SAP Hana Authentication

Thank you for your interest in authenticated scanning! When you configure and use authentication, you get a more in-depth assessment of your hosts, the most accurate results and fewer false positives. This document provides tips and best practices for setting up SAP Hana authentication for compliance scans.

A few things to consider

Why should I use authentication?

With authentication we can remotely log in to each target system with credentials that you provide, and because we're logged in we can do more thorough testing. This will give you better visibility into each system's security posture. Is it required? Yes, it's required for compliance scans.

Are my credentials safe?

Yes, credentials are exclusively used for READ access to your system. The service does not modify or write anything on the device in any way. Credentials are securely handled by the service and are only used for the duration of the scan.

What are the steps?

First, set up a SAP Hana user account and privileges (on target hosts) for authenticated scanning. Then, using Qualys Policy Compliance, complete these steps: 1) Add a SAP Hana authentication record. 2) Launch a compliance scan. 3) Run the Authentication Report to find out if authentication passed or failed for each scanned host.

SAP Hana Credentials

We've provided a set of scripts below to help you set up an account and privileges which must exist prior to running scans. These scripts require a super-user account. Please run the scripts provided, in the order shown. The role and scan account need to be created in the SYSTEM database to run successfully.

1) Create a Role for the Scan Account

This script creates a role for the user account to be used for scanning. It also grants privileges to the role needed for successful authentication and compliance scanning. We recommend creating a role called QUALYS_ROLE.

```
CREATE ROLE QUALYS_ROLE;
GRANT SELECT on SYS.USERS to QUALYS_ROLE;
GRANT SELECT on SYS.M_DATABASE to QUALYS_ROLE;
GRANT SELECT on SYS.M_DATABASES to QUALYS_ROLE;
GRANT SELECT on SYS.M_INIFILE_CONTENTS to QUALYS_ROLE;
GRANT SELECT on SYS.EFFECTIVE_ROLE_GRANTEES to QUALYS_ROLE;
GRANT SELECT on SYS.EFFECTIVE_PRIVILEGE_GRANTEES to QUALYS_ROLE;
GRANT SELECT on SYS.GRANTED_PRIVILEGES to QUALYS_ROLE
GRANT CATALOG READ TO QUALYS_ROLE;
```

```
GRANT SELECT on _SYS_SECURITY._SYS_PASSWORD_BLACKLIST to QUALYS_ROLE;
GRANT SELECT on SYS.AUDIT_POLICIES to QUALYS_ROLE;
```

2) Create a User Account

This script creates a restricted user account and alter the user with ENABLE CLIENT CONNECT. Please provide a password before running the script. The script also grants the role created in Step 1 to the account. Tip – We recommend creating an account called QUALYS_SCAN.

```
CREATE RESTRICTED USER QUALYS_SCAN PASSWORD <password>;
ALTER USER QUALYS_SCAN ENABLE CLIENT CONNECT;
ALTER USER QUALYS_SCAN DISABLE PASSWORD LIFETIME;
GRANT QUALYS_ROLE to QUALYS_SCAN;
```

3) Verify Privileges on the Scan Account

3a) Verify that you can log into the SAP Hana Database as QUALYS_SCAN and are able to successfully run the query below. If prompted for a password change, please update the password on the first login.

```
select count(1) from SYS.USERS;
```

3b) Verify that the qualys_scan account has all the privileges listed in the table below in order to run a successful compliance scan for the system database. Log into the instance using the Admin account, then run the following query to verify the privilege assigned to the 'QUALYS_SCAN' account.

```
select GRANTEE, PRIVILEGE, OBJECT_NAME from EFFECTIVE_PRIVILEGES where
USER_NAME = 'QUALYS_SCAN' and GRANTEE = 'QUALYS_SCAN';
```

Expected output:

Grantee	Privilege	Object Name
QUALYS_SCAN	CATALOG READ	
QUALYS_SCAN	SELECT	M_DATABASE
QUALYS_SCAN	SELECT	M_INIFILE_CONTENTS
QUALYS_SCAN	SELECT	EFFECTIVE_PRIVILEGE_GRANTEES
QUALYS_SCAN	SELECT	USERS
QUALYS_SCAN	SELECT	_SYS_PASSWORD_BLACKLIST
QUALYS_SCAN	SELECT	M_DATABASES
QUALYS_SCAN	SELECT	EFFECTIVE_ROLE_GRANTEES
QUALYS_SCAN	SELECT	AUDIT_POLICIES
QUALYS_SCAN	SELECT	GRANTED_PRIVILEGES

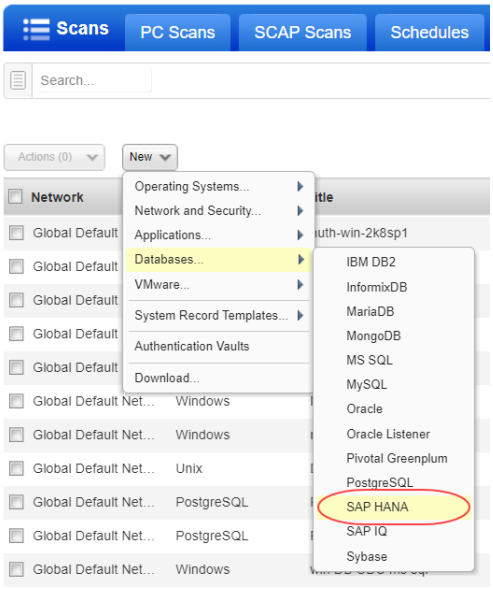
Did you get different results? Contact your SAP Hana DBA to ensure that privileges are set up correctly.

SAP Hana Authentication Records

You'll create SAP HANA authentication records in Qualys to associate credentials to hosts (IPs). You'll need to supply a user name and password (or use password vault), the database you want to authenticate to and the port the database is on. This record type is only available in accounts with PC or SCA, and is only supported for compliance scans.

How do I get started?

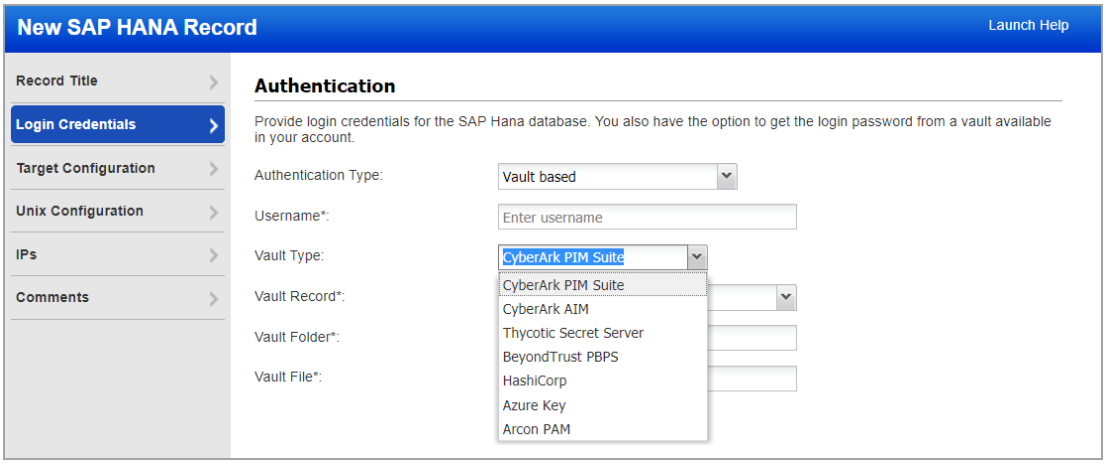
Go to **Scans** > **Authentication**, and then go to **New** > **Databases** > **SAP HANA**.



Can I access a password in a vault?

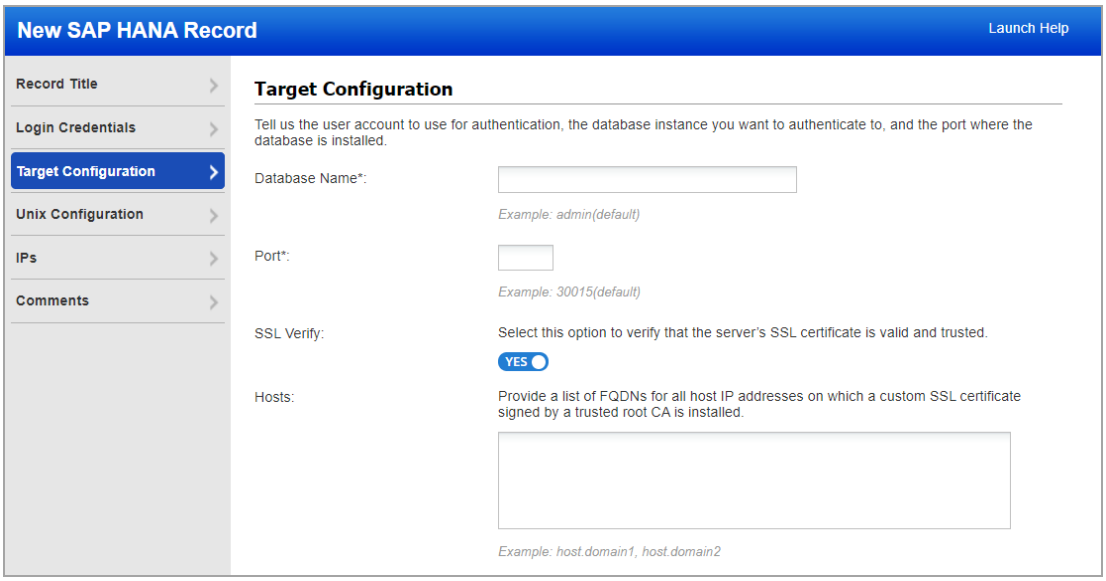
Yes. We support integration with multiple third party password vaults. Go to **Scans** > **Authentication** > **New** > **Authentication Vaults** and tell us about your vault system.

In the SAP HANA record, choose **Authentication Type: Vault based** on the **Login Credentials** tab and select your vault type and vault record. At scan time, we'll authenticate to hosts using the account name in your record and the password we find in your vault.



What database information is required?

On the **Target Configuration** tab, tell us the database name to authenticate to and the port the database is running on.



Tell me about SSL verification

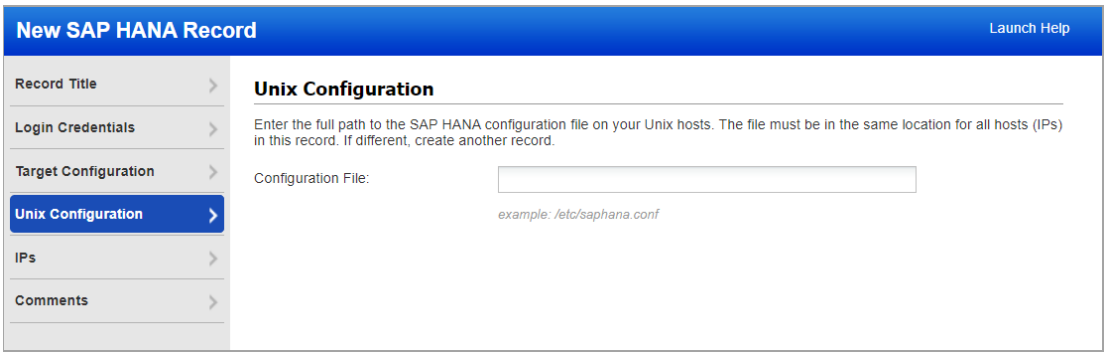
By default, the scanner will verify the SSL certificate used by the SAP HANA device to make sure the certificate is valid and trusted. You may want to clear this option to skip SSL verification if the device is not configured with a certificate, the certificate was not issued by a well-known certificate authority (CA) or the certificate is self-signed.

What do I enter in the Hosts field?

Enter a list of FQDNs for the hosts that correspond to all host IP addresses on which a custom SSL certificate signed by a trusted root CA is installed. Multiple hosts are comma separated.

Unix Configuration

On the **Unix Configuration** tab, enter the full path to the SAP HANA configuration files on your Unix hosts. These files are accessed to run certain checks. Ensure that files are in the same location for all the hosts that you want scan.



Which IPs should I add to my record?

Select the IP addresses for the SAP HANA databases that the scanning engine should log into using the specified credentials.

Last updated: April 30, 2021