E-BOOK

Understanding the value and importance of monitoring and managing SAP

SUMMARY

AppDynamics Performance Monitoring for SAP® Solutions offers organizations in-depth visibility and observability for SAP applications across the entire landscape.

It offers superior, industry-leading capabilities that include:

- Use of native interfaces to read raw activity and performance data directly from SAP runtimes.
- Code-level visibility into SAP applications via native ABAP-based implementation.
- Ability to correlate transactions and activities from end to end across SAP and non-SAP environments.
- Superior automation to speed responses to issues and problems, improve efficiency and productivity.
- Collector tracks SAP business process documents (sales orders, delivery docs, invoices and more) and feeds into a dashboard for constant monitoring.

Every company nowadays is a software company of some kind, at least in part. This situation reflects modern realities inherent in digital transformation efforts as organizations seek to extract value and advantage from their data. That data flows ceaselessly from ongoing business activities, supply chain management and more, creating a huge monitoring challenge.

Ideally, a business clearly understands and manages its business processes and activities. These include processes surrounding a business's technical and functional operations, like those associated with finance, control, sales and distribution, materials management, human resources, business intelligence, customer relationship management, production planning and more. We can understand that each such technical or functional area of operations is an important data source. What we may not understand as readily is that monitoring and managing each of these areas is a vital component of business success — and a powerful deterrent to potential issues or profitability barriers that might otherwise emerge from one or more of them. In particular, managing and monitoring the software used to collect, correlate and report on the data associated with technical and functional operations is key.

Introduction to SAP

Founded in Waldorf, Germany, in 1972, SAP was originally known as **S**ystem **A**nalysis **P**rogram Development ("**S**ystemanlyse **P**rogrammentwicklung," in German). This company practically invented the category of enterprise software known as Enterprise Resource Planning, aka ERP, in the context of handling all the transactions necessary to plan, acquire materials and then build, ship and bill for products of all kinds. Over the past five decades, in fact, SAP's software tools have expanded to cover nearly all technical and functional operation areas in which any enterprise might find itself involved, and to help such enterprises model, manage, conduct and optimize related business processes.

Why businesses rely on SAP

Simply put, SAP has become an essential part of the enterprise software landscape over the past 50 years because it works, and because its costs (both direct and indirect) are more than offset by the efficiencies, advantages, and improvements in profitability and productivity it delivers in tangible and measurable ways. For many organizations, working with SAP is how "business gets done" because it enables them to grow and adapt to ever-changing conditions and take advantage of technological advances and improvements in a timely fashion.

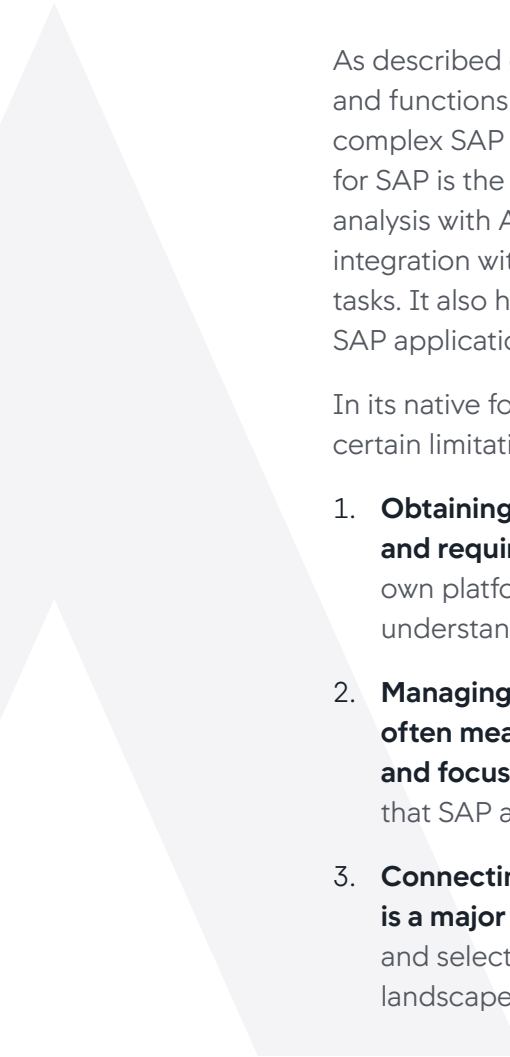## A typical "SAP environment"

Modern SAP deployments typically include some combination of on-prem, cloud and/or hybrid ERP components, with strong ongoing impetus toward increasingly cloud-first or cloud-forward implementations. Of the many possible functional areas for which SAP offers modules described in the preceding section, a typical implementation will involve at least the following: Finance & Control (FICO), Production Planning (PP), Material Management (MM), Sales & Distribution (SD), Human Resources (HR), Customer Relationship Management (CRM), SAP's custom development support via its Business Application Software Integration System (BASIS) and Advanced Business Application Management (ABAP).

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In general, the more familiar and comfortable an enterprise gets with SAP's approach to handling business processes, the more likely it is to deploy additional modules to bring it under the SAP umbrella. Incremental learning curves and costs diminish with increased experience and usage.

Understanding primary SAP challenges

Once an enterprise commits to and deploys SAP applications and modules, that environment quickly becomes mission-critical. This makes SAP performance management vital, yet for many organizations, this is a complex and difficult task. That's where Cisco AppDynamics Performance Monitoring for SAP Solutions comes into play. It's designed to help its users drive improved uptime and performance for SAP solutions using ABAP.

As described earlier, SAP applications cover a wide range of capabilities and functions across the entire spectrum of business operations. For complex SAP deployments, AppDynamics Performance Monitoring for SAP is the only solution in the marketplace that delivers root cause analysis with ABAP code-level visibility. As such, its SAP-certified integration with SAP/S4 HANA and SAP NetWeaver simplifies everyday tasks. It also helps keep track of complex landscapes where numerous SAP applications are deployed.

In its native form, using only built-in tools and consoles, SAP is subject to certain limitations for three important core concerns:

1. **Obtaining code-level visibility into problems and issues is difficult and requires working inside multiple SAP applications**, each with its own platforms, management tools and consoles to find, identify and understand what's going on.

2. **Managing and identifying important system alerts and alarms often means working through a huge volume of items to filter out and focus on instances with real significance** amidst all the noise that SAP applications emit during normal operation.

3. **Connecting SAP issues to core business transactions and activities is a major task** because of the need to trace, correlate, prioritize and select actionable issues across the complex SAP application landscape.

Benefits of a single source for SAP truth

The most significant benefit of AppDynamics Performance Monitoring for SAP Solutions is that it serves as a single holistic source for SAP insight and information. By using the ABAP interface built into all SAP applications to acquire, analyze, filter and report on SAP problems and issues, it automatically eliminates excess noise (reducing alert volumes by up to 97% as a result), provides correlations across multiple SAP applications, and delivers code-level visibility into underlying root causes of problems and issues. With SAP applications as important to business success as they are, accurate and timely responses to problems and performance issues can help companies avoid expensive delays or downtime. Equally important, this can help companies make the most of their SAP applications' capabilities to boost productivity and profitability.

Cost of Downtime and Performance Lags

According to the Americas' SAP Users' Group (ASUG), the cost of downtime for SAP applications — and by extension, the cost of performance lags — can be considerable. In a 2021 story on modernizing SAP, ASUG cites the Ponemon Institute to put the cost of data center downtime at an average of $10,000 per minute. Think about it: That's $600,000 per hour, and $14.4 million per day. Given that Ponemon's analysis dates to 2019, and the ever-increasing cost for downtime and delays, those numbers are now most likely understated.

SAP applications play a mission-critical role in enabling enterprises to efficiently conduct business. When there is a slowdown or performance degradation, such applications have an outsized impact on the bottom line. Unplanned downtime, or ongoing performance delays, can thus exert significant negative impacts on the whole business.

According to the ASUG study, the real goal is to schedule downtime so that update schedules and interruptions don't impact users, batch jobs or connected systems, either upstream or downstream. AppDynamics Performance Monitoring for SAP Solutions helps enterprises reduce or eliminate unplanned downtime. It does so through better code-level visibility, enabling a quicker response through a single source of truth, and through automated, proactive tools that act fast to prevent or limit impacts as and when problems or issues are detected.

Indeed, AppDynamics Performance Monitoring for SAP Solutions directly addresses primary pain points for enterprises using SAP applications. First and foremost, it provides vital visibility into the entire SAP application landscape, often hampered by limited visibility into complex environments. Its holistic and integrated view of business processes from end to end provides quick correlation and root cause analysis and identification for both SAP and non-SAP applications. This reduces elongated resolution times and limits unplanned downtime or performance delays. Perhaps most importantly, Cisco AppDynamics eliminates excessive manual time and effort involved in managing SAP application alerts by using health rules to filter out noise and reduce alert volumes.

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Overall, AppDynamics Performance Monitoring for SAP Solutions supplies insight across the entire SAP application landscape. It also enables improved (and faster) performance management. Its holistic view helps enterprises migrate legacy SAP applications into the cloud (hybrid or otherwise) to deliver improved user experiences (works for SAP/S4 HANA, ECC, and more using a "lift and shift" approach). And enterprises can use it to make the most of what SAP brings to complex, multi-cloud IT infrastructures.

How Cisco AppDynamics delivers SAP observability

Because of its complexity and reach, establishing oversight and control for your SAP landscape is vital. As the old saying goes, "If you can't measure it, you can't manage it." In a nutshell, this explains why employing tools and automation to see what's going on across all SAP applications is the right point of departure to gaining control, handling issues and problems and working toward optimization and improvement.

What's Your Current Status with SAP?

Too many organizations rely on separate, disjointed tools to monitor dependent systems. Alternatively, they must use siloed SAP monitoring tools outside the rest of their IP stack so their view of what's going on occurs outside the general network/system performance context.

This means such separate monitoring tools require manually correlating SAP performance data to business events *ad hoc* on a case-by-case basis. Worse yet, it may require postmortems after problems pop up (with all the delays or downtime that might intervene). Ouch!

Ideally organizations need to monitor, measure and react to *everything*, including all SAP applications. Without a holistic perspective, organizations suffer from a lack of understanding across the entire SAP landscape, and the valuable resources it can provide to make or break your business. This is where AppDynamics Performance Monitoring for SAP Solutions excels!

It's no exaggeration to say that when your SAP landscape sneezes, the whole business catches cold. That's because SAP is the beating heart for business operations. SAP applications drive, control and handle key functional areas across the organization, including customers, suppliers, vendors, materials, logistics, employees and more. This makes across-the-board monitoring and management for all SAP applications critical. Such monitoring also helps avoid damaging and costly application failures, resolve performance issues and ultimately boost business productivity and profitability.

Cisco AppDynamics delivers deep visibility into all applications, both SAP and non-SAP collectively, across the entire enterprise, down to the code level. This brings unsurpassed, real-time insight into service availability and performance. It also provides powerful, relevant business context so that organizations can improve upon the status quo.

Indeed, AppDynamics Performance Monitoring for SAP Solutions excels at SAP observability, with activity and business performance metrics across the entire SAP landscape. Its monitoring capabilities empower SAP, and IT teams to achieve operational improvements thanks to powerful AI/ML capabilities, proactive monitoring, deep and wide visibility, business intelligence, and tool consolidation. Key to visibility is a toolset for monitoring and investigating ABAP code in all SAP applications, along with a real-time view into how applications interact. Cisco AppDynamics provides transaction and code-level visibility via the ABAP agent (see **Figure 1**), and collects performance metrics, logs and events. That's how AppDynamics Performance Monitoring for SAP Solutions allows organizations to monitor core SAP business processes to gain unmatched business insights and performance of business transactions in underlying SAP systems.
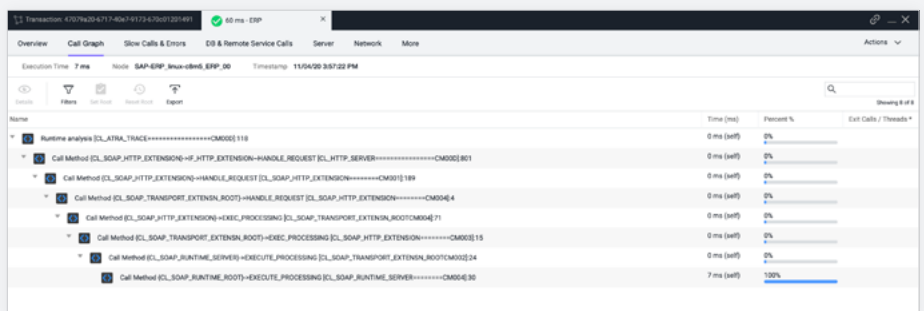

Figure 1: The AppDynamics ABAP agent dashboard

Cisco AppDynamics vs. SAP, New Relic and Dynatrace

The following comparison with leading competitors shows how AppDynamics Performance Monitoring for SAP Solutions stacks up against other vendors' offerings—specifically those from SAP (Solution Manager), New Relic (NRM) and Dynatrace.

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01 SAP Solution Manager

SAP Solution Manager (aka "SolMan") is included with SAP applications as the native, built-in management toolset. AppDynamics Performance Monitoring for SAP Solutions doesn't replace SolMan. Rather, it provides a richer, deeper understanding of the entire runtime landscape of which SAP is only a part. By adding AppDynamics Performance Monitoring for SAP Solutions into the mix, the overall view of your SAP landscape improves dramatically, helping you resolve issues faster, plan easier migrations and watch business journeys at a whole new level.

Overall, SolMan lacks the depth and integration that AppDynamics Performance Monitoring for SAP Solutions puts into play. Most significantly, its code-level insight into critical SAP functions. This includes system KPIs, and the most relevant metrics organizations need to understand, control and improve their SAP landscape. With its end-to-end holistic view of transactions that encompass SAP and non-SAP systems alike, AppDynamics Performance Monitoring for SAP Solutions provides organizations with what's needed for any SAP investment.

02 New Relic

Announced in July 2022 as "New Relic Monitoring for SAP Solutions," this competitive solution claims to be "Agentless." That claim is, however, offset by the requirement for at least one ABAP system to serve as a central repository for New Relic's data collection, analysis and reporting capabilities. It also requires a software add-on to collect, transform and send telemetry data from monitored systems to that centralized management node.

Thus, the New Relic agentless solution adds nothing not already present on monitored SAP systems. In fact, it requires installation, setup and ongoing maintenance. Indeed, New Relic suggests using SolMan on the ABAP system, where its add-on gets installed and maintained.

Looking under the hood, New Relic uses only SAP metrics and presents them in different forms. This tool synthesizes SAP metrics with other agent-based metrics to add elements missing from SolMan. Thus, it's merely an extension of what SolMan does on its own.

Overall, New Relic sounds interesting, but the real difference comes from how AppDynamics Performance Monitoring for SAP Solutions extracts metrics from SAP. On the one hand, New Relic simply takes SAP metrics as reported, then captures and presents them in a different form. Cisco AppDynamics, written using native ABAP code, reads raw data directly from the SAP runtime environment, looks more deeply into performance and code, and provides the ability to create KPIs as the customer wishes. New Relic lacks these capabilities. These include bank transfers (BTs), results data (RTs), flowmaps and Cisco AppDynamics unique Business IQ (BiQ) for monitoring outputs and activities from SAP business processes (see **Figure 2**).
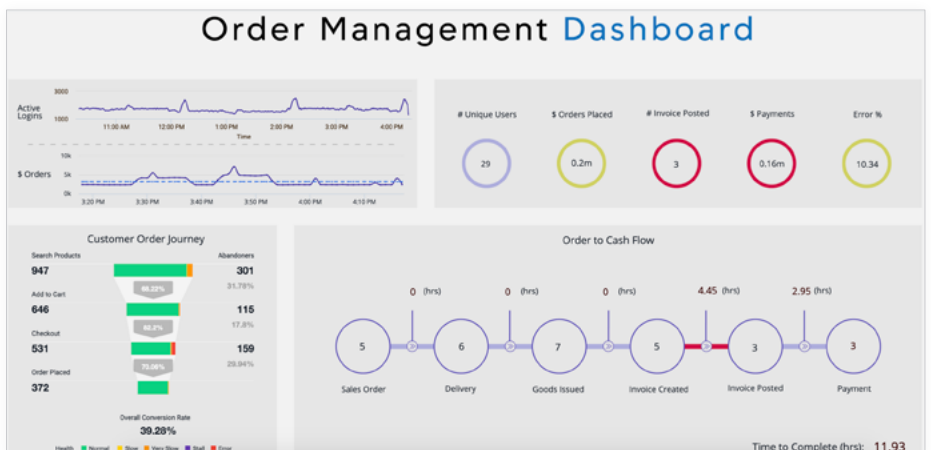

Figure 2: AppDynamics Business IQ ties SAP application performance to corresponding SAP business scenarios

03 Dynatrace

Agentless monitoring comes as an extension of the Dynatrace ActiveGate product. It calls SAP through Remote Function Calls (RFCs) to retrieve standard metrics that SAP routinely collects in its own runtime environment. Dynatrace adds a runtime UI module (RUM) for SAP to provide a GUI that gathers transaction-level metrics.

Separately, Dynatrace OneAgent software provides information about the underlying infrastructure on the hosts where SAP processes run (and requires installing OneAgent on each such host). Complete SAP monitoring requires knowing what's happening in the foreground (dialog), background and at the hardware level (on-prem and in the cloud) on all systems that SAP communicates with. AppDynamics Performance Monitoring for SAP Solutions provides all these things as well.

Dynatrace focuses instead on dialog processes. It can provide hardware monitoring, but lacks visibility into other key elements, including background jobs, IDocs monitoring and lock management. This can stymie monitoring of critical events such as record updates erroring out. By comparison, AppDynamics Performance Monitoring for SAP Solutions agent-based monitoring shows more than what's already in SolMan and Dynatrace. It's both broad and deep, providing dynamic baselining, code-level visibility, links to business transactions, change monitoring for key configuration items and analytics integration.

Dynatrace suffers from the following deficiencies that Cisco AppDynamics addresses:

- No dynamic baselines means false alerts when a system runs at normal heavy usage.
- No ABAP code-level visibility means root cause analysis for code takes much longer.
- No links to business transactions means Dynatrace cannot monitor nor manage system issue impacts.
- No information from SAP dialog transactions in analytics means Dynatrace cannot deliver insights about how SAP is behaving and how it's doing.
- No configuration tracking means a valuable source of information and insight into incident causes and fixes is absent.

AppDynamics Performance Monitoring for SAP Solutions has no such deficiencies and can do all these things. AppDynamics Performance Monitoring for SAP Solutions is the most comprehensive SAP monitoring and management solution available in the marketplace.

Making the case for Cisco AppDynamics

AppDynamics Performance Monitoring for SAP Solutions gives enterprises the most complete performance diagnostics and the most detailed and useful insights into the overall health of their SAP landscapes. Performance anomalies are detected in real-time across SAP and non-SAP components, providing support teams with information they need to resolve issues before they impact business processes and end users.

When AppDynamics Performance Monitoring for SAP Solutions is aligned to the SAP ecosystem, all IT and Ops teams gain visibility and oversight. These groups can then work together to troubleshoot and improve SAP application performance as it relates to business processes and activities (e.g., order to cash, procure to pay). Similarly, closely aligning SAP applications to business processes makes reporting more business-friendly and intelligible. This helps get more people — including developers, stakeholders, sales and support staff and other key players — involved in the task of monitoring and optimizing SAP application performance.

In a typical enterprise, technology stacks grow more complex daily, but the goals of your business remain simple: Serve your customers and protect your bottom line. Cisco AppDynamics is the industry's only SAP landscape-wide monitoring solution that provides comprehensive observability and business performance metrics across complex landscapes.

Want to see Cisco AppDynamics and SAP in action? Schedule an online demo **right now.**