SAP Monitoring Using AppDynamics

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This document describes how to install and configure SAP monitoring using AppDynamics.

SAP Components

The SAP monitoring components are:

- **ABAP Agent**: Responsible for business transaction monitoring (communication between SAP and external systems, like the AppDynamics Controller).
  - **HTTP SDK**: Sub-component of the ABAP Agent responsible for forwarding data collected by the ABAP Agent to the AppDynamics Controller using C++ SDK.
  - **Datavard Insights**: Responsible for collecting SAP-specific metrics, logs, and events. See Datavard Insights Integration.
  - **BiQ Collector**: Responsible for monitoring SAP business processes. See Monitor SAP Business Processes.

Supported AppDynamics Controllers

ABAP Agent supports AppDynamics Controller versions based on Maintenance Support for Software Versions. The ABAP Agent functionality depends on AppDynamics C++ SDK that supports AppDynamics Controller versions based on Agent and Controller Compatibility.

License Requirements

The purchase of AppDynamics for SAP ABAP Agent covers the following licenses, but these must be generated and installed on the corresponding components.

<table>
<thead>
<tr>
<th>Area to be Licensed</th>
<th>License</th>
</tr>
</thead>
<tbody>
<tr>
<td>AppDynamics Controller</td>
<td>• One AppDynamics C/C++ SDK license for each SAP application server</td>
</tr>
<tr>
<td></td>
<td>• One AppDynamics Machine Agent license for each SAP application server</td>
</tr>
<tr>
<td>Within SAPGUI configuration for licensing</td>
<td>• One AppDynamics ABAP agent license for each SAP system</td>
</tr>
</tbody>
</table>

SAP ABAP Agent Architecture

The ABAP Agent uses the AppDynamics C++ SDK wrapped by the AppDynamics HTTP SDK to report business transaction performance metrics and snapshots. The following diagram describes the communication between ABAP Agent and AppDynamics Controller:
Install the ABAP Agent and HTTP SDK

Requirements

The ABAP Agent components are delivered as transport requests, and you can import these requests to the SAP systems on supported releases.

The HTTP SDK can be installed on the SAP application servers that run on supported operating system. If the SAP application server runs on an OS where you cannot install HTTP SDK, for example, AIX, install HTTP SDK on a separate machine.

Components

<table>
<thead>
<tr>
<th>Purpose of installation</th>
<th>Components</th>
<th>Component Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instrumenting the SAP systems</td>
<td>ABAP Agent</td>
<td>Intercepts HTTP and certain RFC calls. Detects business transactions, exit calls, and errors. Reconstructs SAP GUI logs into business transactions. Reports business transaction data, metrics, events and custom analytics using the corresponding API.</td>
</tr>
<tr>
<td>Forwarding data to the controller</td>
<td>HTTP SDK</td>
<td>Connects the ABAP Agent and the AppDynamics Controller. The ABAP Agent communicates with the HTTP SDK through HTTP protocol. HTTP Requests are mapped to functions from the AppDynamics C++ SDK library. The AppDynamics C++ SDK is included into the HTTP SDK and is used for communicating with the AppDynamics Controller, reporting business transaction metrics, dashboards, and so on. As of release 20.11.0, HTTP SDK can be used to replace Machine agent HTTP listener for reporting application events. See Application Event API Adapters for more details.</td>
</tr>
<tr>
<td>Collecting SAP system performance metrics and events</td>
<td>Datavard Insights</td>
<td>Collects the SAP-specific metrics, events and analytics data.</td>
</tr>
<tr>
<td>Collecting SAP system performance metrics and events</td>
<td>AppDynamics Standalone Machine Agent</td>
<td>Forwards application events from SAP to the controller.</td>
</tr>
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</table>

Deployment

Before you begin, verify the support for your application environment at [SAP Supported Environments](https://help.sap.com/).

Install the ABAP Agent components by importing relevant transport requests in the correct order. See [Install SAP Netweaver Systems](https://help.sap.com/).

Deploy HTTP SDK using one of the following OS options:

1. SAP application server running on supported OS
2. SAP application server running on other OS
Deploy on Application Servers Running on Supported OS

Install the HTTP SDK locally on every server if all the SAP application servers are running on supported OS. You can automate the local installation, see Installing HTTP SDK Automatically. The ABAP Agent connects to the HTTP SDK using a local HTTP connection.

Deploy on Application Servers Running on Other OS

If the SAP application servers are running on operating systems where HTTP SDK cannot be installed, or if the individual application servers of one SAP system run on a mixed OS, install the HTTP SDK on a separate 64-bit Linux machine (Gateway system) that is used as a proxy for all SAP application servers. See Installing HTTP SDK Manually.
The ABAP Agents communicate through HTTP or HTTPS connection with the HTTP SDK instances on the Linux system. For every SAP application server, a separate HTTP SDK instance (process) starts on the Gateway system.

Following are the Gateway system requirements:

- x86-64 based 64-bit Linux as Operating System
- Physically close to the SAP systems to prevent latency issues
- 512 MB RAM for each SAP system or at least 128 MB RAM for each SAP application server
- 512 MB of disk space for each SAP application server (for logs)
- Java 1.8 or newer (for SDK Manager)
- IPv4 protocol is required (for SDK Manager)
- Server host name must be maintained
- One open port for SDK manager (default port is 7999) between this Gateway system and all SAP application server hosts
- One open port for each HTTP SDK instance between this Gateway system and SAP application server that owns this HTTP SDK instance
- en_US.UTF-8 language must be installed

Each HTTP SDK instance uses a unique port for HTTP(S) communication with the ABAP Agent. The SDK Manager application governs all HTTP SDK instances on the Gateway system. This application allows remote control from the ABAP Agent GUI. See SDK Manager.

Install the Machine Agent

The AppDynamics Machine Agent supports most operating systems. It must be installed on each SAP application server. See Machine Agent Requirements and Supported Environments.

As of release 20.11.0, HTTP SDK can be used to replace Machine Agent for application event reporting. If OS monitoring provided by the Machine Agent is not needed, switching to HTTP SDK event API makes installation of Machine Agent optional. See Application Event API Adapters for more details.
There are known compatibility issues with Machine Agent versions 21.5.0 to 21.6.X. These issues are fixed in Machine Agent 21.7.0.