Geneos: real-time performance management and monitoring for the financial markets

As business increasingly relies on technology driving ever more complex business-critical applications and systems, it is essential that the associated support infrastructure runs smoothly. Both individual and multiple elements need to be monitored in real time to deliver the end-to-end performance that business needs, and ensure any issues can be addressed before they have a business impact. Getting an end-to-end view using traditional system-management tools is difficult, expensive and time consuming to implement. Geneos is different.

Geneos provides integrated, proactive, real-time monitoring for every aspect of your environment: servers, applications, network hardware and important network interfaces, as well as application behaviours and workflow characteristics such as transaction latency—in a single solution. Geneos acquires and manages the real-time performance values required to trigger easy-to-customise business logic that allows you to create meaningful alerts before issues begin to develop, and route them to the right people. Finally, Geneos provides extensive tools that allow identification, diagnosis, notification and rectification of problems.

This powerful monitoring is coupled with a light footprint and rapid implementation schedule. You can begin monitoring your whole infrastructure in days rather than months. Additionally, incremental monitoring for new system deployments can be added in hours instead of weeks, allowing your monitoring solution to evolve with your systems. Implemented correctly, this can provide an organisation with a rapid return on investment.

Geneos draws on ITRS extensive worldwide experience of providing real-time performance management and system monitoring solutions for high-volume, time-critical applications in the financial services sector.

Geneos Provides

- key performance metrics that enable financial institutions to identify and reduce transaction latency, as well as improve system performance and availability
- a complete end-to-end view of the systems supporting each line of business, covering all application and infrastructure elements
- out-of-the-box monitoring for almost a hundred different infrastructure elements, including core financial market trading applications, services and execution venues
- meaningful alerts that can initiate automatic interventions or staff communications sent by email, SMS or PDA
- rapid implementation - days not months
- easy customisation, allowing monitoring to be quickly extended to additional applications, servers, gateways and network infrastructure
- minimal impact on system performance, thanks to a small software footprint and light network traffic overhead
- an independent control system for validating compliance and management-reporting processes
- the ability to raise automated incident-tracking tickets for incident management systems

Business Benefits

Multiple views of trading and banking application performance management, highlighting potential problems on an application and departmental basis, helping operation teams to establish best practice.

An electronic audit trail detailing performance changes and service use characteristics by line of business, allowing business managers to look back and compare trading performance against underlying system capacity and throughput.

Consistent enterprise wide management framework enabling operations teams to increase their span of control and allocate more time to improving the reliability of the underlying applications.

Management information that allows managers to build an overall real-time view of performance by asset class or client across underlying trading and risk systems.
How does Geneos benefit the people in your organisation?

Financial institutions depend heavily on the smooth running of highly complex IT systems. If a trading application begins to perform slowly, stops working altogether or a connection to a market is lost, the impact on the bottom line can be significant. Geneos helps firms to keep their systems functioning and performing within agreed parameters, while minimising system management costs.

**Business managers**

*Geneos allows business managers to:*
- protect the company reputation
- remove unnecessary cost from essential processes
- make informed timely decisions based upon trusted metrics
- create and maintain business value
- be constantly aware of the operational status of the business and its infrastructure

**Compliance and risk managers**

*Geneos allows risk managers and compliance teams to:*
- independently verify the integrity of processes and data sources
- obtain advance warning of issues that may cause regulatory or risk issues, such as compliance reporting
- cross check data integrity via correlation of data sources

**System managers**

*Geneos allows system managers to:*
- provide the firm’s clients, as well as colleagues, with an immediate assessment of the impact of both internal system issues and failures elsewhere in the chain, such as an outage at an exchange or settlement organisation
- develop procurement and upgrade plans based upon real performance metrics
- perform systematic automated routine monitoring, allowing IT staff to concentrate on project work that adds business value
- establish which applications and services are cost effective

**Operational staff**

*Geneos allows operational staff to:*
- understand how a whole system or service is performing, end to end
- easily monitor the status of all the elements in the firm’s infrastructure, in real time, through a single system
- identify and address issues before they have an impact on overall system performance
- correlate key performance indicators to obtain a holistic view of individual, or groups of, systems
- quickly add incremental monitoring for new systems and applications
- initiate commands and launch scripts in a controlled manner at any level within the monitored infrastructure
- work with development teams to ensure that new applications can be incorporated into the monitoring environment
- provide metrics to support application development and performance enhancement
- perform post-mortem reviews of system issues
- providing independent evidence that compliance and risk processes have been completed correctly
Providing customers with valuable insight

NSX, a US exchange, has been able to increase trade volumes by a factor of three over a two-year period without having to increase the headcount in its operations support team, thanks to the efficient and effective monitoring provided by Geneos. Our solution has also played a key role in helping to improve the reliability, availability and serviceability of NSX’s services, and reduce latency to sub-millisecond levels.

A proprietary trading, market-making and brokerage house has been able to get more out of its limited support headcount by using Geneos to automate monitoring of its diverse trading and risk systems, which are running on Windows, Linux and Unix platforms. Geneos enables the trading firm to monitor a much wider range of systems in more depth, and to anticipate issues and deal with them before they affect trading operations. This frees up staff time for more productive activity that adds value to the business.

An investment bank that has used and deployed Geneos for many years was able to tell from monitoring its connections to a major exchange that the exchange was not only experiencing performance issues but was about to suffer a complete outage. The bank’s head of electronic trading was able to inform clients that the exchange was about to run into major problems 45 seconds ahead of the bank’s competitors and three minutes ahead of the public announcement by the exchange itself.

At the Gateway level, data can be consolidated to monitor end-to-end performance metrics such as transaction latency, failover capacity and straight-through-processing integrity.

As well as delivering proactive monitoring of systems in real time, Geneos provides historic data that can be used for:

- scenario testing and capacity planning
- event correlation, to identify early warning signs of system failure, so that new alerts can be created
- post-mortem review of system issues
- control systems providing independent evidence that compliance and risk processes have been completed correctly.

Rapidly deployed real time proactive system monitoring

Geneos uses a three-tier architecture to achieve this combination of powerful monitoring and light deployment footprint. The instrumentation tier consists of software agents called NetProbes, which typically sit on all monitored system nodes. These NetProbes report back on the value of each monitored item to the second tier, which consists of one or more Gateways.

Here, performance values are consolidated and then combined with client-defined business logic that allows meaningful alerts to be routed through email, SMS or PDAs to the most appropriate support resource. NetProbes keep network traffic to a minimum by only reporting changes in the item values.

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A visualisation layer provides both operational staff and users—such as trading floor IT management—with a customised dashboard that provides an overall view of the status of the environment and current alerts. A fully featured administration desktop provides operational staff with complete control of the management framework. This enables drill-down for more detail and facilitates taking appropriate corrective action. It also allows the user to specify which system components are to be monitored and when, where and how alerts should be sent.

Gateways incorporate a software distribution tool that allows NetProbes to be deployed automatically to nodes, allowing monitoring to be rolled out rapidly to thousands of infrastructure components. These NetProbes can be quickly customised to monitor specific elements, either by using out-of-the-box interfaces from ITRS known as plug-ins—for everything from servers, routers, operating systems and databases to finance-specific applications such as trading platforms and exchange gateways—or by using a developers’ kit that allows customers to rapidly implement monitoring for their own applications or system components.

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The way forward for performance management

As firms’ underlying application frameworks and supporting technology become increasingly complex, Geneos from ITRS provides real-time performance monitoring and management across complex infrastructures. It gives end to end visibility providing management with valuable insight into business process, system capacity and end to end trading capability. It delivers users with multiple real-time views of infrastructure and application performance highlighting potential problems down to departmental and component level; enabling firms to continually improve performance.

ITRS also offers a flexible implementation model that scales depending on the scope and depth of the system monitoring required reflecting variable business requirements across different enterprise types. It is designed to be a scalable solution with a light deployment footprint that supports rapid implementation which will get you up and running fast.

Contact us now to find out how ITRS Geneos can help you to quickly implement real-time proactive monitoring for your systems and applications.

About Us

ITRS is a leading provider of proactive real-time performance management and monitoring systems for global financial institutions. Our solutions are specifically designed to reduce service disruption, improve IT efficiency, and ensure that critical operational processes are completed as planned, protecting against both business reputation and trading risk.

Established in 1997 ITRS now has offices in London, New York and Hong Kong supporting over 600 installations in clients worldwide including brokers, exchanges, hedge funds and banks. ITRS client base includes 50 financial institutions, with eight of the top ten global investment banks choosing our solution. For more information visit www.itrsgroup.com or email information@itrsgroup.com.