



# Ensuring SAP systems deliver for the global economy

*21.11 Release - "What's new" Technical Overview*



# How do you enable SAP operations to deliver for your business?



Unlock innovation  
and wellbeing in  
the team



Realize the  
potential of SAP  
automation



Make security and  
availability a  
customer  
experience issue

# Introducing Avantra 21.11

AI Ops platform to ensure SAP systems deliver for your business





## Standard

Foundation for monitoring and management of SAP landscapes

## Professional

Integrated operations platform designed for extensible & complete SAP landscape management

## Enterprise

AIOps platform for intelligent landscape management including accelerators for advanced SAP Operations

NEW

# Avantra 21.11 – designed to ...

## Observe



Understand  
everything happening  
in your SAP world  
automatically

## Engage



Engage with the  
team the right way at  
the right time with  
reduced false  
positives

## Act



Automate your  
activities to drive  
quality, speed and  
consistency

# Avantra 21.11 - at a glance

## Observe



Automated SAP  
HotNews analysis



SAP Notes  
inventory



ML based  
predictive  
analytics



All new UX for  
dashboards and  
charts



Native Solution  
Manager support



Avantra  
Add ins



## Engage



Certified ServiceNow  
Service Graph  
integration



Advanced business  
logic within  
notifications

## Act



BPMN 2.0  
workflow  
automation engine



Ready to use  
SAP automation  
templates

## Platform



Automated server  
registration and  
monitored system  
auto-discovery



Multi-level  
monitoring support  
without credentials  
or transports



Native  
VMware  
integration



Developer productivity  
enhancements and  
enhanced APIs



Native connect  
support for  
PostgreSQL and  
MySQL



# Observe - what's new



*Understand everything happening in your SAP world automatically*



Reduce the time for impact analysis  
of critical security alerts from  
weeks to seconds via

**Automated SAP HotNews analysis**



See what repairs, patches and  
security notes are in every system  
at a glance with the new

**SAP Notes inventory**



Significantly reduce out of hours  
false alerts and effort  
with the new

**ML based predictive analytics**



Deliver a consumer-grade reporting  
experience to  
(even) business users via the

**All new UX for dashboards and charts**



Always be ready for the next SAP  
upgrade and reduce patching  
preparation effort with

**Native Solution Manager support**



Deliver rapid value via scenario-specific  
accelerator templates for security,  
hardening and more with

**Avantra Add ins**

# Automated SAP HotNews analysis

Reduce the time for impact analysis of critical security alerts from weeks to seconds

- Easily answer the question “Are my systems affected?”
- SAP HotNews and analysis is completed automatically each night
- Combines SAP component information with OS and DB information for impact analysis
- Notes can be marked as active or inactive, so irrelevant HotNews can easily be hidden
- Track the implementation status of active notes

SAP HotNews ✕											
<input checked="" type="checkbox"/> Show Relevant Systems <input checked="" type="checkbox"/> Synchronize <input checked="" type="checkbox"/> Set Status <input checked="" type="checkbox"/> Show new notes with relevant systems <input type="checkbox"/> Show old note versions             More ▾											
Note	Version	Title	Status	Date	Component	Category	Sec Cat	Related Software	Impl. Systems	Relevant for	
3092640	9	PMW format: character hex A0 in the file / US_ACH and other formats	New	2021-10-19	FI-BL-PT-FO	A		S4CORE 100;102;101;103;104;105;106 SAPSCORE 125 SAP_APPL 604;606;605;616;603;602;600 SAP_FIN 617;618;700;730;720	1 New 1 Implemented	S19 corr - S4CORE/104;0-4	
3097887	4	[CVE-2021-38178] Improper Authorization in SAP NetWeaver AS ABAP and ABAP Platform	New	2021-10-12	BC-CTS-ORG	A	P	SAP_BASIS [700,702];[710,730];740;731;[750,756]	10 New 2 To be implemented 1 Implemented	AVA corr - SAP_BASIS/750;0-22 SNA corr - SAP_BASIS/752;0-9 S19 corr - SAP_BASIS/754;0-5 SO1 corr - SAP_BASIS/750;0-22 8 more...	
3062490	5	Some fields in Notification (table QMEL) are cleared after Oss note 2951114	New	2021-10-08	PM-WOC-MN	A		EA-APPL 617;606;605;616 S4CORE 100;102;101;103;104;105 SAP_APPL 618	2 New	S19 corr - S4CORE/104;0-4 PIV_XAN corr - S4CORE/103;0-6	



# SAP Notes inventory

See what repairs, patches and security notes are in every system at a glance

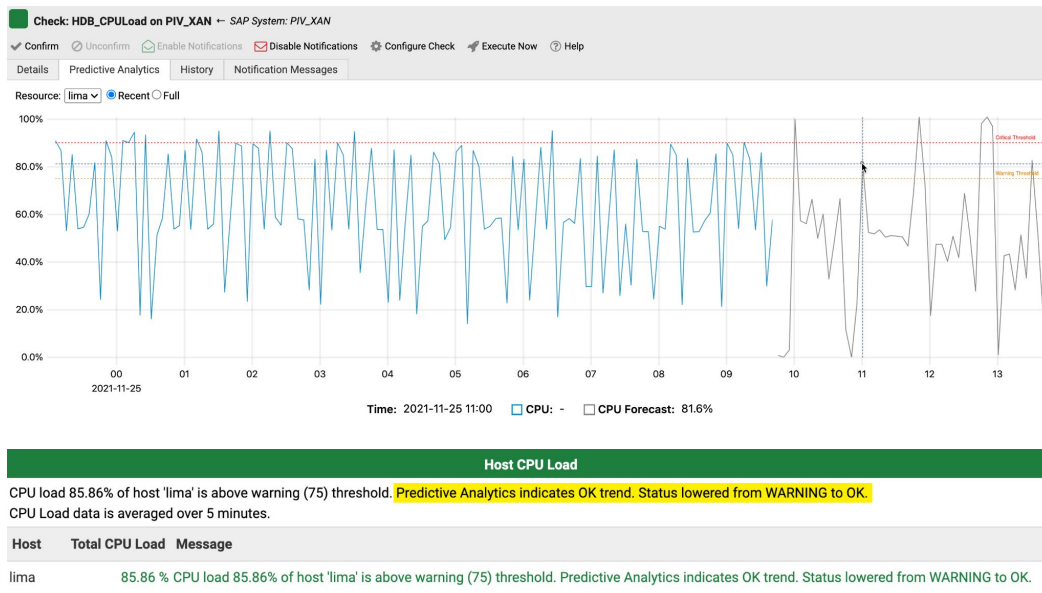
- See complete information around SAP Notes within all systems as standard
- Easily see if there are SAP HotNews items that affect the current SAP system and have not yet been implemented

SAP Notes										
Note ID	Priority	Version	Text	SNote Status	Component	Implementation Date	Implementation User	Status	Message	
2596411	-	69	Note Analyzer for ABAP-based Migration and Replication Technology (DMIS2011/DMIS)	Obsolete version implemented	HAN-DP-LTR	2020-09-18 13:02	PIV	New		
1668882	-	27	Note Assistant: Important notes for SAP_BASIS 730,731,740,750,751,752,753,754	Completely implemented	BC-UPG-NA	2020-09-18 12:35	PIV	New		
2424539	-	7	SAP Note Assistant: Test Note for Digital Signature Verification of SAP Note	Completely implemented	BC-UPG-NA	2020-07-02 15:27	PIV	New		
2589309	-	9	Fixes to reimplement handling - Ignore TADIR for new objects and invalid pr	Completely implemented	BC-UPG-NA	2020-09-18 12:51	PIV	New		
2606986	-	4	Upgrade: You cannot reset obsolete SAP Notes in transaction SPAU	Completely implemented	BC-DWB-CEX	2020-09-18 12:54	PIV	New		
2714624	-	9	Version Comparison False Result	Completely implemented	BC-UPG-NA	2020-09-18 12:51	PIV	New		
2722027	-	16	Certain OSS RFC APIs calls replaced with corresponding web service calls	Completely implemented	BC-UPG-NA	2021-01-20 09:36	IVI	New		
2808144	-	3	Note Implementation fails for AMDP Class methods	Completely implemented	BC-UPG-NA	2020-09-18 12:35	PIV	New		
2836302	-	22	Automated guided steps for enabling Note Assistant for TCI and Digitally Signed	Completely implemented	BC-UPG-NA	2021-01-20 09:36	IVI	New		
2869143	-	13	Composite note for handling of Digitally Signed SAP Notes in Note Assistant (SNO	Completely implemented	BC-UPG-NA	2021-01-20 09:36	IVI	New		

# ML based predictive analytics

Significantly reduce out of hours false alerts and effort

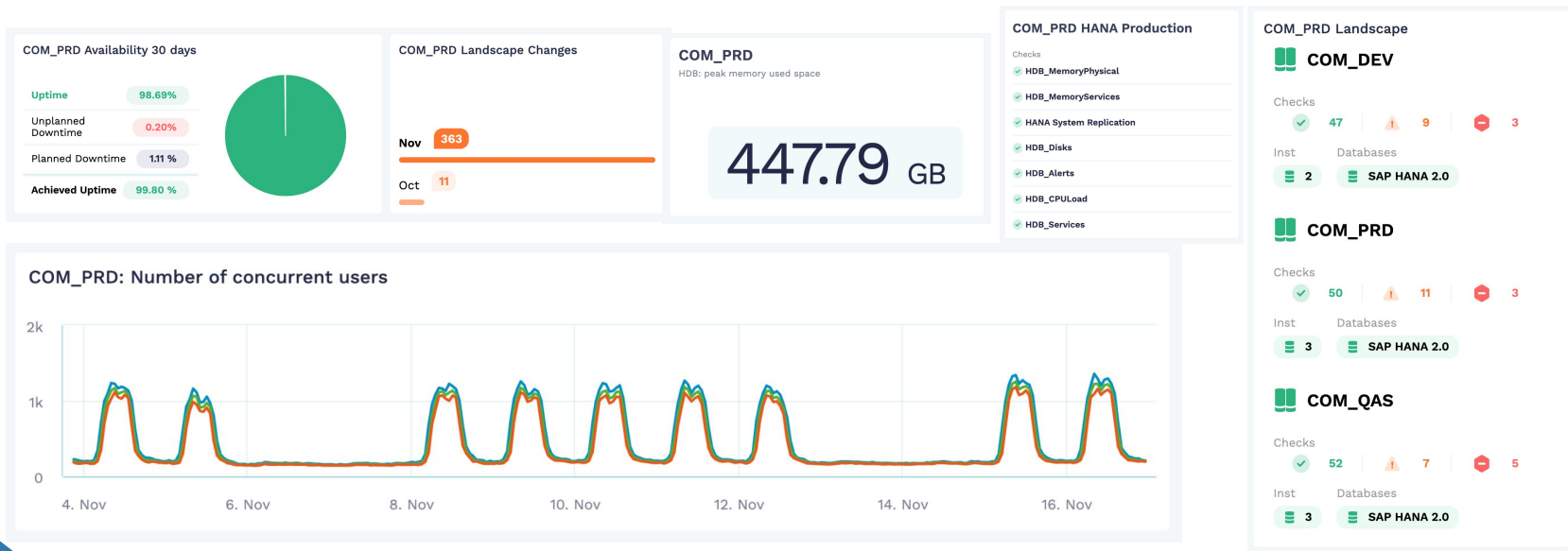
- Uses built-in machine learning algorithms to inform whether current readings are truly an issue or not
- Reduce out of hours false alerts caused by “spikey”, “bursty”, or “flapping” monitoring situations
- Works based on time series data combined with classic threshold based monitoring
- Out of the box support for:
  - CPU load
  - HANA CPU load
 (More coming in Q1 2022)



# All new UX for dashboards and charts

Deliver a consumer-grade reporting experience to (even) business users

- Consumer-grade user experience with enhanced reporting capabilities
- Available alongside the classic UI

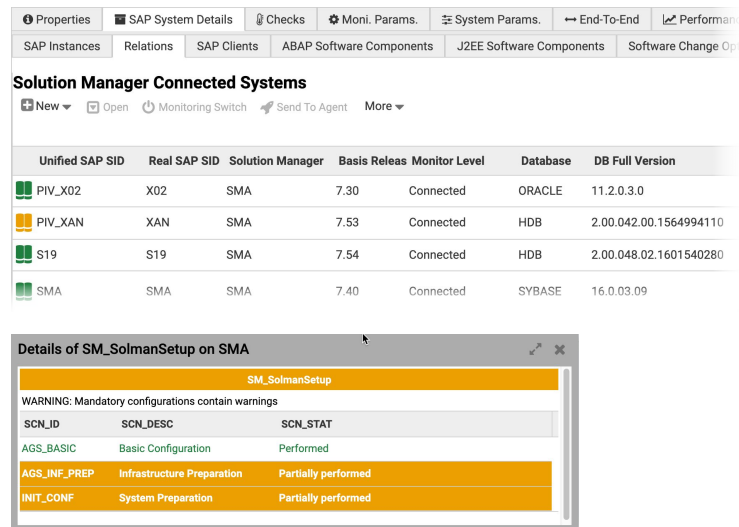


# Native Solution Manager support

Always be ready for the next SAP upgrade and reduce patching preparation effort

- Native out of the box support for Solution Manager
- Show the relationship between Solution Manager and each SAP system (2 way links)
- Six new out of the box checks

SM_SolmanSetup	Checks setup of Solution Manager <a href="#">Deployed on Solution Manager only</a>
SM_LMDBConsistency	Checks consistency of Solution Manager LMDB <a href="#">Deployed on Solution Manager only</a>
ServiceDataCCN	Checks connection of ABAP systems to Solution Manager
DigitalNotesCompliance	Checks if ABAP System is configured correctly to download digital notes
RTCCTool	Performs SAP system service readiness check (RTCCTOOL)
TMS_Status	Performs various TMS-related tests and extracts transport route information



The screenshot displays the SAP Solution Manager interface. The top navigation bar includes tabs for Properties, SAP System Details, Checks, Moni. Params., System Params., End-To-End, and Performance. Below this, a sub-navigation bar shows SAP Instances, Relations, SAP Clients, ABAP Software Components, J2EE Software Components, and Software Change Options. The main content area is titled 'Solution Manager Connected Systems' and features a table with columns: Unified SAP SID, Real SAP SID, Solution Manager, Basis Releases, Monitor Level, Database, and DB Full Version. The table lists four systems: PIV\_X02, PIV\_XAN, S19, and SMA, all connected to the database. Below the table, a section titled 'Details of SM\_SolmanSetup on SMA' shows a warning about mandatory configurations and a table with columns SCN\_ID, SCN\_DESC, and SCN\_STAT. The table lists three configurations: AGS\_BASIC (Performed), AGS\_INF\_PREP (Partially performed), and INIT\_CONF (Partially performed).

Unified SAP SID	Real SAP SID	Solution Manager	Basis Releases	Monitor Level	Database	DB Full Version
PIV_X02	X02	SMA	7.30	Connected	ORACLE	11.2.0.3.0
PIV_XAN	XAN	SMA	7.53	Connected	HDB	2.00.042.00.1564994110
S19	S19	SMA	7.54	Connected	HDB	2.00.048.02.1601540280
SMA	SMA	SMA	7.40	Connected	SYBASE	16.0.03.09

SCN_ID	SCN_DESC	SCN_STAT
AGS_BASIC	Basic Configuration	Performed
AGS_INF_PREP	Infrastructure Preparation	Partially performed
INIT_CONF	System Preparation	Partially performed

# Avantra Add ins

Deliver rapid value via scenario-specific accelerator templates for security, hardening and more

- Collections of content that accelerate your time to value for specific scenarios e.g. security and hardening
- Available to customers through the [Avantra Support Portal](#).
- Launching with Avantra 21.11:
  - [Avantra on Avantra](#)  
The “Focus on Avantra” Add in will allow you to Monitor & Manage your Avantra AIOps Platform from within Avantra, including DB, Security, and integration layers. It is designed to bring confidence that your Avantra platform is running smoothly and forewarn you of issues.
  - [SuSE Hardening](#)  
The “SuSE Hardening” add in will allow you to compare your in-use OS settings within SuSE installations with recommendations from the published SuSE Hardening Guide. It is designed to highlight common hardening parameters that should be set within your SuSE install base and ensure rogue settings are identified and changed early.



# Engage - what's new

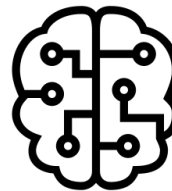


*Engage the right way at the right time with reduced false positives*



Bring enriched SAP landscape  
information closer to the business  
and into the CMDB via our

**Certified ServiceNow Service  
Graph integration**



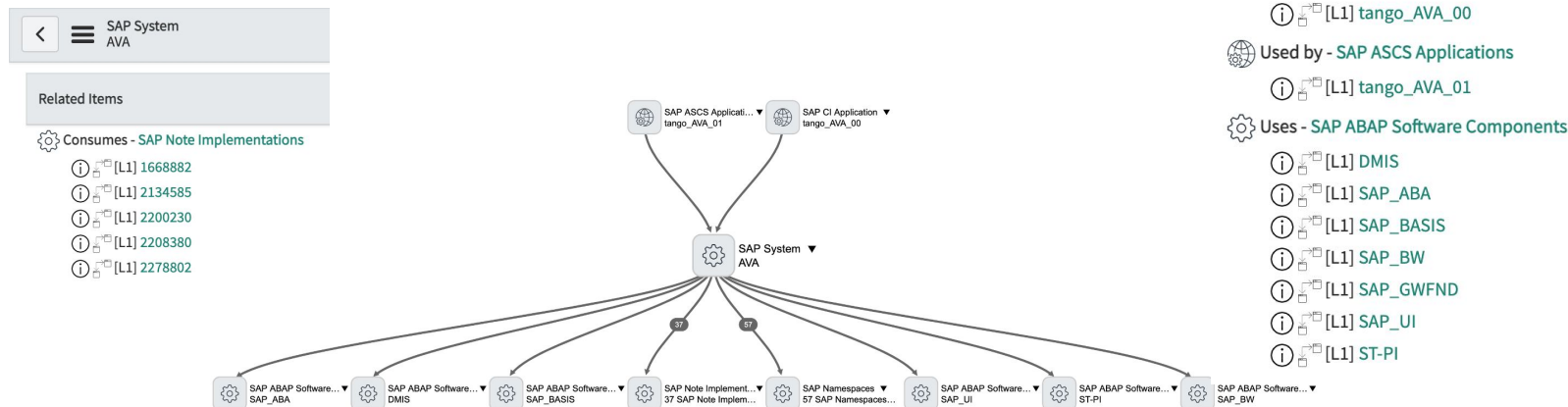
Add business logic to your outbound  
engagements to intelligently route  
updates, alerts and more

**Advanced business logic within  
notifications**

# ServiceNow Service Graph connector

Bring enriched SAP landscape information closer to the business and into the CMDB

- Native support within Avantra and also within ServiceNow as part of a ServiceNow certified co-innovation
- Simple and no-code setup and configuration
- Avantra has influenced the ServiceNow CMDB council to introduce SAP data structures e.g. SAP Notes
- No need for discovery via MID server



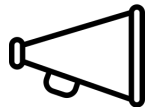
# Advanced business logic within notifications

Add business logic to your outbound engagements to intelligently route updates, alerts and more

- Design and deploy business logic within the notification engine
- Logic is designed using Javascript with significant flexibility
- Facilitates a memory of previously incident data for updates and more
- High level of flexibility to adopt to 3rd party interface or API
- Examples available in our new API documentation



Critical check  
result raised  
in Avantra



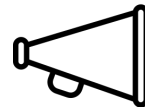
Notification  
sent to 3rd  
party system



New incident in 3rd  
party system.  
Ticket ID returned to  
Avantra and stored  
within check



Check result is  
changed to OK  
in Avantra



OK notification  
now used to  
update previous  
ticket



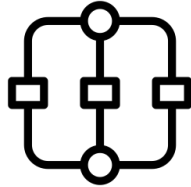
Incident in 3rd party  
system can be  
updated, eg. priority  
changed or  
automatically closed





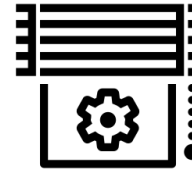
# Act - what's new

*Automate your activities to drive quality, speed and consistency*



Design and deliver business-led operations automations linked to business outcomes using the new

**BPMN 2.0 workflow  
automation engine**



Significantly reduce manual effort, increase service quality and scale to match business growth via

**Ready to use  
SAP automation templates**

# BPMN 2.0 workflow automation engine

Design and deliver business-led operations automations linked to business outcomes



Separate automation code and data by using variables



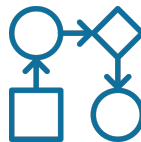
Allow manual steps in automations



Improved scheduling possibilities

- Designed based on customer feedback from the existing automation engine
- Avantra will deliver SAP Automation templates within this engine for Enterprise subscription customers

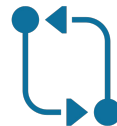
- Existing automations continue to work on previous engine
- A later 21.11.x release will provide a function to transfer automations on previous engine to new BPMN engine



Support complex workflows



Customisable automation actions



Better integration to Avantra inventory

# Ready to use SAP automation templates

Significantly reduce manual effort, increase service quality and scale to match business growth

- Automated SAP Kernel Upgrades - available today

Launching in Q1 2022 with the new automation engine. Templates are planned for the following use cases to be delivered throughout 2022:

- Update of SPAM / SAINT
- Installation of add-ons and support packages, like Support Tools for ABAP Systems (ST-PI / ST-A/PI)
- Update and restart of SAP host agent
- Apply of instance profile parameters
- Apply of HANA database parameters
- Install of SAP notes with automatic corrections
- Copy of table contents from source to destination SAP system
- SAP system refresh for HANA based systems



# Platform - what's new



*Deliver consistent, secure and intelligent operations powered by a flexible and robust AIOps Platform*



Easily scale to match business initiatives through significantly reduced deployment effort via

**Automated server registration and monitored system auto-discovery**



Deliver immediate observational insight for new systems with the new

**Multi-level monitoring support**



Treat your cloud and on-premise landscapes the same including end to end automation support with

**Native VMware integration**



Enable operations teams to create and deploy enhanced business-led observations and automations via

**Developer productivity enhancements and enhanced APIs**



Drive additional insight from business critical non-SAP systems with the new

**Native connect support for PostgreSQL and MySQL**

# Auto server registration & system discovery



Easily scale to match business initiatives through significantly reduced deployment effort

- Automatic self-registration from deployed agents to simplify and speed up new systems  
Simply use: agent-21.11.0.bin -- --masterhost=your-master-host --custid=123
- Detected SAP instances and SAP systems are now automatically discovered by the agent and created within the Avantra system
- Avantra administrators confirm automatically created systems individually or in a bulk action

The screenshot shows the 'Server: charlie' configuration window. It has a top toolbar with icons for Properties, System Inventory, Checks, Moni. Params., Performance, and Changes. Below the toolbar is a yellow status bar that reads: "This server has been automatically added during installation. Please press 'Confirm' to confirm it." The main area contains a form with the following fields:

Server	
* Physical Server Name	* Customer
charlie	syslink
* FQDN or IP Address	Server Time Zone
192.168.12.101	---
NAT Traversal	DNS Domain
<input type="checkbox"/> <small>TNL</small> Use As Gateway	---
Service Authentication	
---	

Server

The screenshot shows the 'SAP System: SYS\_CHA' configuration window. It has a top toolbar with icons for Properties, SAP System Details, Checks, Moni. Params., System Params., End-To-End, Performance, and Changes. Below the toolbar is a yellow status bar that reads: "This SAP system has been automatically created. Please press 'Confirm' to enable it, add users and install the Avantra transport to fully monitor it." The main area contains a form with the following fields:

SAP System	
* Unified SAP SID	* Real SAP SID
SYS_CHA	CHA
* Customer	* Customer Application
Avantra 21.11	Avantra 21.11 (Generic)
SAP System Time Zone	* System Role
---	Test
Monitor Level	
Connected	

On the right side, there is a 'Responsibilities' section with a dropdown menu showing 'Administrator'.

SAP system

Standard edition

# Multi-level monitoring support

Deliver immediate observational insight for new systems

- SAP Systems can now be monitored even without credentials and transport
- Deliver value-add insights from the very start
- Monitoring level visible in list and detail views
- Mode is adjusted automatically based on level of visibility into the system

Unified SAP SID	Real SAP SID	Monitor Level
 AVA	AVA	Auth. & Deployed
 AVA_MII	MII	Connected
 AVA_PI7	PI7	Authenticated

## Connected

Basic monitoring mode.  
Connectivity checked on  
TCP/IP level.



## Authenticated

RFC / J2EE and DB users  
have been setup.  
Many checks are available  
now.



ABAP Only

## Auth. and Deployed

Transport has been deployed  
to ABAP systems.  
  
Full set of features and  
automations available.

Standard edition

# Native VMware integration

Treat your cloud and on-premise landscapes the same including end to end automation support

- VMWare is now natively integrated similar to cloud hyperscalers
- Metadata retrieval and visibility
- End to end start-/stop automation
- Direct link to vCenter
- Multi-customer, multi-tenant

Server: bazillus

Properties

Apply Monitoring Switch Maintenance Window Send To Agent Start Stop

Cloud server status: Running

## Server Info

### VMware Tools:

**Running Status:** RUNNING

**Version:** 10277

**Version Status:** UNMANAGED

**Installation Type:** OPEN\_VM\_TOOLS

### Related Objects:

**Datacenter:** Avantra Rack

**Cluster:** Cluster

**Host:** esx01.avantra.net

**Console:** [vm Go to vCenter...](#)

**Physical Memory:** 15.36 GB

**Agent Version:** 21.11.0 [Update Agent...](#)

Integrations x

Service Authentication

New Open Delete Copy More

Name	Type	Customer
vm Avantra VMware	VMware	Avantra 21.11
vm Test VMWare Connection	VMware	Avantra Customer

VM Service Authentication: Avantra VMware [VMware]

Apply Test

Properties

**Name** Avantra VMware

**Customer** Avantra 21.11

**Description**

VMware Properties

**Host** https://vcsa.

**User** @VSPHERE.LOCAL

**Password** ..... Show


**Trust all SSL Certificates** ☒






# Developer productivity enhancements

Enable operations teams to create and deploy enhanced business-led observations and automations


JavaScript based extensions are getting increasingly popular

- Significantly improved code to test to deploy timeframes (minutes to seconds)
- New test function to return JavaScript based custom check results instantly
- New simplified API for interacting with remote web services
- Improved and simplified API for calling SAP function modules
- All new streamlined API documentation with comprehensive example code


**Custom Check: ABAPUserSAPStarIsLocked [RUN\_JS/SAP System]**

 Apply
  Activate
  Deactivate
  Send To Agent
  Show Checks
 

▶ Execute test run

 AVANTRA

API Documentation
 

- Introduction
- JavaScript API
  - Basic Concepts
  - Returning Check Results
  - Making Database Queries
  - Interacting with Java Systems
  - Using Monitoring Parameters
  - Calling Programs
  - Calling SAP Function Modules
  - Calling Web Services
  - Notification Channel

API Documentation / JavaScript API / Calling SAP Function Modules

## Calling SAP Function Modules

Using SAP Remote Function Calls (RFC) type function modules is an easy way to retrieve SAP ABAP systems for use in Checks and also to perform actions and update data for us Automations.

SAP provides a library of standard, released function modules called SAP Business Application Programming Interfaces, or BAPIs for short, to access and manipulate standard SAP data your SAP ABAP development team will be able to create custom function modules that also call.

**NOTE**

Calling SAP Function Modules and access to the sap global object in particular is only available if script is running for a system type of **SAP System** or **SAP Instance**.

### Code Walkthrough

The object `rfcConnection` is the key object that represents a function module in SAP and provides the ability to set its parameters, to execute it and to retrieve the results.

#### Getting a function module object

There are two ways to create an `rfcConnection`:

1. By using the `rfcConnection` global object and calling the method `getFunction()` (with the default client) e.g.

```
const myFunction = rfcConnection.getFunction('Z_TEST')
```

2. By using the `sap` global object to specify a client using the `login()` method before the `getFunction()` call e.g.

```
const myFunction = sap.login('100').getFunction('Z_TEST')
```

**TIP**

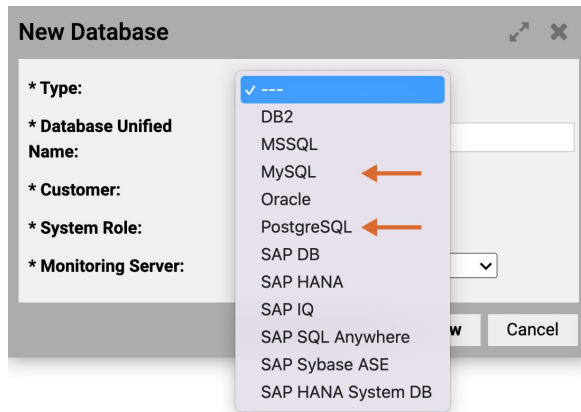
You can use the method `getClientIds()` to retrieve a list of clients on the SAP system to use `login()`



# Connect support for PostgreSQL & MySQL

Drive additional insight from business critical non-SAP systems

- New native support for popular open source databases PostgreSQL and MySQL
- Designed for customers to enhance and deploy their own observation requirements with ease
- More out of the box checks for PostgreSQL planned for 2022
- PostgreSQL support used for Avantra self monitoring on Linux  
(used within the Avantra self-monitoring Enterprise add in)



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HotNews analysis



SAP Notes  
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## Act



BPMN 2.0  
workflow  
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Ready to use  
SAP automation  
templates

## Platform



Automated server  
registration and  
monitored system  
auto-discovery



Multi-level  
monitoring support  
without credentials  
or transports



Native  
VMware  
integration



Developer productivity  
enhancements and  
enhanced APIs



Native connect  
support for  
PostgreSQL and  
MySQL

# Upgrade notes

- [Release 21.11](#) replaces 20.11
- Upgrade like applying a patch: typically less than a few minutes on the master server
- Previous Agent releases (20.11, 20.5) are compatible with Avantra server 21.11
- New transport for 21.11 are compatible for all supported ABAP basis releases  
The transport version must not be higher than the Agent version.
- Java Runtime Environment 8 is the recommended version to use with Avantra Server and Avantra Agents
- Avantra now supports PostgreSQL version 13



Thank you!



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## Technology Partners



servicenow



**SAP**® Certified  
Integration with SAP NetWeaver®

**SAP** Certified  
Integration with SAP S/4HANA



AVANTRA

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