Getting Started with Database-as-a-Service

VMware vFabric Data Director 2.0

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**Introduction**

One of the key benefits of cloud computing is the ability to deliver the technology needs of a business as-a-service. This model enables IT to maintain control and compliance over the environment and allows business users to access the services on-demand. Database-as-a-service enables IT to deliver database infrastructure and services to application developers’ on-demand, and provide better quality of service. Key use cases include the ability to:

- Provide developers with a self-service portal they can use to provision the required database, without IT intervention.
- Enable IT to quickly provide new database environments as business needs change.
- Allow IT to define policies and enforce granular roles and security that enable them to control access to resources and tasks.
- Allow developers to backup, restore, save database states, and develop and test applications against the provisioned databases.

**Prerequisites**

- You have completed the tasks in Getting Started with Database provisioning, Getting started with Database Ingestion, and Getting Started with Database Lifecycle Management.
- Ensure that the DevelopmentRB resource bundle has the required storage before you start this exercise. It is critical that you allocate 300GB for data storage and 150GB for backup storage.

To edit the resource bundle

1. Log in to the console as a system administrator.
2. Go to System->Manage and Monitor->Resource Bundle.
3. Right-click the DevelopmentRB resource bundle and select Properties.
4. Change the database storage allocation to 300GB.
   
   **NOTE:** If you do not have enough storage, delete the databases in the productionRB to free up storage.
5. Change the backup storage to 150GB.

**Scenario Workflow**

The scenario consists of the following steps:

1. Setting up Database-as-a-Service environment.
   
   We will walk you through the steps required to setup the DBaaS environment. The DBaaS environment is setup by the organization administrator. The steps include allocating resources, setting up roles, and assigning users permissions.

2. Using the self-service portal to deliver DBaaS.

   In this step, you will log in as one of the DBaaS users and walk through the experience of self-service provisioning and database management.
By the end of this session you will know how to:

- Set up a DBaaS environment that will enable IT to deliver database services to the business using self-service.
- Use a self-service portal to deliver database services to end-users.

Setting up Database-as-a-Service Environment

In this exercise, you will set up the development organization for self-service. The steps to setup the organization for self-service will be done by the organization administrator.

The administrator will perform the following tasks:

1. Enable templates in the organization.
2. Create one Database Group named ORCLDev.
3. Create a self-service role.
   a. This role will allow users to:
      i. Use resources allocated to just the ORCLDev database group.
      ii. Provision Oracle database using the template.
      iii. Backup the database.
      iv. Restore the database to a point-in-time.
      v. Clone the database.
      vi. Monitor statistics.
      vii. Save database to a catalog.
      viii. Provision database from the catalog.
4. Create a self-service user and assign the user to the role.

Once these tasks are completed, the self-service user can log in to the portal and perform the tasks in step 3-a above.

Enable Templates in the Organization

Organization administrators can choose which templates to enable for use within the organization. This enables administrator to provide an adequate number of pre-configured environments for the self-service users.

Before you can enable a template within the organization, system administrator should have already assigned the template to the organization resource bundle. This step was completed as part of the provisioning workflow.

To enable the template within the organization:

1. Log in to Data Director as the Organization Administrator for the development organization.
2. Click on Organization Settings.
3. On the left-pane click on Resource bundles.
4. On the right pane, right-click the resource bundle and select Enable DB templates.
5. Select the Oracle template from the list and click Enable.
6. Click **Close**.
7. In the task pane on the right, you will see the progress.
8. Once the task is completed the template is ready for use within the organization.

**Create ORCLDev Database Group**

To create a database group, you must be logged in as an organization administrator. If you have an ORCLDev database group already, you can skip this section and reuse that database group.

To create a database group:

1. Log in to Data Director as the Organization Administrator for the development organization.
2. Click the **Manage & Monitor** tab.
3. Click the **Database Groups** tab.
4. Click the plus (+) icon to create a database group.
5. Specify the following information in the Create Database Group wizard:
   a) **Name and Description** Type ORCLDev and click **Next**.
   b) **Resource Bundle** Select the DevelopmentRB resource bundle and click **Next**.
   c) **Resources**
      i. **Network**. Select the network from the drop-down menu.
      ii. **CPU & Memory**. Leave the priority at the default value.
      iii. **Database Storage**. Specify at least 250GB for data.
      iv. **Backup storage**: 150GB for backup.
      v. **Click Finish**.

Next you will create the self-service role.

**Create a Role**

To create a role, you must be logged in as an organization administrator.

1. Click **Organization Settings**.
2. In the left pane, expand **Users and Roles** and click **Roles**.
3. On the right pane, click the (+) icon to **Create a Role**.
4. Type in a name, for example: **ORCLDevSelfServiceRole**.
5. Leave the status as **Enable**.
6. Leave all the permissions unchecked in the **Organization** tab.
7. Click the **Database Group** tab.
8. Click **Add** and select the ORCLDev database group from the list.
9. Set the permissions for the database group.
10. Click on the **Templates** tab.
11. Click **Add**.
   
a. In the **Resource Templates** tab, select **Medium and Large**.
   
b. Click on the Backup Template tab, select **Standard** (Auto Storage Management).
12. Click **Ok** to go back to main dialog, assign permissions to each template.
13. Confirm by clicking **OK**.

At this point, the role has been successfully created.

Next you will create a self-service user and assign the user to this role.

**Create a Self-Service User**

To create a self-service user, you must be logged in as the organization administrator.

1. Click on **Organization Settings**.
2. In the left pane, expand **Users and Roles** and click **Users**.
3. On the right pane, click the (+) icon to **Create a User**.
4. In the dialog box, fill in the required fields under **Credentials and Contact Information**
   
   For user name, use the following format: **username@domain.com**.
   
   Make a note of the user name and password for later reference.
5. Under **Permissions**, select **Grant roles now**, and click **Edit**.
6. Select role **ORCLSelfServiceRole**.
7. Click **Ok**.
Use Self-Service Portal to Deliver Database Services to end-users

In this exercise, you will log in as the self-service user and perform the self-service tasks.

1. Login as the self-service user to the portal.
   Notice that the user has access only to the ORCLdev database group.

2. Perform the following actions as a test:
   a. Create an Oracle database (Pick any configuration).
   b. Create an external backup.
   c. Create a snapshot.
   d. Create a linked clone.
   e. Restore the database.

   NOTE: You can do a point in time restore only if you choose the standard backup template.

   f. Save the database state to the catalog as follows:
      I. Right-click on the database and select Add to Catalog.
      II. In the dialog box, enter a new name or leave it at the default.
      III. For the Add action, select Clone source to catalog and choose linked clone.
      IV. Click OK.

   g. To see the catalog item, click on the organization name in the right pane, and go to the Catalog tab.

   h. Provision the database from the catalog.
      i. Once saved into the catalog, you can re-provision the database.
      ii. To re-provision the database, go to Catalog tab.
      iii. Select the database from the catalog.
      iv. Right-click the database and select Create database based on.

   h. Edit Permission to the catalog database to allow specific database services for specific users.
Summary
The exercise demonstrated how, using vFabric Data Director, you can:

- Create a DBaaS environment.
- Allow users to do self-service provisioning and database management.