



Verax NMS is a highly scalable IT service assurance solution for management and monitoring of networks, data centers and applications.

It reduces costs of IT service delivery, shortens downtimes and increases customer satisfaction levels through streamlining processes of business service management, problem detection and incident resolution.

CTEP

Critical Trial EndPoint (CTEP) is a leading provider of cutting edge EDC solutions for clinical trials in the pharmaceutical sector.

www.ctep.eu

About Verax NMS

Verax NMS is a highly scalable **IT service assurance** solution for management and monitoring of networks, data centers and applications featuring full FCAPS (fault, configuration, accounting, performance, security) functionality and network visualization using map services. Verax NMS **reduces costs of IT service delivery, shortens downtimes and increases customer satisfaction** through streamlining processes of business service management, problem detection and incident resolution.

For more information about Verax NMS, please visit our website: veraxsystems.com/en/products/nms



Clinical trial service assurance with the Verax Network Management System

BACKGROUND

CTEP is a leading provider of cutting edge EDC (electronic data capture) software services for clinical trials in the pharmaceutical sector. Their products are built and deployed using the **software as a service (SaaS)** model. In order to provide the services, CTEP operates a complex IT infrastructure distributed across two sites (Blanchardstown and Citywest) in Dublin. CTEP’s client list includes premiere brands such as Merck, Roche, Servier and others. Due to the importance of the software provided (data security and global availability), ensuring **24/7 availability** of the service is an absolute priority.

CHALLENGES

Monitoring of CTEP’s service requires an holistic approach: rather than scrutinizing the status of each component involved in providing the service, the monitoring should indicate whether the entire service is up or down (i.e. failure of some of the components does not automatically mean that the entire service becomes unavailable). Another challenge lies in the **complexity of IT infrastructure** involved, embracing: Windows and Linux servers, Oracle databases, J2EE application servers, IIS web servers and others. All of these elements are hosted by an external service provider. CTEP also required application specific monitoring such as memory consumption levels for particular processes and their acceptable levels.

REQUIREMENTS

Verax NMS was selected by CTEP as a monitoring tool for the following reasons:

- **Ease of use:** user friendly GUI, advanced visualization modes (such as business aspects), integrated maps that can be used by non-experts.
- **Rich sensor library** and performance counters including advanced features like application memory consumption and associated alarm thresholds.
- Syslog and SNMP event collection.
- Flexible, user-defined event correlation rules.
- **Openness, extensibility** and ability to address the **future needs** through: device plug-ins, scripted business rules and custom reports.
- **Integration and deployment** services provided with the product such as installation and application specific alarm tuning.

Element monitoring	
Availability	Capacity
<p>Sensors</p> <ul style="list-style-type: none"> • device/host specific: PING and SNMP • applications: JMX (including application specific JMX parameter query). • databases: JDBC (and SQL queries). • HTTP 	<p>Counters</p> <ul style="list-style-type: none"> • CPU (SNMP and WMI) • disc storage (SNMP and WMI) • memory (SNMP and WMI) • database parameters (SQL)

CASE STUDY

SOLUTION

The monitoring station has been located outside the hosting provider's premises. Linux and Oracle Express database have been selected as an operating platform. The deployment took place in the following stages:

- **Installation**, which was carried out remotely via the VPN.

- **Configuration** in which all the service components were discovered, inventoried and placed under NMS monitoring. At this stage the NMS started to monitor the availability of the devices, applications, application servers, databases as well as memory, CPU and disc storage consumption. The availability is monitored by 40 sensors and the resource consumption by 50 counters. The availability of devices is examined by SNMP and PING, the availability of applications – by JMX and the availability of data bases by JDBC. Counters for measuring CPU, disc storage and memory consumption use the SNMP protocol.

- **Fine-tuning** in which additional sensors were turned on and application specific sensitivity thresholds and correlation rules were specified. Once this work was completed, the system administrators started to become notified about of **abnormal behavior only**.

The entire work was carried out remotely by Verax Systems (VPN) and the role of CTEP was limited to specifying requirements, specific Apache Tomcat server configuration and enabling communication through named ports only.

BUSINESS BENEFITS

The implementation of Verax NMS at CTEP resulted in the following business benefits:

- **Reduction of downtime time and cost** by detecting potential problems before they affect the service.

- **Reduction of issue resolution costs** by preventing problems before they have an impact on the service.

- IT service improvement and increase of customer satisfaction by reducing the time required for problem resolution.

- **Quicker problem analysis** via event correlations, notifications and automated business logic.

- Gathering of infrastructure business intelligence (e.g. resource utilization) input in order to facilitate **better service infrastructure planning**.

- Automated **calculation of service metrics** for availability and performance.

- Ability to demonstrate **uptime metrics and SLA compliance** to service users.

SUMMARY

The whole process of providing CTEP with fine-tuned and optimized system took only 12 working days. All CTEP requirements were fully met. The future plans for extensions include:

- Advanced alarms, events and notifications.

- Measurements of **application user experience**.

- Monitoring of service running in the Amazon **EC2 environment**.

- Instrumenting CTEP applications via custom JMX attributes and adding their monitoring in the Verax NMS. This would enable CTEP to monitor items like number of logged-in but inactive users, class access statistics and others.

LEARN MORE

In order to learn more about Verax NMS or view the Verax NMS demo, please visit us on the Internet at:

veraxsystems.com/en/products/nms.



Verax Systems Corp. is a provider of software enabling end-to-end IT & Telco service delivery, assurance and compliance. We offer a comprehensive set of integrated applications covering the entire lifecycle from service definition through provisioning and monitoring to billing.

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