



# PRO MONITOR

for SAP NetWeaver® | SAP HANA® | SAP S/4 HANA® | SAP® BusinessObjects™

THE ULTIMATE MONITORING  
SOLUTION FOR SAP

# ABOUT PRO.MONITOR

A versatile solution for monitoring SAP NetWeaver®, SAP HANA®, SAP S/4 HANA® and SAP® BusinessObjects™ systems. It has been designed to focus on the service quality of your systems while reducing operating costs and complexity.

Based on 15 years of SAP® professional services, we embedded our expertise and best practices into a plug and play solution, which can be deployed in a few hours.

## WHAT IS PRO.MONITOR?

Its purpose is to monitor the health and performance of these applications to ensure the highest quality of service. Pro.Monitor is preconfigured with a monitoring library based on monitoring best practices and designed to be efficient and simple to use.

Pro.Monitor will remotely connect to the systems, collecting and analyzing data and generating monitoring information such as alarms, metrics and reports. Our solution can be configured to connect and forward those information into third party platforms such as ticketing systems, monitoring frameworks or productivity solutions already in place.



### PLUG'N'PLAY

"Go live" in a few hours, with no agent to install, no system to modify, an automatic system discovery via SLD and automation of daily tasks



### SIMPLICITY

Access a modern and intuitive interface that does not require SAP expertise and benefit from standardised configuration and predefined integration plug-ins.



### EXPERTISE

Benefit from more than 15 years of expertise with Pro.Monitor, a complete monitoring solution that can be interfaced with SAP S/4HANA, HANA DB, BusinessObjects, NetWeaver, etc.



### INTEGRATION

Detect problems before they become critical, configurable for a daily view of alerts and accessible from a single checkpoint.

# MAIN APPLICATION HIGHLIGHTS



PLUG'N'PLAY

## Simple deployment & maintenance

Lightweight server and installation (10 minutes)

Linux or Windows

No external DB to install

Agentless: No agents or transports to install on every system

No maintenance: Self log and data cleanup

Monolithic configuration file (snapshot):

Software version upgrade: 5 min

Centralized management of collectors (upgrade, restart, configuration)

- > **To deploy and maintain Pro.Monitor environment is extremely simple and fast**
- > **To upgrade versions of a largely distributed environment is automatic and takes few minutes**
- > **To add new collectors and attach them to the central server takes 10 minutes**
- > **To add new systems takes one minute per system**
- > **Backup of the entire configuration are done automatically and can easily be transported**

## Agentless

No transport to load in the SAP systems

No agents to install on the system's hosts

Minimal footprint on the systems and no maintenance involved

- > **No need to modify the SAP standard by installing a transport**
- > **No security risks or discussions prior install**
- > **Only requires a dedicated user (consuming no license)**
- > **Light impact on the systems**

## Standard protocols

For each component of a system, a dedicated monitor has been designed following best practices

Monitors have been preconfigured and grouped into relevant templates ready to be used

- > **Then initial configuration of the monitoring of each new system can be setup in few seconds.**
- > **To extend the monitored scope of systems is fast and easy**
- > **New/upgraded monitors can be easily added to the systems**

# MAIN APPLICATION HIGHLIGHTS



SIMPLICITY

## Flexible & centralized system management

Control system monitoring of all customers from one place  
Remote datacenter can be addressed by the use of PM collectors  
Only outbound connection required by the collector  
Collectors will buffer results if connectivity is lost  
Secured communication between server and collectors via SSL

- > **To centrally manage numerous customers is easy and safe**
- > **Onboarding new customers is simple, regardless if systems are hosted or not.**

## System discovery via SLD

Connect to SLD to discover and select the systems to monitor.

- > **Save time and configuration efforts to onboard new systems.**

## Profile based monitoring configuration

Define monitoring template based on your own company standards.  
Reuse templates across customers.  
Granular customization of every single monitor.

- > **Enforce a standard in your monitoring policies**
- > **Reduce the effort spent on monitoring configuration for each customer**
- > **Adapt the monitoring when necessary**

# MAIN APPLICATION HIGHLIGHTS



## Internal monitoring library

For each component of a system, a dedicated monitor has been designed following best practices  
Monitors have been preconfigured and grouped into relevant templates ready to be used

- > **Then initial configuration of the monitoring of each new system can be setup in few seconds.**
- > **To extend the monitored scope of systems is fast and easy**
- > **New/upgraded monitors can be easily added to the systems**

## Out of the box reports

Analyze system activities of the last X hours and create a report

Aggregate system properties and client configurations

Consolidate a list of problems (Short dumps, failed IDOC, backup errors, etc...)

Highlight suspicious metrics (Failed RFC destination...)

Consolidates system usage (transactions, disk space, response times...)

Reports can be customized per company or per system

Schedule reports at your will and send to predefined email recipients

- > **100% automated daily check**
- > **Reduce manual operations overhead**
- > **Offer tailored reports to your customers**

# MAIN APPLICATION HIGHLIGHTS



INTEGRATION

## Plugins for external integrations

Monitoring data can be sent to third parties via plugins

Several plugins can be active in parallel, feeding multiple applications at the same time

Out of the box plugins exists for fast integration :

*ITSM : ServiceNow ITOM/SAP cockpit*

*Monitoring: ScienceLogic SL1, CA UIM, Zabbix...*

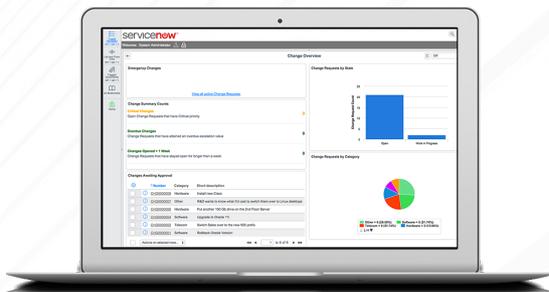
*TSDB: Graphite, Prometheus, InfluxDB, ...*

*Proprietary and opensource third parties*

New plugins developed on demand.

Plugins can run on collectors too for better resilience

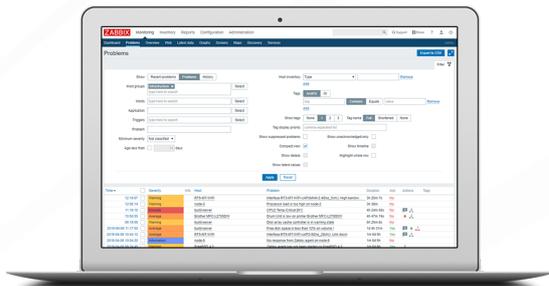
- > 100% automated daily check
- > Reduce manual operations overhead
- > Offer tailored reports to your customers



servicenow



ScienceLogic



ZABBIX



SAP HANA Cloud Platform



ca  
technologies

...or **Custom Plugins**

Are you using a not yet supported monitoring platform?

Don't hesitate to ask for your **customized Pro.Monitor plugin.**

AGENTIL  
software

# MONITORED TECHNOLOGIES

## SAP TECHNOLOGIES

SAP NetWeaver  
NetWeaver 4.6C – 7.5  
ABAP/JAVA/Web Dispatcher  
SAP S4/HANA  
SAP HANA 2.0  
BusinessObjects

## DATABASES

Hana 2.0  
Sybase ASE  
Oracle  
IBM DB2  
Max DB  
MSSQL

# MONITORS OVERVIEW

## NETWEAVER

### ABAP instance memory

This monitor will check the following memory metrics: 

- Extended memory usage
- Heap memory usage and peak usage
- paging and rolling memory usage

 The monitor will send an alarm if any of the memory usage exceeds the thresholds.

### ABAP instance response time

ABAP response time is one of the key metric to measure system performance as experienced by the users. It is important to detect any performance drop in order to react before too many users get impacted.

This monitor will watch for the response time of DIALOG, SPOOL and UPDATE tasks. It will also focus on specific database response time and steps rate to watch for system utilization. You can be notified with an alarm when a performance drop is detected or if system utilization increases above a limit, and constantly send those metrics to your monitoring system for dashboards or reports.

### ABAP locks

This monitor will look for locks on table objects and generate alarms if too many locks are waiting since a given time.

### ABAP shortdumps

A short dump is generated when a program ends unexpectedly. This is a serious indicator that something went wrong during its execution and that some business processes might be impacted. This monitor will watch for all short dumps occurred on the system.

### Application logs

This monitor will focus on the application logs of the system. You can monitor log entry status, as well as the messages contained in a log. To enable the surveillance, you will have to define a list of objects and sub-objects that you want to watch. **Note:** It is not possible to set filters on text messages contained in the logs, only importance and severity can be monitored.

### Batch inputs

This monitor is dedicated to the monitoring of batch inputs. It will look for batch input sessions with error status occurred within a period of time.

Notifies with an alarm when a batch input session is in error

### Custom CCMS monitoring

The CCMS from SAP can contain thousands of metrics and alarm configurations. It has often been widely customized and one may want to keep using its configuration. This module has been designed to discover metrics and alarm configuration from the CCMS and to re-use it as is. Alarms generated by the CCMS can simply be detected and propagated, or CCMS configuration can be imported in Pro.Monitor and extended from there. Generic profiles can then be created and used on many different systems, from different departments or customers, while keeping a central configuration.

### Database backups

Backups are very important in case of disaster recovery and must be monitored closely. This monitor will look for backup age, size, status and duration for Oracle, MSSQL and DB2.

### Database size

This monitor is dedicated to the monitoring of SAP database size.

### DB Exclusive locks

If too many exclusive locks are held for a long time, performances of the whole system can be impacted. This monitor will help to watch for such situations and generate an alarm if one is detected.

### Dispatcher queues

This monitor is dedicated to the surveillance of the dispatcher queues. It can monitor the number of requests waiting in the queues at a given time, and the number of requests written within a given period of time.

### ICM status and usage

The ICM allows the SAP system to communicate toward other systems and must be available at all times. This monitor will check the status of the ICM as well as utilization of connections, threads and queues.

### IDOC exchange monitoring

This monitor is dedicated to the monitoring of IDOC messages. It will look for ERROR or WAITING status of messages received with a given period of time. You can customize the monitoring by creating specific rules depending on the client, the message type, the partner and the direction.

### Instances availability

This monitor is dedicated to surveillance of ABAP application servers (AS). It will send an alarm if an AS cannot be reached, if it is not registered on the message server or if it has been restarted.

### PI/XI messages ABAP

This monitor is dedicated to the monitoring of PI/XI messages status of ABAP stack instances. It requires to be associated with an ABAP connector to the target SAP system.

### Process Chains monitoring

This monitor is dedicated to surveillance of SAP process chains BI. It will watch for execution error status, duration, delay and job occurrence. You can set general rule to watch any process chain and be notified as soon as any fails. You can also configure specific rule for a given job to monitor its real schedule or duration.

### Queued RFC

This monitor is dedicated to the monitoring of QRFC queues. It will watch for: - Queue error status - The number of current entries - The number of entries older than a specified age.

### RFc Destinations availability

This monitor will check that a destination can be reached from all application servers, using either a RFC ping or an authentication, based on RFC destination configuration.

### SAP buffers

This monitor will look for SAP buffers used space, hit ratio, directory used, swap rate and quality. Hit ratio, swap rate and buffer quality metrics can be computed since the startup of the instance, or within a period of time.

### SAP change settings

Clients correct configuration is important to guaranty system integrity against changes. This monitor will check that system and clients change modes are matching the expected configuration.

### SAPconnect (SCOT/SOST)

SAPConnect handles message sending from SAP via different media like FAX, EMAIL and PAGING. Message sending can be very important for some processes and must be monitored accordingly. This monitor will watch for messages with ERROR or WAITING status and notify when problems are found.

### SAP Jobs monitoring

This monitor is dedicated to surveillance of SAP background jobs. It will watch for job error status, duration, delay and job occurrence. You can set general rule to watch any job and be notified as soon as any fails. You can also configure specific rule for a given job to monitor its real schedule or duration.

### SAP transaction times

This monitor is dedicated to the monitoring of SAP transactions average execution time per step. You can define the transaction, task and period for which you want to analyze the response time. The monitor will then generate an alarm if the response time is over a threshold.

### SAP transports

Transports are used to propagate changes across systems. It is important to detect when a transport is in an error state in order to reprocess it. This monitor will watch for failed transports and notify as soon as one is detected.

### SAP users

The goal of this monitor is to follow the amount of connections on each application server and to detect when the number of connected users is above a threshold. you can differentiate interactive, RFC and plugin users and apply specific threshold for a given application server.

### Spools

This monitor is dedicated for the monitoring of spools and spool requests: Used number and size for the spools, status and waiting time for the spool requests.

# MONITORS OVERVIEW

## NETWEAVER (continued)

### System Logs

Lots of problems can be detected by checking the system logs. This monitor gives the possibility to regularly check within a period of time if a given log pattern can be found in sys log. When a problem is detected, you will be notified by an alarm containing the line of logs itself, or a count of lines matching the pattern. This monitor can be very useful if you know the signature of a problem in the logs, to be notified as soon as it occurs. It can also be used to detect an abnormal number critical log lines.

### Transactional RFC

This monitor is dedicated to the monitoring of TRFC. It will watch for: the number of TRFC with a given error status and the TRFC entries older than a given age. You can customize the monitoring for a specific direction, destination, function/program or user.

### Update requests

This monitor is dedicated to the monitoring of SAP updates. It will look for updates with ERROR, NOT\_COMPLETED or INCONSISTENT status. When an update or a group of updates with such status is discovered, the monitor will generate an alarm

### Update service

This monitor is dedicated to the monitoring of one of the key service of the NetWeaver instance: the updates service. Sends an alarm as soon as the service is not running.

### Work processes

Work processes are the actual workers in SAP. It is important to check their state, availability and run time. This monitor will watch work processes of all kinds, with the ability to tune the monitoring for specific tasks or cases. It will detect long running processes, stopped or private processes, compute the usage ratio, and notify as soon as a threshold on those metrics is reached.

## HANA

### Alerts

This monitor will collect the current alerts from HANA statistics engine and forward them through probe alarm interface.

### Database CPU utilization

Monitors the CPU usage of HANA database at the instance and service levels.

### Database disk usage

HANA database uses disks for persistence. To run out of disk space is to avoid at all cost to maintain the service running. This monitor will check disk used space of the HANA database at different levels.

### Database memory utilization

Memory is the main resource of HANA DB and must be watched closely. This monitor will check the memory usage of every service and notify if utilization exceeds threshold;

### HANA backups

Backups are important for disaster recovery, you have to make sure that DATA and LOG are saved regularly. This monitor will look for the time elapsed between last backup as well as backup size and duration.

### HANA connections

The connections are an indicator of the database load and utilization. This monitor will watch for the number of RUNNING connections and send an alarm if too many are detected.

### HANA nodes status

HANA nodes status are visible in the system and this monitor will watch for them. Send an alarm when a node is in an error state.

### HANA replication LOG retention statistics

Log retention is important in the replication mechanism as it defines the capacity of the primary system to absorb and store changes waiting to be sent toward the secondary system. If logs are produced quicker than consumed for a long time, the replication will be compromised. This monitor will detect those situations and send alarms so you can react before replication stops.

### HANA replication shipping statistics

Log shipping statistics is important in the replication mechanism as it defines the capacity of the primary system to send changes toward the secondary system. If logs are produced quicker than sent for a long time, the replication will be compromised. This monitor will detect those situations and send alarms so you can react before replication stops.

### HANA replication status

System replication in HANA is a key component to be resilient against hardware failures or data corruption. This monitor will check that the replication system is in the expected state, during its nominal and transition phases (init, sync). It will also check for reconnects and fail overs and notifies as soon as those situations are detected.

### HANA tables

To monitor table statistics is useful to detect potential performance or optimization problems. This monitor will check for the number of records and delta records as well as memory and disk usage of the column store tables.

### HANA threads

Operations executed on the database occur within working threads. A long running thread can potentially indicate performance or optimization issues. This monitor will look for running threads and notify when a threads runs for too long.

### HANA transactions

If too many transactions are blocked for a long time, this could indicate performance or optimization problems. This monitor will watch blocked and uncommitted transactions.

### Merge statistics

Merge statistics will indicate the performance of the system in persisting changes. This monitor will check for the time taken by the merge operation applied on each table to detect any performance drop in the merge operations.

### Services status

HANA services are the key components of the HANA systems and must stay available. This monitor will watch for the availability and status of all HANA services.

## BUSINESSOBJECTS

### CMC / Audit warnings

This monitor helps you to : -Make sure that the CMC is available. As this monitor is doing the same actions as a user would do within his browser, you can increase the quality of the end user experience. -Make sure there isn't any warning in the CMC's auditing dashboard. As this information is calculated by the CMC, the only way to check this is by doing it manually. Pro.Monitor can do this for you.

### Concurrent users

This monitor helps you to : -Make sure that there is not a lot of users connected at the same time. You can have an alert when the number of concurrent sessions in your system is breaking a threshold. Moreover, this monitor can provide metrics that will allow you to have a chart representing the user activity in your system. -Make sure that a user isn't logged in your system too many times.

### Schedules

This monitor helps you to : -Make sure that nobody has configured a schedule to run too often. You can have an alert when a schedule is scheduled to run underneath a threshold (in minutes) you've configured. -Make sure that you don't have too many failed schedules in your system. This allows to make sure that you are not polluted with data you won't need anymore. -Send an alert every time a new failure is detected for a given schedule. Plus, this monitor will send metrics for you to have a chart with the execution states of a schedule.

### Servers metrics

Monitor to make sure that a metric (populated by business object himself) isn't breaking a threshold you've configured here. For example, you can have an alert if the concurrent number of audit events in the queues is more than 100.

### Servers properties

Monitor to make sure that some configuration properties of you server aren't configured with values you don't want. For example, you can have an alert every time the log level is set to something else than "low".

### Servers status

With this monitor you will have an alert every time a server is in an unexpected state for more time than a threshold you've configured. For example, you can have an alert when a server is in the state "stopped" for more than one minute. As it's completely customizable, you can make sure that nobody activates a server that you don't want it to be working. This monitor can also send metrics concerning the state of the servers.

## SYBASE

### Sybase backups

This monitor will look for the last cumulative, database and transaction dumps and send an alarm if some are too old. It will also detect and report dump errors.

### Sybase database size

Disk space is a critical resource for any database, to persist database and log data. This monitor is meant to detect situations where allocated disk space is running low.

### Sybase deadlocks

Deadlocks can significantly reduce the performance of the applications and the response time for the users. This is usually reflecting a blocking situation which can last a long time. It is therefore very important to detect deadlocks and act rapidly to resolve them if necessary.

### Sybase error logs

Errors logs is useful to detect problems and investigate their causes. This monitor will watch error logs and can report any specific or repetitive message. You will be notified as soon as a problem starts happening.

### Sybase file system

File system is a critical resource for any database to persist database and log data. This monitor is meant to detect situations where file systems used by the database is running out of space.

### Sybase performance

This monitor is meant to detect when the database is reaching its limits in processing capabilities. Such situations will impact response times for programs and users. It will check database CPU and threads usage.

# MONITORS OVERVIEW

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## ORACLE

### Tablespaces size

An Oracle database consists of one or more logical storage units called tablespaces, which collectively store all of the database's data. Each tablespace in an Oracle database consists of one or more files called datafiles, which are physical structures that conform to the operating system in which Oracle is running. This monitor is meant to watch datafiles utilization metrics.

### Backups

This monitor can monitor backup status, duration, size and elapsed time since last backup. You can quickly set general failed backup monitoring rules as well as custom rules for specific types of backups.

### Performance

The performance of the Oracle database is visible through several metrics. This monitor collects those metrics and allows to monitor their values: Data cache hit, Buffer cache hit, avg write time, etc...

### Log switches

This monitor will check the time interval between log switches and notify if it happens too often.

### DB object errors

Monitors current errors on all stored objects (views, procedures, functions, packages, and package bodies) and notify when errors are found.

## MSSQL

### MS-SQL Backups

Monitors all types of SQL Server database backup

### MS-SQL File size

To monitor database files size, with the ability to filter by type of file and specific filenames if necessary.

### MS-SQL Used/Free space in file

Monitors used or free space - extents - in all types of SQL Server database files

### MS-SQL Performance

Monitors a large number of useful SQL Server performance counters

### MS-SQL Free disk space

Monitors free space on disks where all types of SQL Server database files are stored

### MS-SQL Configurations

Monitors useful SQL Server configurations items, checking they are set as expected

### MS-SQL Free List Stalls

Monitors IO stalls, reading and writing performances for all types of SQL Server database files

### MS-SQL Autogrowth

Monitors database files growth sizes and remaining space after grow

# MONITORING

## Monitoring data

Alerts based on a set of threshold and filter adapted for each situation

Metrics for most relevant data for each monitor

Discovery and support of new metrics discovered from the systems

Metadata of each system (versions, properties, health, usage)

Reports of aggregated data, problems and events occurred within a period

- > Addresses all the needs for alarm console, graphs, CMDB
- > Simplifies daily check and capacity planning

## Standard protocols

Uses only SAP standard protocols to connect to the systems

SAPControl, RFC, JDBC, Web clients

- > Resilient to SAP upgrades
- > Stay in control of the data made visible to the monitoring users
- > No need to modify your systems



# WHAT IS COMING

## Action rules

Adds the possibility to define action scenarios based on events or calendar

Actions will make possible to:

- *Start/Stop a system*
- *Call an OS command locally or via SSH*
- *Execute a BAPI*
- *Execute a python script*
- *Call web services*

Stateless or Stateful actions (Pause or resume scenario based on conditions)

**> Powerful way of automating response to problems or to execute regular operations**

## Maintenance windows

Define and schedule maintenance windows

Automatically stops and resume monitoring

Automatically notify stakeholders and users

Automatically lock system and disconnect users

Optionally Start/Stop systems

Automatically compute SLA based on planned maintenance.

**> Automate maintenance operations**

**> Avoid false alerts**

## New monitors

Advanced web portal for testing portal availability, response time and data

JMX connectors for Java application monitoring

SAP cloud application connectors

**6.X** (Q2/2020)

More robust and independent agent mode, new integration plugins with most renowned monitoring suites. New database collectors such as Oracle, Sybase, MSSQL

**7.X** (Q3/2020)

Stand-alone version with SAP dedicated dashboards, multi tenant, multi-role views, in depth visibility in SAP health and performance, baselining and anomaly detection

**8.X** (2021)

Cloud offer, Machine learning, SAP Cloud Application Monitoring, SAP Security plugin, SAP License Optimizer, S/4HANA Transactions, IOT's



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