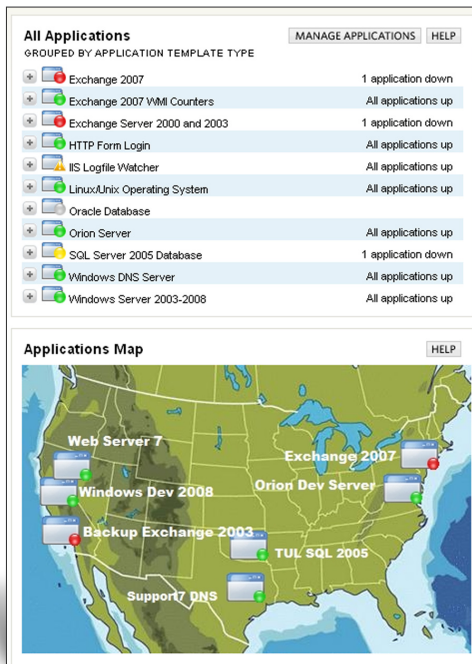


Figure 3: Orion APM application map

### Graphically Analyze Your Applications

Not only can you view your global application performance, you can analyze the performance, visually, of your applications. Using drag and drop, you can analyze applications by dropping them into their locations. This allows you to watch the performance of all applications on a particular server system or in a single location.

### Drill Down on Problem Areas

If you find a problem, you can drill down on it to discover which service is experiencing problems and isolate it to a specific server. For example, if your Austin Exchange Server shows that an application is down, you can drill down on that specific location, find the errant system, and locate the service that has stopped for quick remediation.

### Check the Netflow

Orion APM enables you to correlate network traffic to applications by looking at ports, source IPs, destination IPs, and protocols. This type of network flow analysis is another integrated feature of Orion APM.

### Multi-Tiered Applications Monitoring

Online ordering systems, call tracking software, Help desk applications, and billing systems are examples of multi-tiered applications. Multi-tiered applications generally leverage multiple servers in multiple locations and often use multiple configurations. How do you effectively monitor these complex applications and their supporting hardware and handle multiple configurations? The answer, unlike the problem, is simple. Orion APM monitors all of the above with ease and with an intuitive interface.

And, best of all, your performance will never be inhibited by another agent running on your host. Orion APM, and all SolarWinds' monitoring products, is agentless. This is good news for enterprises that run and manage thousands of servers. No agent means that nothing is required of your system or systems administrators to join the pool of monitored systems.

### Multiple Servers

You can monitor multiple servers that all serve single applications. Exchange Server, for example, can reside on several server systems and you can monitor the performance of each plus the performance of the email applications being served.

### Multiple Locations

You can monitor applications in multiple physical locations using the mapping capability built into Orion APM. The geographic at-a-glance view gives you insight into which sites and services might be suffering outages.

### Multiple Configurations

Integrated config management with the [Network Configuration Manager](#) tool makes configuration changes easy to perform, back up, document, and track. You can make changes to live configurations and observe their effects in real time without connecting to your systems via telnet, SSH, or other remote protocols.

## Summary

Empowering your application performance monitoring with Orion APM brings new visibility into your complex application environment. From host OS to server to the application itself, you'll be able to measure the performance of your entire application pathway. Additionally, you have script monitors, WMI performance monitors, an application discovery engine, Windows event log monitors, and the standard array of network services and ports monitors.

SolarWinds also offers several additional [free tools](#), such as Exchange Monitor, Real-time NetFlow Analyzer, WMI Monitor, and more. To take [APM](#) or any of SolarWinds tools for a free 30-day test drive, you'll find all available products and tools on the [downloads](#) page.

### Also read:

[Part 1 of Mastering Management for the Next-Generation IT Environment: Monitoring Critical Aspects of your Virtual Infrastructure](#)

[Part 3 of Mastering Management for the Next-Generation IT Environment: Unify Visibility into the Virtual and Physical Data Center with a Single Solution](#)

## IT Management Inspired by You.

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#### Key Facts:

- Founded in 2006, has seen 100% growth year on year
- Home Office Security Clearance to work on sensitive Government sites
- Platinum Partner Status for SolarWinds with SCP Accredited Engineers
- 1<sup>st</sup> & 2<sup>nd</sup> Line telephone and email technical support offered to customers
- Provides more training and consultancy than any other SolarWinds partner
- Offsite classroom training facilities, full range of onsite courses offered
- Installation, Customisation and post Consultancy SolarWinds services provided.

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