Deploying the Delphix Dynamic Data Platform AWS Marketplace Image
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INTRODUCTION

This document describes how to deploy the Delphix Dynamic Data Platform for AWS from the Marketplace.

Please review the Installation and Initial Configuration Requirements prior to deploying the Delphix Dynamic Data Platform for AWS from the AWS Marketplace.

Additionally, as outlined in Virtual Machine Requirements for AWS/EC2 Platform, use these guidelines when configuring your Delphix Engine during the Manual Deployment option.

Other items to consider:

● VPC to be used when launching the instance.
● Subnet placement - Select the same subnet where your non-production target EC2 instances exist (or will exist) to maximize performance.
● Security Group settings
  o Select the same Security Group that your current (or future) non-production EC2 compute nodes utilize
  o You must modify the security group to allow access to all of the networking ports used by the Delphix engine and the various source and target platforms. See General Network and Connectivity Requirements for information about specific port configurations.
● Storage Allocation
  o All data storage volumes must be EBS volumes
  o Allocate a minimum of four (4) EBS volumes to accommodate storage capacity needs.
  o Provisioned IOPS EBS volumes are highly recommended.
  o Utilize the Delphix AWS Storage Calculator to assist in determining your initial storage configuration.
**PREREQUISITES**

- Make sure that the Amazon account you are using to deploy your Delphix engine has an appropriate level of enablement to subscribe to the Delphix Dynamic Data Platform for AWS subscription.
- We recommend that you have experience launching and configuring EC2 instances within your AWS environment.
- To properly size the initial storage capacity and determine the number and size of EBS Provisioned IOPs Volumes required, download and utilize the Delphix Dynamic Data Platform – AWS Storage Calculator
  - We recommend that you create an inventory list of your intended Data Sources (dSource). A Data Source is typically a production database that is linked to the Delphix Engine, enabling you to create virtual, full, read-write copies of the Source within minutes.
  - The inventory list should include the Database Name, Database Platform (i.e. Oracle, MS-SQL etc.), current size (in GB), estimated # of virtual copies and retention period (in days) of snapshots (backup copies).
- VPC, Subnet(s) and Security Group(s)
  - Using the Delphix Dynamic Data Platform for AWS will require connections to source and target database servers. Such connections require various ports to be open, enabling communications. For a detailed list of the network and port requirements per database platform please see the following:
    - [Network and Connectivity Requirements for Oracle Environments](#)
    - [Network and Connectivity Requirements for SQL Server](#)
  - Based on the above requirements, your Security Group settings will need to be updated to accommodate the necessary connections.
  - We recommend that you deploy the Delphix Engine instance in the same VPC/subnet in which your Virtual Databases (VDBs) will be created. Provisioning a VDB requires a compute instance running the same database platform as the source. Please note, however, that the target compute instance only needs storage to accommodate the OS, database platform binaries etc., as Delphix delivers all of the data files.

**PROCEDURE**

The following sections will detail how to:

- Subscribe to the Delphix Dynamic Data Platform Marketplace Image
- Launch the Delphix Engine
- Configure the Delphix Engine
SUBSCRIBE TO THE DELPHIX DYNAMIC DATA PLATFORM MARKETPLACE IMAGE

1. Log in to the AWS Console at [https://aws.amazon.com/console](https://aws.amazon.com/console)
2. Navigate to the AWS Marketplace.
3. In the Search field enter Delphix.
5. Review the Delphix Dynamic Data Platform information contained on the initial Marketplace page.

6. After you have reviewed the information, click Continue.

7. Review the software subscription information, make sure you select the Manual Launch tab and then select: Accept Software Terms.

8. Upon Accepting the Software Terms – your subscription will be enabled which will take a few minutes.
9. From the Subscription page click **Return to Product Page**.

10. Upon return to the **Product Page** and once your subscription has been enabled you will see **Launch with EC2 Console** enabled in all of the available Regions.

**LAUNCH THE DELPHIX ENGINE**

1. Select Launch with EC2 Console in the desired Region.

2. Launching will direct you to the standard EC2 instance launch process. The default and recommended instance type for the Delphix Dynamic Data Platform is an **r3.4xlarge**. This provides adequate compute and memory resources for a wide variety of workloads.

3. Verify that the instance type is **r3.4xlarge**.
4. Upon validation of the instance type, select **Next: Configure Instance Details**.

5. Configuring Instance Details:
   a. Set number of instances to 1
   b. Purchasing option: Leave “Request Spot Instances” unchecked
   c. Network: **Select the VPC** into which the instance will be deployed
   d. Subnet: **Select the Subnet** into which the instance will be deployed
   e. Auto-assign Public IP: If Yes: **Enable**, If No, **Disable**
      **Note**: Choosing **Disable** for this tutorial is not recommended. Please only disable Public IP auto-assignment if you understand the requirements of accessing the Delphix Engine via your browser through a Virtual Private Gateway or other VPN option.
   f. Placement group: **Optional** (Default is No placement group)
   g. IAM Role: **None**
   h. Shutdown behavior: **Stop**
   i. Enable termination protection: **Yes** (click check box) – recommended to ensure the Delphix Engine is not accidentally terminated.
   j. Monitoring: **Optional**
   k. EBS-optimized instance: **Yes** (click check box)
   l. Tenancy: **Shared** – Run a shared hardware instance
m. Network Interfaces. Note: This option will not appear if you chose a default subnet. In this case, option #1 below will apply.
   i. Eth0 (Choose option 1 or 2 below - #2 recommended for consistency)
      1. Auto-assign (default if using DHCP)
      2. Enter static IP in Primary IP field.

6. Upon review/completion of the **Configure Instance Details** page, click **Next: Add Storage**.

7. By default, the Delphix instance includes a 150GB OS volume. Ensure that this volume is set as a **General Purpose SSD (GP2)** type.
   a. Using the Delphix Dynamic Data Platform Storage Calculator for AWS, enter information from your predetermined inventory into the worksheet.
   b. This will automatically calculate the number, size and IOPs required for the EBS volumes needed.
c. Example using the calculator:

<table>
<thead>
<tr>
<th>DB Name</th>
<th>DB Type</th>
<th>DB Source Size (GB)</th>
<th>Est. # of Virtual DBs</th>
<th>Retention for Snapshots (Days)</th>
<th>Delphix Storage (GB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>oradb1</td>
<td>Oracle</td>
<td>2500</td>
<td>5</td>
<td>14</td>
<td>3000</td>
</tr>
<tr>
<td>sqldb1</td>
<td>MS-SQL</td>
<td>1500</td>
<td>5</td>
<td>14</td>
<td>1800</td>
</tr>
<tr>
<td>sqldb2</td>
<td>MS-SQL</td>
<td>150</td>
<td>5</td>
<td>14</td>
<td>180</td>
</tr>
</tbody>
</table>

**Totals**

<table>
<thead>
<tr>
<th># of EBS Volumes</th>
<th>4150</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size per Volume</td>
<td>1250</td>
</tr>
<tr>
<td>IOPs per Volume</td>
<td>1000</td>
</tr>
<tr>
<td></td>
<td>4980</td>
</tr>
</tbody>
</table>

d. In the above example there are three (3) source databases listed with current size. Additionally, estimates for 5 virtual copies for each as well as a 14-day retention period for snapshots/backups. This auto-calculates the information needed to add volumes. In this case we will add four (4) EBS – Provisioned IOPS volumes each being 1250GB with 1000 IOPS.

**NOTE:** This calculator is only for estimating your anticipated Storage Size and IOPS needs. Manual adjustment may be required prior to or after launch depending on your storage and performance needs.

8. Click **Add New Volume**. The new volume will be created using the specifications in the estimation provided.

   a. Volume type: **EBS**
   b. Device: use default provided
   c. Size: **1250**
   d. Volume type: **Provisioned IOPs SSD (IO1)**
   e. IOPS: **1000**
   f. Delete on Termination: Optional. If you do not set this option and the Delphix Engine is terminated, the EBS Volumes will persist and will need to be manually removed.
   g. Encrypted: Optional
9. Follow the above procedure for adding EBS volumes equal to the number specified in the calculator. Based on the above example the storage configuration would look as follows:

Step 4: Add Storage
Your instance will be launched with the following storage device settings. You can attach additional EBS volumes and instance store volumes to your instance, or edit the settings of the root volume. You can also attach additional EBS volumes after launching an instance, but not instance store volumes. Learn more about storage options in Amazon EC2.

<table>
<thead>
<tr>
<th>Volume Type</th>
<th>Device</th>
<th>Snapshot</th>
<th>Size (GB)</th>
<th>Volume Type</th>
<th>Throughput (GB/s)</th>
<th>Delete on Termination</th>
<th>Encrypted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Root</td>
<td>/dev/xvdz</td>
<td>snap-1644a645</td>
<td>150</td>
<td>General Purpose SSD (IOPS)</td>
<td>450 / 3000</td>
<td>Yes</td>
<td>Not Encrypted</td>
</tr>
<tr>
<td>EBS</td>
<td>/dev/xvdb</td>
<td>Search (case-sensitive)</td>
<td>1250</td>
<td>Provisioned IOPS SSD (IOPS)</td>
<td>1000</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>EBS</td>
<td>/dev/xvdb</td>
<td>Search (case-sensitive)</td>
<td>1250</td>
<td>Provisioned IOPS SSD (IOPS)</td>
<td>1000</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>EBS</td>
<td>/dev/xvdb</td>
<td>Search (case-sensitive)</td>
<td>1250</td>
<td>Provisioned IOPS SSD (IOPS)</td>
<td>1000</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

General Purpose (SSD) volumes provide the ability to burst to 3000 IOPS per volume, independent of volume size, to meet the performance needs of most applications and also deliver a consistent baseline of 3 IOPS/GB. Set my root volume to General Purpose (SSD).
Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage. Learn more about free usage tier eligibility and usage restrictions.

10. Validate that your storage configuration matches the output from the calculator. Once validated click **Next**: Tag instance.
11. You may provide a name to your Delphix instance by entering information in the **Value** field corresponding to the **Key** "Name".

Step 5: Tag Instance

A tag consists of a case-sensitive key-value pair. For example, you could define a tag with key "Name" and value "Webserver". Learn more about tagging your Amazon EC2 resources.
12. After providing the instance with a Name, click Next: Configure Security Group

   a. Assign a security group:
      i. Create a New security group
   o Select an existing security group if you already have one that meets Delphix requirements. See the General Network and Connectivity Requirements page for more details on required and recommended ports for general Delphix usage.

   b. For the purposes of this demonstration, you can create or use a security group with “All traffic” open to anywhere.
13. Click **Review and Launch**.

14. Verify the Delphix Instance details and click **Launch**.
15. Select a new or existing key pair in order to launch your instance.
   a. Click the “I acknowledge” check-box and click Launch Instances.

16. Click View Instances.
17. To complete the initial Delphix Engine configuration, wait for your instance to be up and running. You will see status on the Instances page. Note that it can take up to 15 minutes for the first launch of Delphix, and even if the status of the server is “running” it may not yet be ready.
CONFIGURE THE DELPHIX ENGINE

1. Connect to your running Delphix instance by using a web-browser and using the Public IP address or DNS name noted in the Instance Description.
2. Upon successful connection the browser will automatically redirect to the Delphix Setup Page.
3. Sysadmin account setup.
   a. Enter email address for sysadmin account.
   b. Enter new password for the sysadmin account.
   c. Confirm new password.
   d. Click Next.
4. Set Time
   a. If you know your NTP server information or wish to use a public NTP server, check the radio button for Set NTP Server.
   b. If you do not know your NTP server you may Manually Set Date & Time.
   c. Click Next.
5. Set Network
   a. Network interface is automatically configured.
   b. DNS Services: Optionally enter custom DNS Servers, otherwise AWS will assign standard DNS Servers.
   c. Click **Next**.
6. Storage – based on the EBS volumes you added during instance launch, you will see the same number of data drives to be configured in Delphix. (In our example: four 1.25TB drives)
   a. Verify the number of drives, size and usage assignment as Data.
   b. Click **Next**.
7. Serviceability
   a. Allows you to configure a Web Proxy (if necessary)
   b. Phone Home Service: click check-box to enable (recommended)
   c. SMTP – If you have a valid SMTP server, you can check this option and enter connection details. This allows the Delphix Engine to send informational and error emails.
   d. Click Next.
8. **Authentication Service**
   a. If you want to integrate the Delphix Engine with your LDAP platform for extended authentication services, click the check-box and complete the information (Optional)
   b. Click **Next**.
9. Registration
   a. Registering the Delphix Engine
      i. If you have already requested and have an enabled Support Account you may enter your account email and password and click **Register**.
      ii. Otherwise you may Register the Engine at a later time.
      iii. Click **Next**.
10. Final Step – Validation
   a. The final page in the setup process is a validation page. It will display all of the configuration options currently set.
   b. To change any of the options click **Modify** in the desired section, otherwise
   c. Click **Finish**.
11. Save Configuration
   a. Click Yes.

12. Once Setup has completed you will see **Successful Configuration**.
13. The browser will automatically redirect to the Delphix Engine login screen.
14. The first time you login into the Delphix Engine follow these steps:
   a. Enter the default Administration User: delphix_admin
   b. Enter the default password: The Instance ID for your Delphix Engine
      i. Note: your instance ID can be found on the Instances section of the AWS EC2 Management Console.
   c. You will be prompted for the following:
      i. Email address for the delphix_admin account.
      ii. Enter new Password
      iii. Confirm new Password (Note: From now this is the password you’ll use to login into the Delphix Engine)
      iv. Click Continue.

COMPLETION

Congratulations! You have successfully deployed the Delphix Dynamic Data Platform in AWS.

You can proceed to https://docs.delphix.com and browse the Virtual Database Management with the Delphix Engine section to configure your Database Source and Target Environments and begin virtualizing databases.

Optionally, you can also check out our tutorial for setting up your own Oracle Source and Target Database servers and performing a start-to-finish virtualization test.