Diagnostics

Find and fix application performance issues—fast.

Product Highlights

Business results are directly tied to application performance. But how do you quickly identify the root cause of performance issues in the face of overwhelming complexity?

Micro Focus® Diagnostic software monitors application transaction flows from end to end—from the user through to back-end systems—so you can quickly identify, isolate, and remediate any performance issue that impacts the user experience. It also provides a common tool that facilitates collaboration among application teams across the entire application lifecycle, so you can release and maintain blazing-fast applications. Simply put, it simplifies the task of finding and fixing the toughest application performance problems.

Key Features

- Tracks transaction flow through service tiers, so you can isolate problems down to the line of code
- Quickly identifies application bottlenecks across multiple OS platforms, browsers, databases, middleware, etc.
- Supports any device, anywhere, for any user
- Shares diagnostic information across DevOps teams for analysis and quick resolution
- Monitors application performance in on-premises, virtual, and cloud environments
- Protects data with auto-healing mechanism by dynamically reassigning probes when mediators go down

Business Value

- Protects your brand and revenue against performance issues
- Delivers a superior user experience by finding the toughest performance problems fast
- Reduces MTTR and operational costs
- Supports and facilitates DevOps processes that keep the business agile
- Provides a business context for diagnostic information so you can see the impact on business services and make decisions based on business priorities

Figure 1. When an application suffers performance issues, quickly identify the slowest requests, correlate with load and memory consumption.

Figure 2. Diagnostics can display reports in the modern UI of AppPulse trace.
Did You Know?

26% of application teams still release applications without validating the user experience.

72% of application teams first learn about user experience issues through user complaints.

Key Benefits
Diagnostics monitors the application under test by installing an agent, a probe, into the application. The probe performs instrumentation on the compiled code. For example, in the Java Virtual Machine (JVM), it instruments the Java byte codes. In the simplest of terms, it inserts start and stop timers around method calls and reports this information together with other metadata gleaned from the JVM to the diagnostics mediator. For large enterprise environments, multiple probes can report to one mediator and multiple mediators can be controlled by one diagnostics controller. Diagnostics can run in standalone mode or can be integrated with Micro Focus APM or Micro Focus LoadRunner or Micro Focus Performance Center.

When integrated to APM, multiple mediators can report to one APM gateway server. This distributed architecture enables Diagnostics to work with very large enterprise environments and capture the data from hundreds of Java, .Net, or PHP-based applications.

Diagnostics can visualize the performance of physical and virtual infrastructure on which the applications run, business and synthetic transactions, SOA services, SAP applications, queue managers, CICS, application servers, resources, collection leaks, and many others.

Key Features
Diagnostics allows application teams to measure, focus, and improve application performance, no matter where or when issues occur. Teams can monitor applications in production and provide performance information to DevOps, troubleshoot and recover from business-disrupting application failures, and manage performance collaboratively across the levels of the organization.

Transaction Performance Management
Diagnostics provides a full latency breakdown for a business transaction—so you can see where time is being spent, understand the full transaction path, isolate performance issues at the code level, and capture interesting instances for troubleshooting. You can also customize how server requests are distinguished from each other, enabling teams to decide, for example, if parameter values passed into a servlet are relevant or redundant.

Performance Monitoring Needs Addressed by Diagnostics

Transaction Path Health
With Diagnostics, you can discover and display the real-time topology of application components. You can correctly represent relationships of components deployed in traditional IT, public, and private cloud environments, and you can drill down to isolate application problems in components or links between components.

Fast Problem Isolation
Isolation flows provided by Diagnostics lead you to the root cause of application performance problems, and you can navigate from summary information to the offending method in just a few clicks. You can also create custom dashboards in just minutes so you can share key information with both executives and technical staff.

Performance Trend and Load Information
Diagnostics makes it easy to visualize performance trends on high-level entities (such as a database) or low-level entities (such as a specific request). You can easily view and control overhead in production, quantify the load on individual components and investigate performance issues, and discover latency breakdowns in application flows so that remediation actions can be prioritized.

Tracing across Tiers and Processes
You can trace the performance of web services across tiers with Diagnostics. Cross-VM activity is correlated and shown in a single call profile. Similarly, message activity can be traced across processes, and transactions can be traced across public clouds. These capabilities enable application teams to see the big picture of performance issues, get visibility into exceptions, isolate specific tiers or processes that are problematic, and make remediation accordingly.

Figure 3. Diagnostics

End User Aware
End-to-End Visibility
Analytics
Streamlined Troubleshooting
Dependency Mapping

Figure 4. Diagnostics data from load tests is stored offline and can be viewed in the LoadRunner offline analysis tool.
Drill-Downs from Monitoring Solutions
Diagnostics works with other monitoring solutions to give you fine granularity into performance issues while preserving the context. For example, you can receive drill-down information from Real User Monitoring (RUM) so you can investigate slow requests from the end-user perspective, and you can accept drill-down data from Business Process Monitoring (BPM) or Synthetic Monitoring so you can see the actual server activities associated with a business process.

Auto-Healing for Data Protection
A probe auto-assignment feature helps to lessen the loss of data collected by the probe in the event a mediator goes down. When a mediator assigned to a probe does not come up within a specified time, a new mediator is assigned to the probe, thereby protecting against data loss. In the event of a mediator overload, the probe can be assigned to a different mediator.

Diagnostics for Performance Testers
Diagnostics monitors application performance during load testing and performance testing. You can get a real-time view of application performance with the same diagnostics interface used in production, and integration with LoadRunner and Performance Center provides post-test performance analysis.

Diagnostics for Developers
Diagnostics provides several convenient features and functions for developers, including:
- Free diagnostics profiler
  - In-depth profiling for a single Java VM
  - Remote access to application server through Diagnostics UI
- Automatic leak pinpointing
  - Unique approach finds leaks with very low overhead
- Thread state analyzer
  - Quick visual isolation of thread issues
  - Display of state distribution percentage by thread over time
- JUnit run comparisons
  - Performance results shown in unit tests when resolving difficult performance problems
- Why are my transactions slow?
- What is hiding behind “server time,” which shows up in my EUM reports?

Auto-Healing for Data Protection
A probe auto-assignment feature helps to lessen the loss of data collected by the probe in the event a mediator goes down. When a mediator assigned to a probe does not come up within a specified time, a new mediator is assigned to the probe, thereby protecting against data loss. In the event of a mediator overload, the probe can be assigned to a different mediator.

Diagnostics for Performance Testers
Diagnostics monitors application performance during load testing and performance testing. You can get a real-time view of application performance with the same diagnostics interface used in production, and integration with LoadRunner and Performance Center provides post-test performance analysis.

Diagnostics for Developers
Diagnostics provides several convenient features and functions for developers, including:
- Free diagnostics profiler
  - In-depth profiling for a single Java VM
  - Remote access to application server through Diagnostics UI
- Automatic leak pinpointing
  - Unique approach finds leaks with very low overhead
- Thread state analyzer
  - Quick visual isolation of thread issues
  - Display of state distribution percentage by thread over time
- JUnit run comparisons
  - Performance results shown in unit tests when resolving difficult performance problems
- Why are my transactions slow?
- What is hiding behind “server time,” which shows up in my EUM reports?

Diagnostics: an Integral Part of the APM Suite
In addition to the transaction tracing and diagnostics capabilities delivered by Diagnostics, the APM Suite provides.

Business Process Monitoring (Synthetic Monitoring)
APM Suite helps you find performance or availability issue before your users do—and lowers your MTTR.

Real User Monitoring
With APM Suite application teams can observe and record performance data about actual live user transactions within applications to determine whether these applications are meeting the users’ performance and availability expectations.

Challenge:
Provide superb user experience to differentiate business service in a competitive industry

Solution:
APM Suite for Mobile
Results:

- 80% to 90% reduction in problem occurrence
- Visibility into key business transactions
- Ability to monitor multichannel service delivery

Systems Monitoring
APM Suite collects information about the systems on which the application lives—servers, operating systems, networks, storage, third-party services, etc.—and correlates that infrastructure information with application performance to faster and more easily isolate the root cause of problems.

Learn More At
www.microfocus.com/diagnostics