HYCU

HYCU for Google Artifact Registry

R-Cloud Module Guide

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About the module

With the R-Cloud (formerly HYCU Protégé) module for Google Artifact Registry, you can back up your SaaS application data securely and efficiently.

Prerequisites

Before you add the module to R-Cloud as a source, the following prerequisites described in this section must be fulfilled.

Authentication service account permissions

The authentication service account that you set while adding the SaaS module as a source in R-Cloud must be granted the minimum permissions set. The following permissions must be included:

- In each of the buckets or in the project where the bucket is created:
    - `storage.buckets.get`
    - `storage.objects.create`
    - `storage.objects.get`
- In the projects containing the Artifact Registry resources and projects where the new resources will be created:
    - `artifactregistry.dockerimages.get`
    - `artifactregistry.dockerimages.list`
    - `artifactregistry.repositories.create`
    - `artifactregistry.repositories.delete`
    - `artifactregistry.repositories.get`
    - `artifactregistry.repositories.list`
    - `artifactregistry.tags.delete`
- The Artifact Registry service account must be given the following permissions to export to and to read from the bucket:
    - `storage.objects.create`
    - `storage.objects.get`

Instead of granting the individual permissions, you can also assign the following roles:

- To the authentication service account:
    - Artifact Registry Admin in the projects that contain the Artifact Registry resources
    - Compute Admin in the projects that contain the Artifact Registry resources
    - Storage Admin in the project where the buckets are created, or in each of the buckets
- To the service account of the Artifact Registry resources:
    - Storage Object Admin in the project where your buckets are created, or in each of the buckets.

> **Note** Assigning roles might grant permissions that exceed the required minimum permissions for the service accounts.

Required APIs

- Artifact Registry API
- Compute API
- Google Storage API
- Service Usage API

Limitations

When adding the module to R-Cloud and while protecting the related SaaS application, the limitations described in this section apply.

- The following configurable metadata is not protected:
    - Immutable image tags
    - Docker images inside the remote repository
    - Docker images inside the virtual repository
- When creating a new Google Cloud Function, the Cloud Function automatically creates a Docker repository within the Artifact Registry. These automatically created repositories are not protected by the module.

    > **Note** If you plan to back up Cloud Functions, see the *HYCU for Google Cloud Functions* Module Guide.

- You cannot assign a policy that has Snapshot specified as the backup target type to this type of SaaS application.
- Docker images cannot be restored to a remote or to a virtual repository type. For these two repository types, the module can only back up and restore the repository configuration. If the Override Repository option is enabled while restoring, none of the potential Docker images will be restored.
- The virtual repositories with virtual upstream policies can only be restored in the same region as specified for the upstream policies. In this case, the region selection is disabled.
- Restoring the remote repositories from a multi-region environment to a single region is not supported.

Protecting data

R-Cloud starts protecting the data stored in your SaaS application after you add the module as a source to R-Cloud and assign a policy to the related SaaS application.

The following configurable data types are protected:

- Repository name
- Repository format
- Repository mode
- Repository region
- Multi-region repository
- Repository description
- Repository labels
- Repository cleanup policies
- Repository encryption
- Virtual repositories configuration
- Remote repository configuration
- Docker images

For details on how to add the module as a source, see *HYCU R-Cloud Help*.

Backing up data

R-Cloud allows you to back up the following resource types:

- Artifact Registry repositories (root)
- Artifact Registry Docker images (resource)

For details on how to configure the backup for the SaaS application data, see *HYCU R-Cloud Help*.

Setting up automatic policy assignment

To set up automatic policy assignment, add the `hycu-policy` label to your Artifact Registry repositories in the Google Cloud console.

Procedure

1. In the Google Cloud console, select the Artifact Registry repository for which you want to set up automatic policy assignment.
2. In the info panel, click **Labels**, and then click **Add label**.
3. Enter the key and the value, and then click **Save**.

For details about setting up automatic policy assignment, see *HYCU R-Cloud Help*. For details about adding labels to Artifact Registry repositories, see Google Cloud documentation.

Restoring data

The module supports the following restore scenarios:

- Restoring a repository:
  - Override Repository: If a resource with the same name already exists, the override option will remove and replace the existing resource with the restored one.
  - Restore Repository Only: This option will only restore the repository configuration. The potential Docker images within the repository will not be restored.
  - Destination Project: Defines the name of the project in which the repository should be restored.
  - Repository name: Defines the name of the restored repository.

> **Note** Once the name is defined, the repository can no longer be renamed.

  - Destination Region. The name of the region, in which the user plans to restore the repository.

- Restoring a Docker image:
  - Override Docker Image. If a resource with the same name already exists, the override option will remove and replace the existing resource with the restored one.
  - Destination Repository. The name of the repository in which the user plans to restore the Docker image.
  - Tags. Tags that you plan to assign to the restored Docker image.

Provide feedback

For any suggestions and comments regarding this product or its documentation, send us an e-mail to:

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We will be glad to hear from you!

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