

Sharing Types Across Projects

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This page describes how to share [types and type providers \(/deployment-manager/docs/fundamentals#types\)](#) that belong to your project with other projects. For example, assume you have a project that is responsible for maintaining pre-approved type providers for your company. You want to be able to share these type providers from that project with other projects and to use the project as a central repository of types. Similarly, you can also use this method to share composite types across projects.

To set up access, a project owner from the project that owns the type will need to grant the `deploymentmanager.typeViewer` (beta) role to the service account of the project that wants to consume the types. They also need to grant the role to users who want to view and list types from another project..

Before you begin

- If you want to use the command-line examples in this guide, install the `gcloud` [command-line tool \(/sdk\)](#).
- If you want to use the API examples in this guide, set up [API access \(/deployment-manager/docs/reference/latest\)](#).
- Read about Deployment Manager [configurations \(/deployment-manager/docs/configuration/create-basic-configuration\)](#).
- Read about [Types \(/deployment-manager/docs/fundamentals#types\)](#).
- Read the [Identity and Access Management \(IAM\) \(/iam\)](#) documentation.

Limitations

The following are restrictions for using this feature:

- Granting the `deploymentmanager.typeViewer` role grants permissions to all types in the specific project. It is not possible to limit sharing to individual types.
- It is not possible to grant this role to [allAuthenticatedUsers](#) (`/iam/docs/overview#allauthenticatedusers`) or [allUsers](#) (`/iam/docs/overview#allUsers`).

Granting a project access to use types

To grant access to types that belong to other projects, the owner of the project that owns the types in question must grant the `deploymentmanager.typeViewer` role to the [Google APIs service account](#) (`/deployment-manager/docs/access-control#access_control_for_deployment_manager`) of the project that wants to consume the types.

1. Go to the IAM page in the Cloud Console of the project that will be consuming the types.

[Go to the IAM page](https://console.cloud.google.com/iam-admin/iam/) (`https://console.cloud.google.com/iam-admin/iam/`)

2. If prompted, select your project from the list.

3. Look for the **Google APIs service account**, which has the email address in the following format:

```
[PROJECT_NUMBER]@cloudservices.gserviceaccount.com
```

★ **Note:** This email address requires the project number, not the project ID. To learn how to identify the project number, see [Identifying projects](#) (`/compute/docs/projects#projectids`).

4. Make note of the email address above. Next, a project owner of the project where the desired types live can grant the Google APIs service account the `roles/deploymentmanager.typeViewer` role.

[Consolegcloud](#) (#gcloud)[API](#) (#api)

- a. While still in the Google Cloud Console, go to the IAM page of the project that contains the types you want to share.

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

- b. Select the project from the project list.
- c. Click the **Add** button to add a new member.
- d. In the **Members** box, enter the email address of the service account.
- e. Expand the **Roles** dropdown and select **Other > Deployment Manager Types Viewer (beta)**.
- f. Click **Add** to add the account.

Using types from other projects in your configuration

Once you have access to your types, you can specify the type in configurations using the syntax. For composite types

(/deployment-manager/docs/configuration/composite-types/creating-composite-types):

```
[PROJECT_ID]/composite:[TYPE]
```

For type providers (/deployment-manager/docs/configuration/type-providers/process-adding-api):

```
[PROJECT_ID]/[TYPE]:[COLLECTION]
```

Where:

- [PROJECT_ID] is the project ID that owns the type.
- [TYPE] is the name of the type provider or the composite type.
- [COLLECTION] is the specific resource you are creating. This is only applicable for base types. For more information on specifying base types, read Calling a Type Provider in a Configuration (/deployment-manager/docs/configuration/type-providers/calling-type-provider).

For example, if the project ID is `my-type-repository`, then you might provide the following type specification:

```
resources:
  - name: a-special-vm
  - name: my-type-repository/composite:autoscaled-igm
properties:
  ..
```

Granting users the ability to list and view types

Granting the project's service account the `deploymentmanager.typeViewer` role allows the project to deploy these types in your configurations but does not allow users to view or list these types. If you want to grant individual users the ability to view types, you must grant the `deploymentmanager.typeViewer` role to each user.

For example, in order for Jane to run the `gcloud beta deployment-manager types list --project another-project` command for a project that doesn't belong to her, the owner of `another-project` must grant Jane the `deploymentmanager.typeViewer` role.

Using the `gcloud` tool, you can grant Jane the role like so:

```
gcloud projects add-iam-policy-binding another-project \
  --member user:jane@gmail.com --role deploymentmanager.typeViewer
```

For comprehensive instructions on adding and removing roles from users, read the documentation for [granting, changing, and revoking access to project members](/iam/docs/granting-changing-revoking-access) (`/iam/docs/granting-changing-revoking-access`).

What's next?

- Read about other [IAM roles](/iam/docs/understanding-roles) (`/iam/docs/understanding-roles`) you can grant.
- Learn more about [service accounts](/compute/docs/access/service-accounts) (`/compute/docs/access/service-accounts`).

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