

# SAP Monitoring

SUSE® Linux Enterprise Server for SAP Applications · SUSE Linux Enterprise High Availability

This article shows monitoring solutions for SAP administrators to efficiently monitor their SAP systems. The solutions that is described here works for SUSE® Linux Enterprise Server 12 SP3 to 15 SP2.

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# 1 Conceptual overview

Starting from the idea of improving user experience, SUSE engineering worked on how to monitor High Availability clusters that manage SAP workloads (SAP HANA and SAP NetWeaver).

The exporters shown here export their metrics which can be combined and integrated with Prometheus and Grafana to produce complex dashboards.

SUSE supports Prometheus and Grafana through SUSE Manager 4.0. Some Grafana dashboards for SAP HANA, SAP S/4HANA, SAP NetWeaver, and the cluster monitoring are provided by SUSE via Grafana community dashboards.

## 2 Terminology

### Grafana

An interactive visualization and analytics Web application. It provides methods to visualize, explore, and query your metrics, and trigger alerts.

### Prometheus

A systems monitoring and alerting toolkit. It collects and evaluates metrics, displays the result, and triggers possible alerts when an observed condition is true. Metrics can be collected from different targets at given intervals.

## 3 Installing exporters

Installation of an exporter follows always the same pattern. Execute the following steps:

### PROCEDURE 1: GENERAL WAY

1. Install the package. All package are available in SUSE Linux Enterprise Server for SAP Applications.
2. *(Optional)* Copy the configuration file to `/etc/EXPORTER_DIR`. The exact folder name is different for each exporter. This step depends on the exporter. If you skip this step, the default configuration is used.
3. Start the daemon:

```
systemctl start NAME_OF_DAEMON
```

The above procedure is automatically done by each of the Salt formulas described in *Article "SAP Automation"*.

## 4 SAP HANA database exporter

Exports SAP HANA database metrics. The exporter can to export the metrics from more than one database or tenant. This `multi_tenant` option is enabled by default.

**Package:** `prometheus-hanadb_exporter`

**Link:** [https://github.com/SUSE/hanadb\\_exporter](https://github.com/SUSE/hanadb_exporter).

### EXPORT METRICS IN PROMETHEUS FORMAT

- Memory metrics
- CPU metrics
- Disk usage metrics
- I/O metrics
- Network metrics
- Top queries consuming time and memory
- System replication metrics

Find installation instruction in the previous link.

## 5 High Availability cluster exporter

Enables monitoring of Pacemaker, Corosync, SBD, DRBD and other components of High Availability clusters. Collects metrics to easily monitor cluster status and health.

**Link:** [https://github.com/ClusterLabs/ha\\_cluster\\_exporter](https://github.com/ClusterLabs/ha_cluster_exporter).

### EXPORT METRICS IN PROMETHEUS FORMAT

- Pacemaker cluster summary, nodes, and resource status
- Corosync ring errors and quorum votes. Currently, only Corosync version 2 is supported.

- Health status of SBD devices.
- DRBD resources and connections status. Currently, only DRBD version 9 is supported.

## 6 SAP host exporter

Enables the monitoring of SAP NetWeaver, SAP HANA, and other applications. The gathered metrics are the data that can be obtained by running the `sapcontrol` command.

Link: [https://github.com/SUSE/sap\\_host\\_exporter](https://github.com/SUSE/sap_host_exporter).

EXPORTS METRICS (FOR SAP S/4HANA, SAP NETWEAVER, OR SAP HANA HOSTS) IN PROMETHEUS FORMAT

- SAP start service process list
- SAP enqueue server metrics
- SAP application server dispatcher metrics
- SAP internal alerts

## 7 For more information

- SUSE Manager (<https://documentation.suse.com/suma/4.0/>)
- Grafana Dashboards (<https://grafana.com/grafana/dashboards?orderBy=name&direction=asc>)
- Some `.md` files are included in RPM packages. They contain documentation from upstream sources. This can be helpful in isolated data centers without Internet connection.
- SUSE & Microsoft collaborates to provide SAP monitoring (<https://techcommunity.microsoft.com/t5/running-sap-applications-on-the/suse-amp-microsoft-collaborates-to-provide-sap-monitoring/ba-p/1571926>)

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