effective performance monitoring in SAP environments

Key challenges—and how CA Nimsoft Monitor helps address them
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When organizations adopt SAP, many of their most critical business services run on this platform. Thus, ensuring optimal performance is a vital requirement, but one that can be difficult to achieve given the complexity and scale of today’s SAP deployments. This paper looks at the key capabilities needed to effectively track and optimize performance in SAP environments, and it reveals how CA Nimsoft Monitor for SAP delivers on these critical requirements.

Introduction

Customer relationships. Financials. Enterprise resources. Human capital. These are the areas that represent the very core of any business, and these are the types of business applications running on SAP today.

Organizations invest significant resources in procuring and deploying SAP, and every day, employees, partners, and customers rely on those systems to be running optimally. When these systems go down, employee productivity, customer satisfaction, partner trust, and the bottom line can all take a significant hit.

Customers adopt SAP because it helps bring sophistication, automation, and efficiency to core business operations. However, when it comes to monitoring and optimizing performance in SAP environments, administrators must often resort to manual, labor-intensive efforts to spot and correct issues. Consequently, there are too many outages, they last too long, and they hurt the business too much.

In this paper, we’ll look at the key obstacles SAP administrators confront as they seek to spot and remediate performance issues. We’ll then outline the key capabilities administrators need in order to meet these challenges, and, finally, we’ll show how CA Nimsoft Monitor addresses these needs.

SAP monitoring challenges

SAP deployments represent complex ecosystems that are comprised of a number of disparate elements and multiple tiers. Each element must be performing optimally to ensure responsive, reliable service levels. If an issue is reported, administrators have to determine whether the problem stems from the client, network, application server, database, or specific SAP modules or components, such as the ERP Central Component (ECC).

This complexity and interdependency can pose challenges for even the most experienced SAP administrators. For example, a seemingly insignificant dip in performance in one of the application
tiers can result in system-wide degradation. A user in one location may be experiencing acceptable performance, while a user in another location may not be. At any time, a user can submit an inquiry that can bring the entire platform to its knees.

**Limitations of CCMS**

In many organizations that run SAP, administrators rely on the SAP Computer Center Management System (CCMS) for performance monitoring. The CCMS collects information from the entire SAP environment, including SAP systems, databases, servers, and networks. The system has built-in monitoring and trace tools that provide extensive information, but all too often the result is an overwhelming amount of data that is difficult to sift through—particularly when there’s an issue that administrators are scrambling to detect and address. Consequently, rather than gaining the insights they need to proactively manage SAP performance, administrators relying on CCMS continue to operate in a tactical, firefighting mode.

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**Key monitoring requirements in SAP environments**

To effectively understand and optimize performance in SAP environments, administrators need the following capabilities:

- **Insights for tracking the right metrics.** While a lot of metrics can be tracked, it is difficult for administrators to understand which ones are the key performance indicators (KPIs) that need to be monitored most closely. Further, administrators need to be able to understand how system performance relates to business performance, so they can prioritize investments and efforts appropriately.

- **Comprehensive, detailed coverage.** Administrators need to be able to monitor the entire SAP ecosystem and any infrastructure elements that system relies on. This needs to include an ability to break down response times of complex processes by specific tiers and application components. Further, administrators need this comprehensive monitoring coverage to be detailed as well, so, at a glance, they can pinpoint in which tier or area an issue resides, and then quickly drill down to get device-level details.

- **Useful thresholds.** In order to be notified of problems early, it is vital to establish realistic thresholds, so that, if they are exceeded, administrators can get alerted and preempt potential issues before they have an impact on end user performance.

- **Historical perspective.** Administrators need to be able to have historical monitoring data and intuitive reporting so they can understand and predict usage cycles. For example, if activity spikes occur due to end of month or financial close activities, administrators need intuitive, detailed views of prior spikes, so they can accurately predict, plan for, and accommodate those spikes when they next occur.

- **End user response monitoring.** In the end, what matters most is the quality of service end users actually experience. That’s why it’s vital to be able to track performance from the end user’s perspective. This includes having capabilities for measuring response times for users in different geographic regions.
Figure A.

To effectively troubleshoot issues within complex SAP environments, administrators need to be able to have a comprehensive view of relevant performance metrics from across all the tiers and infrastructure elements.

How CA Nimsoft Monitor for SAP addresses requirements

CA Nimsoft Monitor for SAP offers the comprehensive capabilities your organization needs to realize optimal performance from all your SAP-powered business services. CA Nimsoft Monitor gives your administrators the extensive monitoring coverage they need to effectively track the entire SAP infrastructure—and all the associated infrastructure elements SAP relies on to perform optimally. Further, it offers the sophisticated insights that enable your team to take full advantage of the monitoring data captured, so you can respond to issues more quickly, and gain the insights needed to plan for and preempt issues before they have an impact on users.

**KPI and threshold knowledge base leverages best practices**

In order to help ensure administrators are tracking the most important metrics, CA Nimsoft Monitor comes with an embedded, updateable knowledge base of KPIs to monitor—and their associated thresholds. These KPIs and thresholds reflect industry best practices—they have been defined by SAP experts and are based on hundreds of SAP deployments in a range of business environments. The most relevant performance indicators have been chosen, and cover the entire SAP system: jobs, IDOCS, updates, dumps, spools, backup, enqueue, database, and more. Further, the knowledge base is easily updated, so you can add new KPIs or adjust thresholds as your SAP deployment evolves.
CA Nimsoft Monitor offers a single platform that can capture monitoring data from across network, storage, operating system, database, and application tiers, including tracking of Java and ABAP instances, URL response times, and more. CA Nimsoft Monitor leverages the data generated by the CCMS, including:

- SAP specific metrics, such as SAP services, buffer metrics, and communications.
- CCMS-specific information, including CCMS alerts and monitoring trees.
- Infrastructure metrics, such as status of databases, file and operating systems, and application servers.
- Security metrics, including security audit log and security-related messages in the system log.

However, because the CCMS represents a single point of failure, CA Nimsoft Monitor can also supplement this monitoring data through its own data collection. These measurements can be collected without requiring an agent to be installed on the target device.

CA Nimsoft Monitor is a comprehensive platform that can track not only SAP environments, but virtually all your cloud services and data center components—including servers, applications, databases, network devices, converged infrastructure, virtualization platforms, and more.

End user response
CA Nimsoft Monitor can also execute synthetic transactions at user-defined intervals and provide detailed measurements of each step of a given process. If any step of a transaction meets or exceeds a threshold, CA Nimsoft Monitor can automatically generate an alert and even have appropriate personnel notified via SMS or email. CA Nimsoft Monitor can measure end user response times across all common SAP architectures, including client/server, Citrix terminal server, and Web.
Revealing response times by tier
CA Nimsoft Monitor places SAP monitoring data within the context of the entire SAP environment, and it supplements this data with proactive monitoring tests that track the entire service delivery chain and various end-user locations and activities.

With the solution’s end-to-end monitoring capabilities, application response times can be broken down across the multiple tiers of the SAP architecture. Through flexible graphing capabilities within the CA Nimsoft Monitor console, you can easily view relative response times of each aspect of the environment. If performance degrades in a particular tier, CA Nimsoft Monitor helps pinpoint the culprit immediately.

Efficient deployment and administration
CA Nimsoft Monitor enables your organization to enjoy maximum benefits from SAP monitoring, while minimizing the time and effort required to deploy and administer the system. CA Nimsoft Monitor offers a number of features that make SAP monitoring fast, easy, and efficient:

• **Streamlined, unified administration.** CA Nimsoft Monitor provides automated access to all KPIs within SAP environments, so you don’t have to log into multiple locations and manually run and analyze SAP performance traces.

• **Familiar service modeling.** CA Nimsoft’s automated discovery and service modeling of the SAP environment is designed to align closely with the CCMS model, so that SAP administrators will be in familiar territory when using CA Nimsoft Monitor.

• **Tightly integrated.** CA Nimsoft Monitor uses standard SAP-approved communication protocols (SAP Remote Function Calls) to retrieve performance information. In addition, CA Nimsoft Monitor can efficiently leverage the data gathered through the SAPControl Web service.

• **Flexible, efficient architecture.** CA Nimsoft Monitor is designed to operate in demanding, high-volume production environments. The solution offers both agentless and agent-based data collection for infrastructure monitoring. The solution’s agentless monitoring leverages the SAP Java connector for remote data collection. CA Nimsoft Monitor agents are typically deployed for optimizing data collection across the network and for monitoring specific locales. All agents are autonomous and can perform any and all tests. The solution’s server-side software includes self-monitoring capabilities and automates remote agent configuration and updates.

• **Powerful configuration templates.** CA Nimsoft Monitor offers powerful templating capabilities that make it faster and easier to set up and modify monitoring settings. For example, CA Nimsoft Monitor provides templates for end-user monitoring by location, by access networks, and other components.

• **Secure remote monitoring.** CA Nimsoft Monitor connects to the SAP system with a dedicated SAP authorization profile. This, along with the controls found in Nimsoft Unified Management Portal, enables authorized internal staff or third-party resources to monitor SAP performance from anywhere in the world—without risking unauthorized access to confidential data.
Intuitive insights
Not only does CA Nimsoft Monitor offer comprehensive monitoring coverage, but it provides the sophisticated presentation capabilities that ensure you make the most of this data. CA Nimsoft Monitor provides service-oriented views of SAP application performance and infrastructure health. CA Nimsoft Monitor offers a number of different presentation options, including executive dashboards, geography-based views, operator consoles, toolbar notifications, and reports.

Historical views
CA Nimsoft Monitor stores all measurement, baseline, and threshold data in an embedded performance management database (PMDB), according to the policies you’ve established. Because CA Nimsoft Monitor stores performance data over time, you gain an effective baseline of normal SAP performance. This stored data also makes it easy to troubleshoot intermittent problems, determine trends, and improve capacity planning. This database is optimized for the SAP environment and includes a published schema for efficient export to a SQL database.

Sophisticated SAP alert management
CA Nimsoft Monitor continuously monitors SAP alerts and integrates alert status into the service model. As a result, the solution offers added value through service impact correlation, and it enables administrators to establish baselines and trend alerts. SAP alerts can be assigned, tracked, and cleared from the CA Nimsoft Monitor operator console.

Real-time reports
CA Nimsoft Monitor includes real-time reporting capabilities that are configurable by user community. Any measurement or set of measurements displayed in a graph may be quickly saved as a report. Reports are updated in real time and may be emailed and displayed via the Web according to user domain and policy. Following are a few examples of the reports CA Nimsoft Monitor provides:

- Dialog response time by transaction type and location.
- SAP application server health and activity level.
- Business application performance, including availability, usage, and response time.
- Transaction reports, covering response time by location, transactions per second, memory usage, and more.
- Service level agreements, revealing compliance levels by business process.

Intelligence for setting effective thresholds
Using statistical calculations based on the performance metrics gathered, CA Nimsoft Monitor generates baselines at all levels of the service model, including service, transaction, SAP application server, database, systems, and network. To each baseline, multi-tier thresholds can be applied that provide alerting of performance deviations relative to normal conditions by time of day and day of week. Thresholds can also be set to observe the relative change of the baseline over time, which can help reveal performance and usage trends.
Conclusion

Ensuring high performance levels and uptime in SAP environments is an increasingly critical objective. However, given the complexity of these environments, it is challenging for administrators to understand, let alone optimize the performance users actually receive on a daily basis. CA Nimsoft Monitor gives you the capabilities you need to proactively manage your SAP environments, offering context, visualization, and control for the entire service value chain.

For more information, please visit ca.com/nimsoft