

Bring Enhanced Central Monitoring to Your SAP System with Free, New CCMS Agent Technology

The ever-increasing number of IT solutions and components presents a challenge to the teams responsible for monitoring. System landscapes are much more varied, and the demands for suitable monitoring tools are constantly increasing. Administrators are looking to tools that can centrally monitor large, heterogeneous system landscapes, notify the responsible person automatically in case of errors, provide support when administrators are solving problems, and allow new components to be included in the monitoring process.

SAP has provided the basis for a central monitoring tool with the CCMS Alert Monitoring Infrastructure as of SAP R/3 4.0, and has continuously developed it ever since. In SAP Web Application Server 6.10, the CCMS Alert Monitoring Infrastructure provides its full range of functions, but is now enhanced by new CCMS agent technology available as free, downloadable software. The result is more extensive, convenient monitoring of your IT environment and all of the components — SAP and non-SAP — that are part of it.

How SAP Supports System Monitoring

In the CCMS Alert Monitoring Infrastructure delivered by SAP, data collection

programs monitor various components. Each program stores the data in a “monitoring segment” (part of the shared memory of each server) using either a running SAP instance or a running agent.

A dedicated central monitoring system, or CEN, accesses the locally collected data through a defined ABAP interface on an SAP instance, or through agent technology on any server on which the agent is installed and active. With the CEN, administrators now have a central overview for monitoring and managing the entire mySAP.com e-business platform from a single console, without logging on to each and every component.

To access this information, SAP provides two monitors for visual display. The CCMS Alert Monitor (transaction RZ20) is the expert monitor currently available for administrators. It provides a customizable, system-wide overview of the system landscape. From RZ20, you have a guided connection to remote systems in case of an alert.

The CCMS Alert Monitoring Infrastructure also acts as an information source for the second monitor, the SAP Solution Manager.¹ This new

¹ For more information on the SAP Solution Manager, see the article “Equip Your mySAP.com Landscape with a Central Platform for Monitoring and Support with the New SAP Solution Manager” by Anja Wolf and Eithne Devine in this issue of *SAP Insider*, and online at www.SAPinsider.com.

New Column

Infrastructure Insights



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platform for support and services analyzes and presents system monitoring data in a modern, graphical frontend geared particularly to business processes.

In **Figure 1**, the CCMS Alert Monitor lists the results from the log file monitoring of the file `dev_rout` located on the non-SAP host P60090 with matching pattern “Failed.” It also lists CPU information and the monitored processes (`saposcol` and `saprouter`) of non-SAP host P60090, and the CPU information of SAP systems DEV and QAS (with two instances).

New Possibilities for Central Monitoring

With the new CCMS agent software, SAP makes central monitoring possible where it didn't exist before — and enhances the monitoring tasks that are currently available. Previously you could

not centrally monitor SAP R/3 3.x systems and non-SAP components, and in SAP R/3 4.x systems, you may have seen additional data bottlenecks while opening a monitor in CEN at times of poor performance. The new CCMS agent concept provides ways to access both SAP and non-SAP systems, and helps prevent those bottlenecks.

CCMS agents are stand-alone processes that act as RFC servers to the CEN. As such, they provide a reliable interface to the shared memory segment. There are three CCMS agents — **SAPCCMSR**, **SAPCCM4X**, and **SAPCM3X** — and each has a specific monitoring function (see **Table 1**) designed for a particular system, whether SAP or non-SAP, as shown in **Figure 2**. Advantages of the agent concept include:

✓ Faster Data Delivery

The monitoring segment contains all SAP data from the CCMS Alert Monitoring Infrastructure. This data can be transferred by SAPCCM4X agents without occupying an SAP work process. As a result, your monitors in the CEN will open much faster.

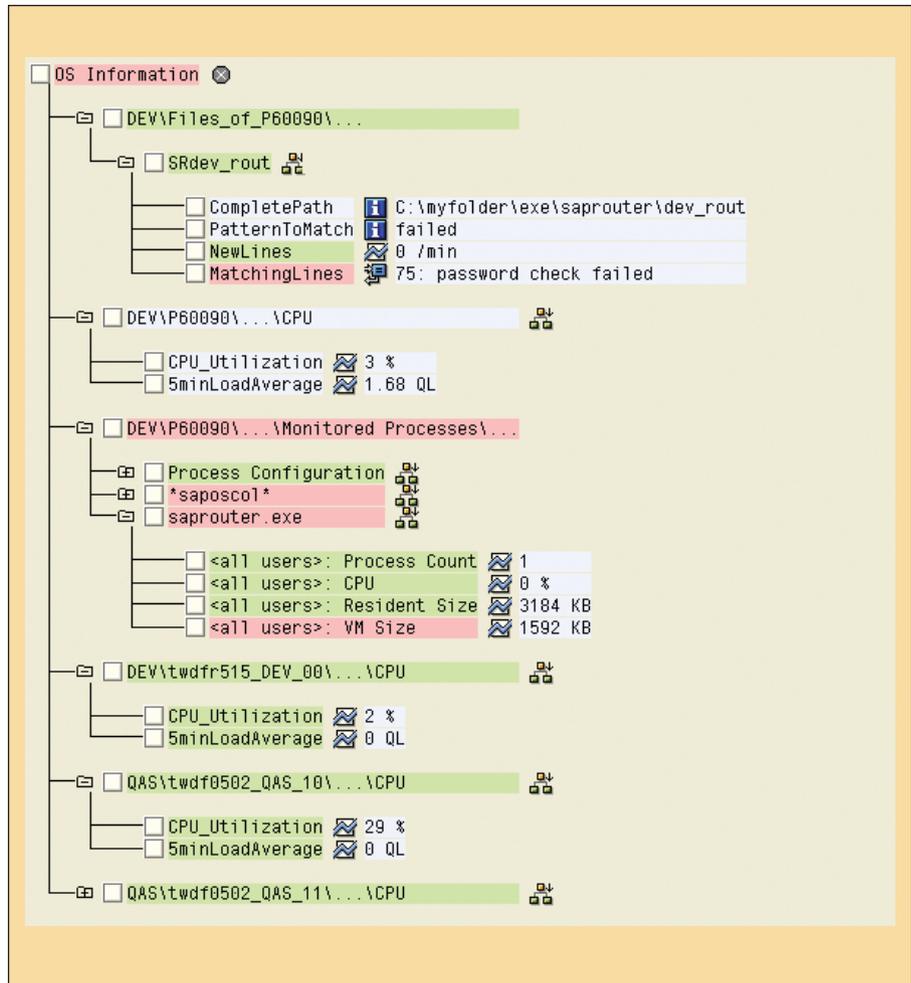


Figure 1 Information from CCMS Alert Monitor (RZ20)

| Agent | For | Features |
|-----------------|--|--|
| SAPCCMSR | Components with no active SAP instance | This agent determines the fill level of the file system as well as detailed operating system information. Log files can be analyzed using external applications. For example, the Internet Transaction Server (ITS) is completely connected through the SAPCCMSR agent. |
| SAPCCM4X | SAP Basis 4.x or higher | This agent centralizes and therefore improves the monitoring of SAP systems with SAP Basis 4.x or higher. The central monitoring system requires at least SAP Basis 4.6C. The SAPCCM4X agent provides an alternative connection route to the monitoring information in the shared memory of an SAP instance. Since this alternative connection route does not require a free work process in order for CEN to access data from SAP R/3 4.x systems, the connection route is independent of any of the error status or performance problems of the monitored SAP instance, and is therefore more robust. |
| SAPCM3X | SAP Basis 3.x | The agent allows you to centrally monitor SAP instances with SAP Basis 3.x, even though SAP R/3 3.x systems do not have their own CCMS Alert Monitoring Infrastructure. SAPCM3X accesses the dispatcher's old shared memory segment. |

Table 1 The Three CCMS Agents at a Glance

☑ Detailed Operating System Data

On systems without SAP Basis, the SAPCCMSR agent can return the SAPOsCol² data (e.g., CPU utilization, paging rates, file system data, network data). Administrators can now monitor individual operating system processes like those in Figure 1, which displays the monitoring data of the SAPOsCol and SAPRouter processes. Important information can be updated as frequently as every minute, and you can design a monitor in the CEN to provide detailed information concerning non-SAP hosts (see “An Example: Monitoring a Non-SAP Host”).

☑ Log File Monitoring

Non-SAP components, such as databases, normally write their status and error messages to log files. **Figure 3** shows the relationship between agents and internal and external components. You can use the agent to search these log files for any combination of characters, and to report them either as error states or target states in the CEN. Figure 1 shows the log file analysis of the SAP network connectivity program SAPRouter, where the log file is analyzed by looking for the search pattern “failed.” In this way, you can easily monitor your non-SAP components directly from the CEN and respond quickly to error states.

☑ Auto-Reaction Methods

If an alert is triggered in a monitored system, an auto-reaction of your choice can also be triggered. (Until now, auto-reactions were only processed in the same system where the alert occurred.) If the CEN is an SAP Web Application Server 6.10 or later, the agents can transfer the local alert information to the CEN, where an auto-reaction can be generated.

² SAPOsCol is a standalone program that is part of each SAP installation and can be downloaded from the SAP FTP server SAPSERV.

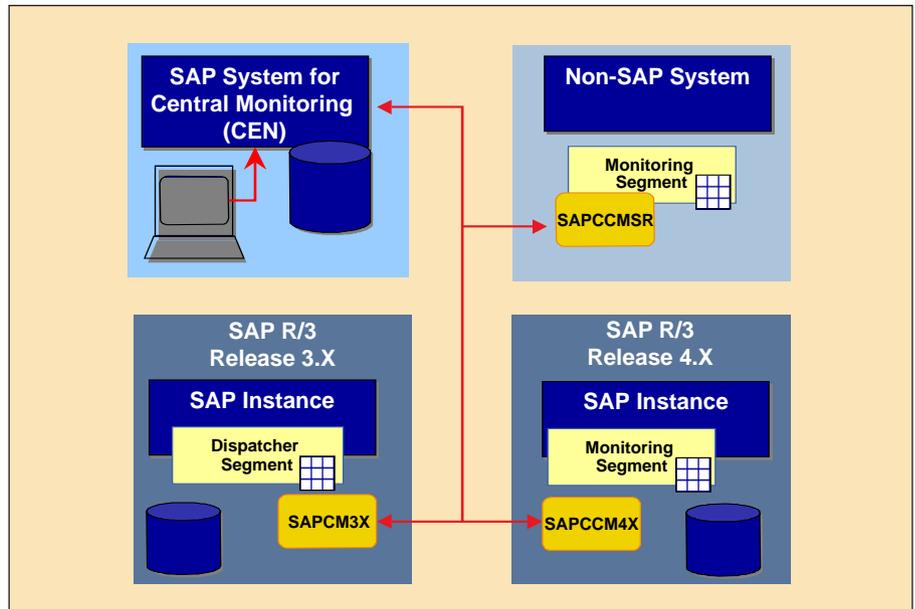


Figure 2 Central Monitoring Landscape with Agents

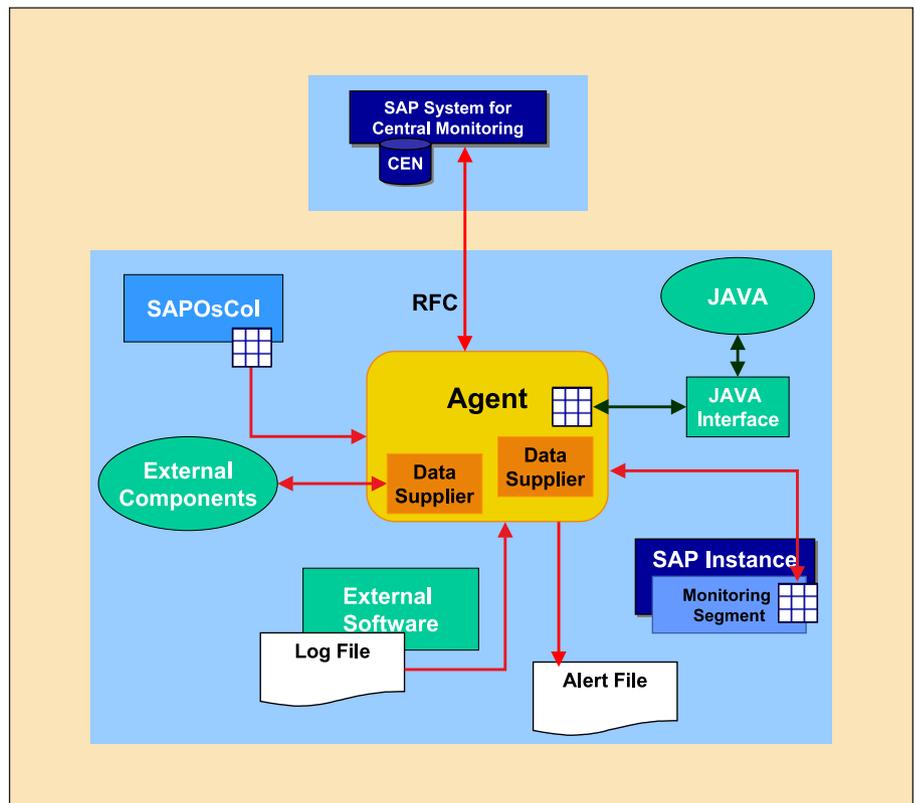


Figure 3 The Agent Concept Up Close

This means that when an error occurs, e-mail notifications or scripts can be started centrally from the CEN, requiring only a single e-mail connection to the Internet from the CEN.

☑ Alert Handling with Push Technology

Alert information from a monitored system is usually requested only when a monitor is called in the CEN. But using push technology, it is also possible for

An Example: Monitoring a Non-SAP Host

Suppose you want to monitor a non-SAP host that has an Oracle database on it. After installation of SAPOsCol and the SAPCCMSR agent, you will be able to set up a monitor in the CEN, which will display:

- *CPU and paging rates of the host* to give a good indication of important performance issues.
- *Current Oracle database processes.*
- *Oracle error messages* for analyzing the day-to-day health of the host.
- *File-system filling level* for tracking database growth and for log directory analysis.

Conveniently, the database is monitored remotely from CEN, so there is no need to log on to the database host.

the agent to send alert information immediately to the CEN (as of Web Application Server 6.10 and up), which can then automatically react with central auto-reactions or e-mail notifications — resulting in less time spent waiting in the CEN while opening monitors.

☑ Integration Characteristics

Agents can write alerts to a log file, which third-party software products can easily access and respond to appropriately.

☑ Extensibility of Agents

You can extend agents with regard to the data they determine and manage. Dynamically linked libraries can be included via a plug-in interface.

There are, for example, plug-ins available for monitoring EMC Symmetrix and the ITS. A Java interface, with which Java programs can read from and write to the monitoring segment, is also currently being tested.

How to Begin

The CCMS agent software is available as a free download from the SAP FTP Server **SAPSERV**.

For detailed information about CCMS agents and for a copy of the white paper “CCMS Agents: Description,” visit the SAP Service Marketplace at <http://service.sap.com/systemmanagement>. Choose “System Monitoring and Alert Management” and look for the documents list at the bottom of the page. ■

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