

These instructions show you how to install and configure the Cloud Storage Backint agent for SAP HANA (Backint agent) on a Compute Engine VM that has SAP HANA installed.

For an overview of the Backint agent, see [Cloud Storage Backint agent for SAP HANA \(/solutions/sap/docs/sap-hana-operations-guide#backint_operations\)](/solutions/sap/docs/sap-hana-operations-guide#backint_operations) in the SAP HANA operations guide.

ature is in a pre-release state and might change or have limited support. For more information, see the [product launch \(/products/#product-launch-stages\)](/products/#product-launch-stages).

Before you install the Backint agent, the following prerequisites must be met:

- SAP HANA is installed. To install SAP HANA on Google Cloud, see [SAP HANA Deployment Guide \(/solutions/sap/docs/sap-hana-deployment-guide\)](/solutions/sap/docs/sap-hana-deployment-guide).

Before you can configure the Backint agent, you need to create a Cloud Storage bucket to hold the backups.

Depending on whether you need to be able to restore your backups to SAP HANA instances in a single region or to SAP HANA instances in other regions, you can define the bucket as either *regional* or *multi-regional*.

The Backint agent itself doesn't impose any restrictions on the type of bucket you use or where the bucket is located.

To create a Cloud Storage bucket, use the Cloud Console.

1. Open the Cloud Storage browser in Cloud Console.

[Open the Cloud Storage browser](https://console.cloud.google.com/storage/browser) (<https://console.cloud.google.com/storage/browser>)

2. Click **CREATE BUCKET**.
3. Name your bucket and then click **Continue**.
4. Follow the prompts to select your bucket options.
5. Click **Create**.
6. To configure bucket permissions, click the permissions tab. By default, as owner of the bucket, you have read-write access to the bucket. You can also give other members in your group or individual users to access your bucket.

The Backint agent is installed in the same shared file system as the SAP HANA database.

In an SAP HANA scale-out deployment, install the Backint agent on each node of the SAP HANA system. To simplify administration, you can store your configuration files in a shared location that is accessible to all of the nodes in your deployment, such as `/hana/shared`.

1. Connect to your VM by using SSH. From the Compute Engine [VM instances page](https://console.cloud.google.com/compute/instances) (<https://console.cloud.google.com/compute/instances>), you can click the SSH button for your VM instance, or you can use your preferred SSH method.
2. Switch to the SAP HANA system administrator.
3. Download and install the Backint agent.

The installation process:

- Downloads Backint agent and installs it in `/usr/sap/SID/SYS/global/hdb/opt/backint/backint-gcs`.
- Downloads a compatible version of the Java Runtime Environment.

- Sets up an executable script that invokes the program. Do not modify the executable script.
- Upon completion, issues a message instructing you to update the parameters.txt file and to set up authentication.

4. If SAP HANA is not running on Google Cloud or if you need the Backint agent to use a different set of resource permissions than the host VM uses, create a service account for the Backint agent.

a. Open the IAM & admin Service accounts page in Google Cloud Console.

[Go to the Service Accounts page \(https://console.cloud.google.com/iam-admin/serviceaccounts\)](https://console.cloud.google.com/iam-admin/serviceaccounts)

b. Click **+ CREATE SERVICE ACCOUNT**.

c. Specify a name for the service account and, optionally, a description.

d. Click **CREATE**.

e. On the **Service account permissions** panel, click **Continue** to create the service account without permissions.

f. As appropriate, grant users access to the service account.

g. Create [a service account key \(/iam/docs/service-accounts#service_account_keys\)](/iam/docs/service-accounts#service_account_keys) by clicking **CREATE KEY** and accepting JSON as the default. A private key is saved to your computer.

h. Click **Done**.

5. Upload the private key to the SAP HANA VM.

6. Grant the service account permission to use the Cloud Storage bucket that you created earlier:

a. Click on your bucket name in the Cloud Storage browser.

[Open Cloud Storage browser \(https://console.cloud.google.com/storage/browser\)](https://console.cloud.google.com/storage/browser)

b. Click the **Permissions** tab.

c. Click **Add members**.

d. In the **New members** field, enter the full email address of the service account. For example:

```
backint-test@my-project.iam.gserviceaccount.com
```

7. Configure the Backint agent.

- a. Use your preferred method to edit the `parameters.txt` file, which is installed in the following directory:

For descriptions of the configuration parameters, as well as performance recommendations, see [Configuration options for the Backint agent](/solutions/sap/docs/sap-hana-operations-guide#backint_config_opts) (`/solutions/sap/docs/sap-hana-operations-guide#backint_config_opts`).

- b. In `parameters.txt`, add the name of the Cloud Storage bucket to use for the backups.
- c. If you created a service account and private key for the Backint agent, add the path to the JSON file that contains the private key to `parameters.txt`.

8. Configure SAP HANA to use the Backint agent.

- a. Use SAP HANA Studio to set the following parameters in the `backup` section of the `global.ini` configuration file to the values shown in the table.

Parameter	Value
<code>catalog_backup_parameter_file</code>	<code>/usr/sap/<i>SID</i>/SYS/global/hdb/opt/backint/backint-gcs/parameters.txt</code>
<code>catalog_backup_using_backint</code>	<code>true</code>
<code>data_backup_parameter_file</code>	<code>/usr/sap/<i>SID</i>/SYS/global/hdb/opt/backint/backint-gcs/parameters.txt</code>
<code>log_backup_parameter_file</code>	<code>/usr/sap/<i>SID</i>/SYS/global/hdb/opt/backint/backint-gcs/parameters.txt</code>
<code>log_backup_using_backint</code>	<code>true</code>

- b. Use SAP HANA Studio to specify the same value for both `basepath_catalogbackup` and `basepath_logbackup` in the `persistence` section of the `global.ini` file. For example:

Name	Default	System
▼ [] persistence		
basepath_catalogbackup	\$(DIR_INSTANCE)/backup/log	● /hanabackup/log/HBA
basepath_databackup	\$(DIR_INSTANCE)/backup/data	● /hanabackup/data/HBA
basepath_databackup_ets	\$(DIR_INSTANCE)/backup/data_ets	
basepath_datavolumes	\$(DIR_GLOBAL)/hdb/data	● /hana/data/HBA
basepath_datavolumes_es	\$(DIR_GLOBAL)/hdb/data_es	
basepath_datavolumes_ets	\$(DIR_GLOBAL)/hdb/data_ets	
basepath_export	\$(DIR_INSTANCE)/work	
basepath_filedownload_rdsync	\$(DIR_GLOBAL)/hdb/data_rdsync/...	
basepath_fileupload_rdsync	\$(DIR_GLOBAL)/hdb/data_rdsync/...	
basepath_logbackup	\$(DIR_INSTANCE)/backup/log	● /hanabackup/log/HBA
basepath_logbackup_ets	\$(DIR_INSTANCE)/backup/log_ets	
basepath_logmirror	\$(DIR_GLOBAL)/hdb/logmirror	
basepath_logvolumes	\$(DIR_GLOBAL)/hdb/log	● /hana/log/HBA
basepath_logvolumes_es	\$(DIR_GLOBAL)/hdb/log_es	

9. Test the installation by creating a backup in the Cloud Storage bucket and restoring from the backup.
10. To support the Backint agent automatic update function, enable remote HTTP requests from the SAP HANA VM to <https://www.googleapis.com/>.
11. Optionally, enable Stackdriver Logging.
 - If SAP HANA is running on Google Cloud, add the `com.google.cloud.logging.LoggingHandler` handler to the `com.google.cloud.partners.handlers` property in the `/usr/sap/SID/SYS/global/hdb/opt/backint/backint-gcs/logging.properties` file.
 - If SAP HANA is running outside of Google Cloud, install Cloud SDK and configure the application-default login by using the `gcloud auth application-default login` (`/sdk/gcloud/reference/auth/application-default/login`) command.

If errors occur during the execution of a backup or a recovery, error messages are displayed in SAP HANA Studio or SAP HANA Cockpit, so check there first for information about the cause of an error. This information might be displayed in the `backup.log` and `backint.log` trace files. Be sure to select the relevant database name when multitenant database containers (MDC) are used.

The Backint agent also writes installation and operational events to files on the SAP HANA VM in the directory `/usr/sap/SID/SYS/global/hdb/opt/backint/backint-gcs/logs`.

If the Backint agent can't connect to the Cloud Storage bucket, review the configuration steps. In particular, check the following items:

- If you are using the default VM service account with the Backint agent, the access scope for **Storage** is listed as **Read Write** under **Cloud API access scopes** on the **VM instance details** page in the Cloud Console. If it is not, stop the instance and edit the access scope.
- If you created a service account for the Backint agent:
 - On the **Permissions** tab of the **Bucket details** page in the Cloud Console, the **Storage Object Admin** role is assigned to the service account.
 - You created a private key, stored on the SAP HANA VM, and correctly specified the path to the JSON file in the Backint agent configuration file, `/usr/sap/SID/SYS/global/hdb/opt/backint/backint-gcs/parameters.txt`.
- All parameters are specified correctly in both the `parameters.txt` Backint agent configuration file and the SAP HANA `global.ini` file.

If you get errors while multistreaming, change the number of streams to one (1) to see if the error is related to the number of streams.

For more information about Backint agent logging, see [Logging for the Backint agent](/solutions/sap/docs/sap-hana-operations-guide#backint_logging) (`/solutions/sap/docs/sap-hana-operations-guide#backint_logging`).

If you cannot resolve a problem with Backint agent yourself, you can open a support incident with SAP under component `BC-OP-LNX-GOOGLE`.

Include the following information:

- The HANA version
- The parameters file used for Backint
- The `global.ini` entries for backup
 - `backint_response_timeout`
 - `data_backup_buffer_size`
 - `parallel_data_backup_backint_channels`

For more information from SAP about getting support for SAP HANA, see the "Getting Support" section in the [SAP HANA Administration Guide](https://help.sap.com/hana/SAP_HANA_Administration_Guide_en.pdf) (https://help.sap.com/hana/SAP_HANA_Administration_Guide_en.pdf).