Apigee™

Apigee Edge On-Premises Deployment Kit

v4.14.04.00

April 30, 2014

Developer Channel Services Installation and Configuration Guide

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Overview

Apigee Developer Channel Services is a template portal for content and community management. It is based on the open source Drupal (www.drupal.org) project. The default setup allows creating and managing API documentation, forums, and blogs. A built-in test console allows testing of APIs in real time from within the portal.

Apart from content management, Developer Channel Services has various features for community management such as manual/automatic user registration and moderating user comments. Role-Based Access Control (RBAC) model controls the access to features on the Developer Channel Services. For example, you can enable controls to allow registered user to create forum posts, use test consoles, and so on.

This version of this document has details specific to **version 4.14.04.00**. Any references that are specific to previous versions are oversights and should be reported as bugs.

Note: Starting with the release of version 4.14.04.00, Apigee Edge releases use the following version numbering scheme: V.YY.MM.##, where:

- V specifies the major version number.
- YY and MM specify the year and month of the release.
- ## is the service pack number. Initial releases are V.YY.MM.00.

Supported Network Topologies

The components of the Apigee Developer Channel Services can be installed in several different network configurations, or *topologies*, including:

- **Single machine** - All Apigee Developer Channel Services components installed on a single machine.
- **Small** - The Drupal MySQL database is installed on a separate machine from the other components.
- **Medium** - Multiple Apache Servers installed with a sync script to keep them updated.
- **Large** - Multiple Apache Servers installed with NFS, GlusterFS, S3, or other type of syncing mechanism.

Note: These four topologies are the only topologies supported by Apigee. If you use a different network topology, Apigee might not be able to support it.

The following figure shows the single-machine topology where all components of the Apigee Developer Channel Services are installed on a single machine:

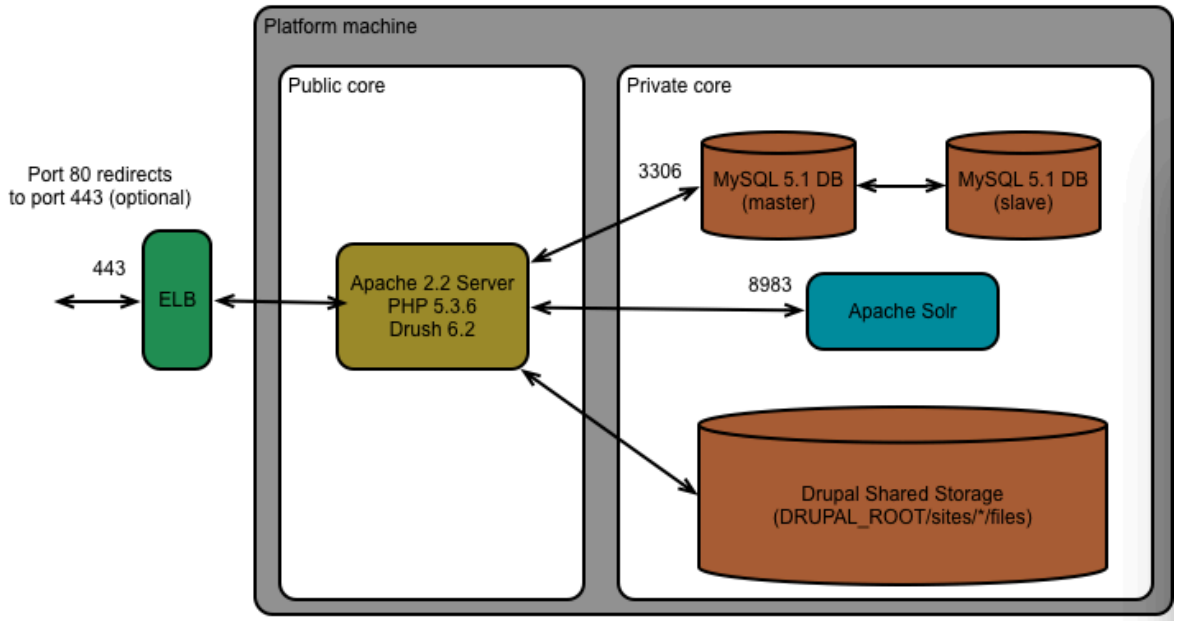


Figure 1: Single-machine topology

In this figure, the Public core contains the components that are publicly accessible. The Private core contains components that are not publicly accessible.

Table 2: Apigee Developer Channel Services components

Component	Description	Installed by
ELB	An Enterprise Load Balancer (ELB).	Your network provider. For example, both Amazon and Rackspace provide Enterprise load balancers for use with their instances.
Apache Server Version 2.2	Depending on your topology, you can have a single Apache server instance (single machine and small) or multiple (medium and large). For medium and large, you must provide a way to synchronize the instances.	Apigee
MySQL 5.1	The database used by Drupal. For the small, medium, and large topologies, the MySQL instance is on a different machine from the other components.	Person doing the install, or connect to an existing installation.

Component	Description	Installed by
Apache Solr	The Drupal search server. Apache Solr uses the Apache Lucene search library.	Apigee
Drupal shared storage	The shared storage area used by Drupal for uploaded files, static scripts, and other information.	Apigee
Drush 6.2	The Drupal command line interface.	Person doing the install.
PHP 5.3.6	Server-side scripting engine.	Apigee

Shown below is the small topology where the MySQL server resides on a separate machine:

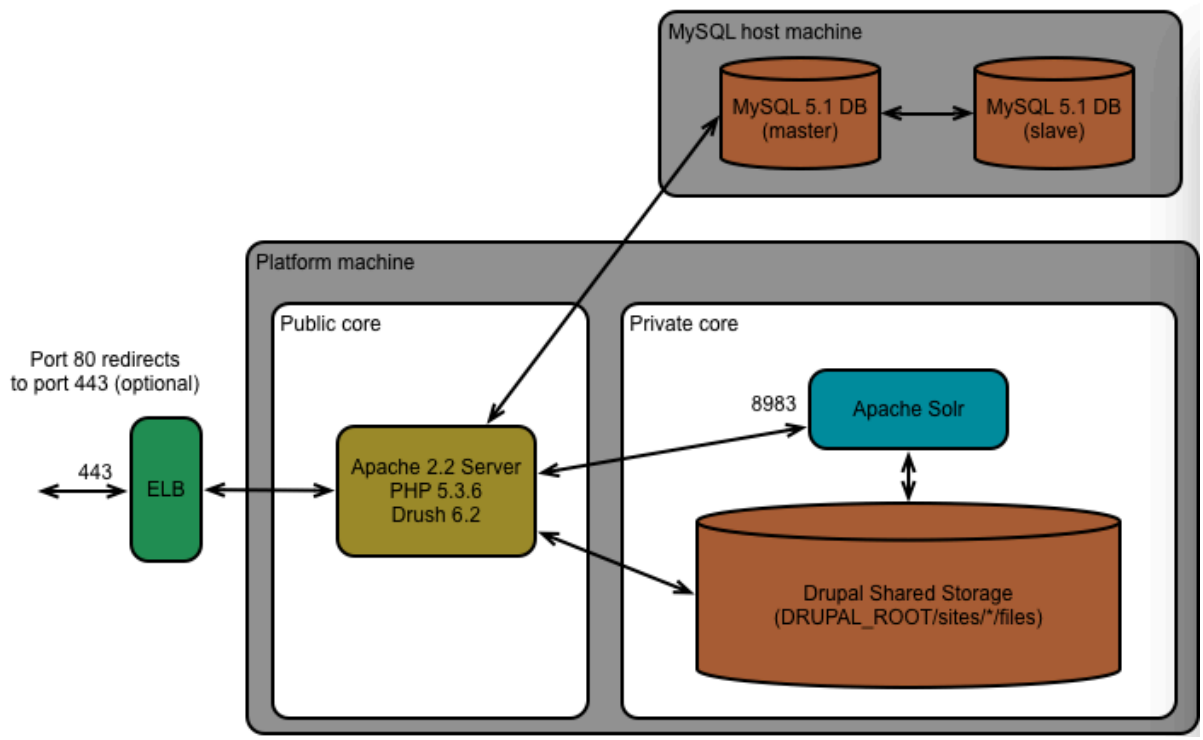


Figure 2: Small topology

In the medium topology, you have multiple Apache Server instances:

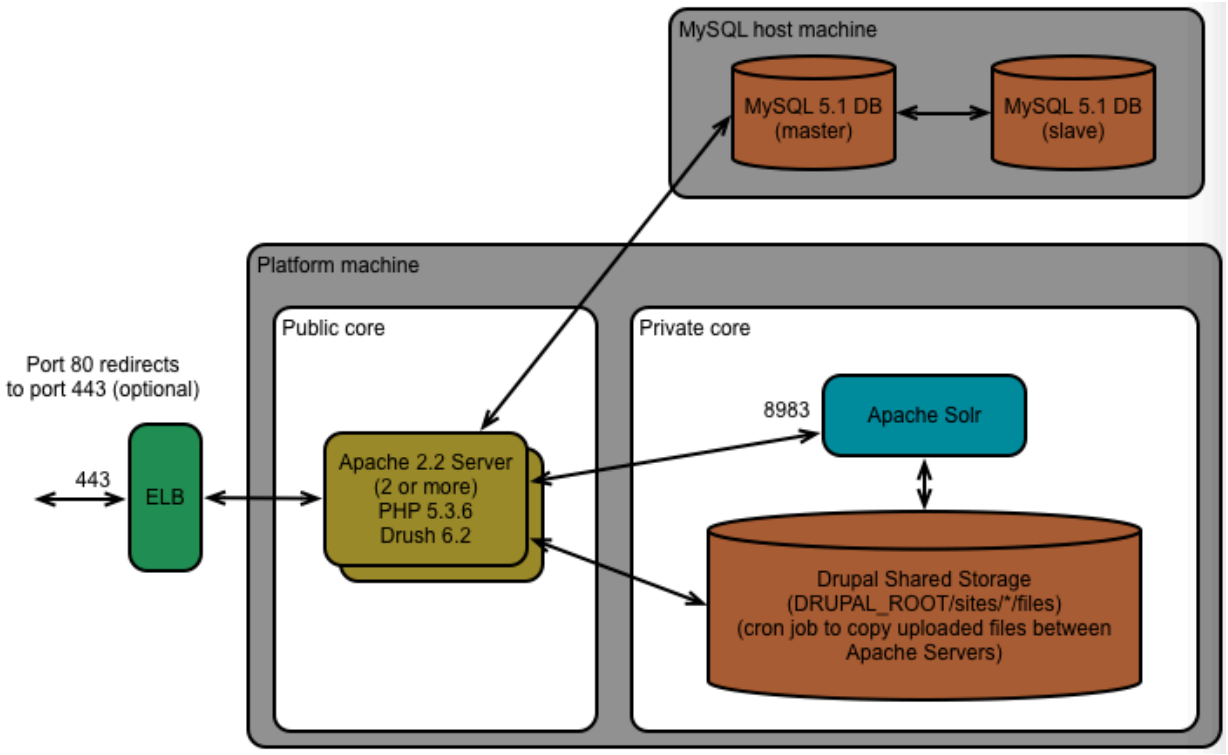


Figure 3: Medium topology

In the large topology, use NFS, GlusterFS, S3, or other type of syncing mechanism:

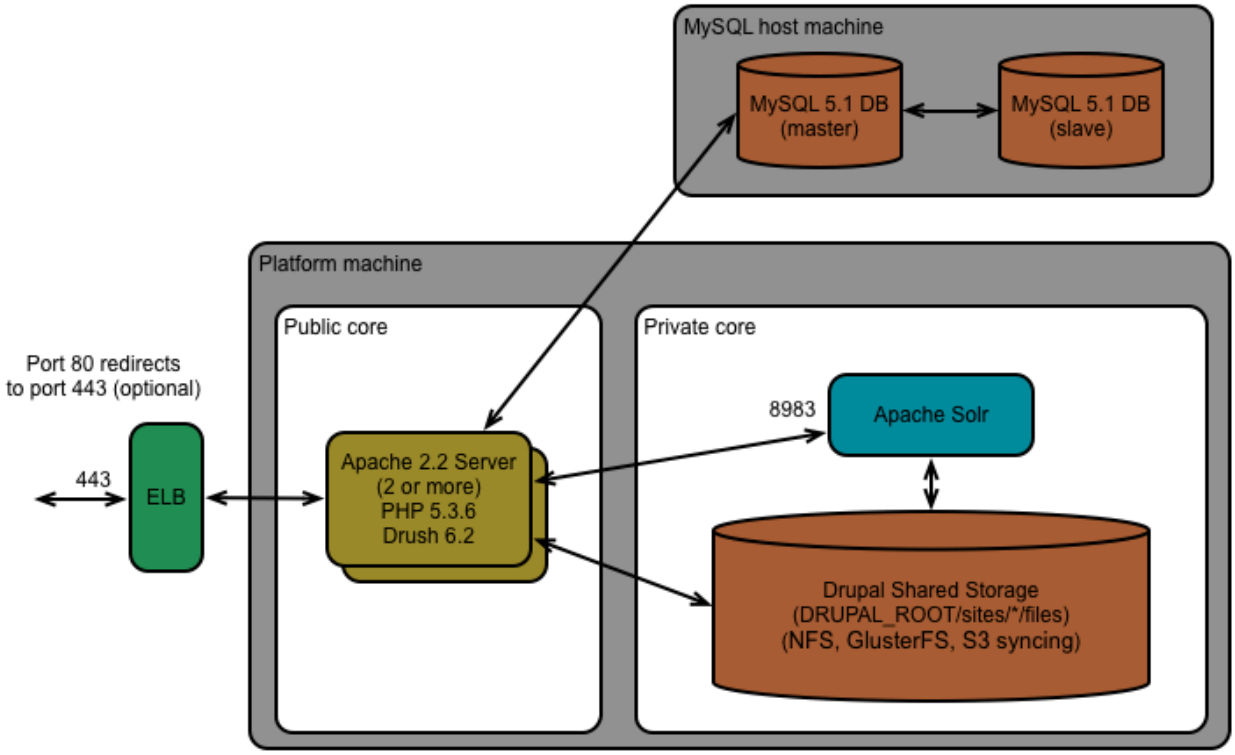


Figure 4: Large topology

Requirements

Following are the hardware and software requirements for installation.

Table 3: Requirements

Hardware	Requirement
Operating system	• CentOS version 6.54 (64-bit) • Licensed copy of Red Hat Enterprise Linux (RHEL) version 6.5 (64-bit). Red Hat requires a license to download and install all required RPMs. • Other operating systems might work but are not supported
RAM	1 GB
Hard disk	10 GB
Network interface	No active internet connection required if using the install script. Active internet connection required if you use the detailed install procedure.

MySQL Database Requirements

If you choose to install the MySQL Server on the same machine as the Developer Channel Services, the single-machine topology, you must create the database and database user. A schema will be created for you.

If you would like to have the database on a separate system, you will need to have an empty database schema already created on that server. You will need to supply the database hostname, database name, and user information to connect the database and create default database tables and data. This user will also be used by Developer Channel Services to connect to the database, and must have the following privileges: SELECT, INSERT, UPDATE, DELETE, CREATE, DROP, INDEX, ALTER, CREATE TEMPORARY TABLES, LOCK TABLES.

Red Hat Enterprise Linux (RHEL) Requirements

RHEL has extra requirements due to a subscription needed to access software downloads from Red Hat. The server must be able to connect to the Internet to download RPMs via yum. If using RHEL, the server must be registered on the Red Hat Network (RHN) and registered to the server

optional channel. The Red Hat requirements are checked during the install and will prompt you with information if the server is not already configured properly.

Additional Requirements

In order to perform the installation, the user installing the software must have root access.

Deployment Architecture Requirements

Developer Channel Services has a single interface with the Apigee Management Server via a REST API in order to store and retrieve information about a user's applications. Developer Channel Services will need to be able to connect to the Management Server via HTTP or HTTPS, depending on your installation.

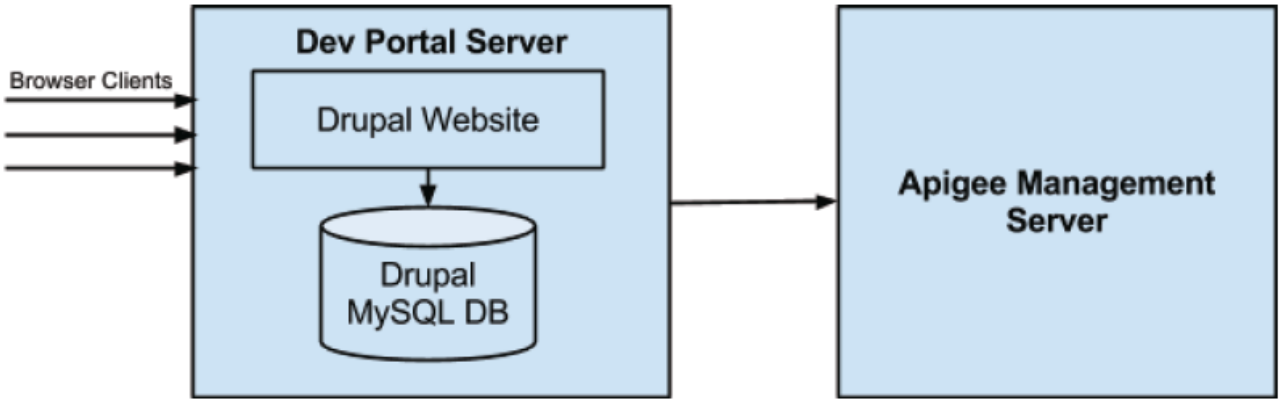


Figure 5: Dev Portal HTTP/S connection flow

Information Required Before You Start the Install

Before starting the install, you must have the following information available:

1. Which platform are you configuring: Red Hat or CentOS? If this is a Red Hat install, the machine must be registered on the Red Hat Network to download RPMs.
2. Do you plan on installing MySQL on the local machine? Some HA installations require MySQL to be on a different machine than the one serving the portal web pages. If this is the case, do not install MySQL locally. If you want a simple install with everything on the same machine, then install MySQL locally.
3. If you intend to access a remote MySQL server, the hostname, port, database name, username, and password of the remote MySQL server. The remote MySQL server should already be configured before you start the installation.
4. What is the fully-qualified domain name of the web server? (This information will be added to /etc/hosts.) This should be an IP address or hostname, such as portalserver.example.com. The default value is localhost.
5. Do you want to use Apigee's default configuration for Apache's virtual host? One virtual host is created with the hostname you've specified above in Step 7.

6. There are three pieces of information that allow your portal to communicate with the Apigee API Management server. This information is as follows:
    a. **URI of the Apigee Management API Endpoint:** This will be either a hostname or an IP address. This is the REST endpoint to which all calls are made to create apps and register developers for app keys. The default endpoint is https://api.enterprise.apigee.com/v1.
    b. **Apigee Organization name**: There is a 1-1 relationship between portals and API organizations. You will set up the default organization when you set up the Management API Endpoint. The default value is my-org.
    c. **Username and password for the management API endpoint**: In order for the portal to register developers and make requests for keys, the calls themselves to the management API have to be authenticated as an administrator for the organization. The Authentication value is a UN/PW key pair for administrators on the Organization you've created for the management API.

       For example: dc_devportal+ORGNAME@apigee.com:MyP@ssw0rd

Installation

Follow these steps to install Developer Channel Services with an Internet connection.

1. Get the Developer Channel Services bundle

Go to http://community.apigee.com/content/apigee-customer-support and select Login to your Support Portal to request the Developer Channel Services .tar file in one of two ways:

- Request access to the OPDK download directory.
- Request a URL to the Developer Channel Services RPM.

Note: If you do not have an account on the Support Portal, select **Login to your Support Portal** and then on the sign in page select **In a hurry? Raise a support ticket here**.

2. Ensure your system meets the system requirements

Before you install the portal, your server must meet the following requirements:

1. Ensure that you are performing the install on the 64-bit version of Red Hat Enterprise Linux 6.5 or CentOS 6.54.
2. Ensure that Yum is installed on your server.
3. **(Red Hat only)** Ensure that you have a licensed copy of Red Hat Enterprise Linux (RHEL) version 6.5. Use the following command to license your copy of Red Hat:

   ```
   > subscription-manager register --username=my_username --
   password=my_password --auto-attach
   ```

   Replace *my_username* and *my_password* with your Red Hat login credentials.
4. Ensure that the server optional channel installed by using the commands:

   ```
   > yum install yum-utils
   > yum-config-manager --enable rhel-6-server-optional-rpms
   ```
5. **(For an installation on a server without an Internet connection)** Obtain the MySQL RPM files.

   Note: If you already have a MySQL server installed, you can ignore this prerequisite.

   The required MySQL files include:
   - **mysql-5.1.73-3.el6_5.x86_64.rpm**
   - **mysql-libs-5.1.73-3.el6_5.x86_64.rpm**
   - **mysql-server-5.1.73-3.el6_5.x86_64.rpm**

a. **For Red Hat:** You require a Red Hat account to download these files. This is the same account that you used above to register your Red Hat license.

   Download the MySQL RPM files from https://rhn.redhat.com/rhn/channels/software/Search.do

   To locate the files, perform a search for 'mysql' for the x86_64 architecture.

b. **For CentOS**: Download the MySQL RPM files from http://pkgs.org/centos-6/centos-updates-x86_64/

3. Install Developer Channel Services using the automated install script

Use the following procedure to install the portal by using the automated install script. This procedure works for servers with or without an external Internet connection.

Note: If you want to have complete control over the install process, you can use the detailed install procedure. However, that procedure requires your server to have an external Internet connection to download the required files. Apigee recommends that you use the automated install script unless you have a specific reason for performing a detailed install. For more information, see Detailed install procedure for Internet-enabled servers.

1. Log in to the server as root or as superuser.
2. Create a directory for the install files, such as `opdk`.
3. CD to the new directory and download the Developer Channel Services .tar file from the link sent to you by Apigee.

   You can download a file from the link sent to you by Apigee in a browser or by copying it and then adding it to the following cURL command:

   ```
   > curl -kOL <paste link here>
   ```

4. Extract the contents of the Developer Channel Services .tar file by using the command:

   ```
   > tar -xvf <tar file>
   ```

   The tar command creates a new directory, named DeveloperServices_4.**x**.**y**, containing the installation files where **x.y** corresponds to the version number.

5. CD to DeveloperServices_4.**x**.**y**.
6. **(For an installation on a server without an Internet connection)** Copy the MySQL RPM files to this directory.

   Note: If you already have a MySQL server installed, you can ignore this step.

   The MySQL RPMs include:

   a. **mysql-5.1.73-3.el6_5.x86_64.rpm**

   b. **mysql-libs-5.1.73-3.el6_5.x86_64.rpm**
   c. **mysql-server-5.1.73-3.el6_5.x86_64.rpm**

7. Run the install script by using the following command:

   ```
   ./portal-bundle-installer.sh
   ```

8. Answer the prompts.

   Note: You can use this script to install the portal on one server and install MySQL on a different server. On the first server, answer Y when prompted to install the portal and N when prompted to install MySQL. On the second server enter N when prompted to install the portal and Y when prompted to install MySQL.

9. After the installation completes, navigate to the server URL in a browser:

   http://localhost

   You are redirected to the Apigee profile Database configuration page.

   Note: Typically, you will have already configured a hostname and registered it with your DNS server so that you do not have to use `http://localhost`.

10. Configure the connection to MySQL. If MySQL is on a remote machine, expand the Advanced Options section and enter the connection information to that machine, then Select Save and continue.
11. Configure the connection to the Apigee Endpoint by entering the following information, and then select Save:

    For more information on these values, see Information Required Before You Start the Install.

    a. **Dev Portal Org**
    b. **Dev Portal Endpoint URL**
    c. **Endpoint Authenticated User**
    d. **Authenticated Users' Password**

12. Configure the administrator user by entering the following information, and then select Save (note that Drupal create an admin user named 'admin' by default, so do not use 'admin' as the username):

    a. **Username**
    b. **Password**
    c. **Email address**

13. Navigate to the portal home page at `http://localhost/` or to the DNS name of your portal.
14. Log in to the portal using the administrator credentials.

4. Install Drush

Drush is the command line interface to Drupal. Apigee requires that you install Drush 6.2, which is available for download at https://github.com/drush-ops/drush. That site lets you download Drush in various forms (ZIP, tar, GitHub clone) and also includes installation instructions.

Note: Drush requires PHP, so you must install Developer Channel Services, which installs PHP, before installing Drush.

You can also use the following procedures to install Drush.

On Linux or CentOS:

1. Uninstall any previous installation of Drush.
2. Go to http://pkgs.org/.
3. Search for "php-drush" to locate the file **php-drush-drush-6.2.0-1.el6.noarch.rpm**.
4. Copy php-drush-drush-6.2.0-1.el6.noarch.rpm to the DeveloperServices_4.**x.y** directory.
5. Run the script:

   ```
   drush-installer.sh
   ```

On a Mac:

1. Uninstall any previous installation of Drush.
2. Install homebrew, a package manager for Unix apps, from:

   http://coolestguidesontheplanet.com/setting-up-os-x-mavericks-and-homebrew/

3. Use homebrew to install composer, the utility that you use to install Drush:

   ```
   brew install josegonzalez/php/composer
   ```

4. Install Drush:

   ```
   brew install drush
   ```

5. Test Drush by using the `--version` option of the Drush command:

   ```
   $ drush --version
   ```

   You should see the version number displayed as shown below:

   ```
   Drush Version   :  6.2.0
   ```

On Windows:

1. Uninstall any previous installation of Drush.
2. Download and run the Drush 6.0 installer from:

   http://drush.ws/drush_windows_installer

3. Open the Drush command prompt by selecting Drush in the Programs menu.

5. Create an admin user

Use Drush to create an administrative user for your Developer Channel Services installation. Drupal automatically creates an admin user named 'admin' by default, so do not use 'admin' as the username.

Note: This step is only required if you used the detailed install procedure, instead of the automated install script, to install the portal. If you used the automated install script, then you created the admin user as part of the script.

1. CD to your *drupal_root*/sites/default directory. The standard location for the Drupal root directory is /var/www/html:

   ```
   > cd <drupal_root>/sites/default
   ```

2. Ensure that you have write permissions on the private Drupal files:

   ```
   > drush vget file_private_path
   ```

   This command returns the path to the private Drupal files, for example:

   ```
   file_private_path: 'sites/default/private'
   ```

   Corresponding to /var/www/html/sites/default/private/. Use the following command to ensure that this directory is writable by the owner and the group:

   ```
   chmod -R g+w dirPathAndName
   chmod -R o+r dirPathAndName
   ```

3. Enter the following commands to create an admin user, replacing the commands in “< >” with your values:

   ```
   > drush user-create <username> --mail="<email-address>" --
   password="<password>"
   > drush user-add-role Administrator <username>
   ```

4. Log in to the developer portal as an admin by using the username and password specified above.

6. Optional - Configure the Apache Solr search engine

By default, the Drupal modules that connect to the Apache Solr search engine are disabled when you install the portal. Most portals use the internal Drupal search engine, and therefor do not require the Drupal Solr modules.

If you decide to use Solr as your search engine, you must install Solr locally on your server and then enable and configure the Drupal Solr modules on the portal.

To enable the Drupal Solr modules:

1. Log in to your portal as a user with admin or content creation privileges.
2. Select **Modules** in the Drupal menu.
3. Enable the **Apache Solr Framework** module and the **Apache Solr Search** module.
4. Save your changes.
5. Configure Solr as described at https://drupal.org/node/1999280.

7. Optional - Install mod_ssl to support HTTPS

The mod_ssl module is used by the Apache HTTP Server to serve web pages over HTTPS. If you want to use HTTPS, use the following command to install mod_ssl:

```
> yum install mod_ssl
```

8. What next?

Your next steps after you install the Developer Services portal are to configure and customize it for your specific requirements. The documentation on the Apigee web site contains all of the information on configuring, styling, and managing a portal. Access the documentation at http://apigee.com/docs/developer-services/content/what-developer-portal.

The following table lists some of the most common tasks that you perform after installation, and includes links to the Apigee documentation where you can find more information:

Task	Description
Configure the theme	The theme defines the appearance of the portal, including colors, styling, and other visual aspects.
Configure the home page	The home page includes the main menu, welcome message, header, footer, and title.
Configure the registration process	The registration process controls how new developers register an account on the portal. For example, do new developers get immediate access to the portal, or do they have to be verified by an administrator. This process also controls how a portal administrator is notified when a new account is created.
Configure email	The portal sends emails in response to certain events. For example, when a new developer registers on the portal and when a developer loses their password.
Set terms and conditions	Add a Terms & Conditions page that developers must accept before being allowed to access the portal.
Set user roles and permissions	The portal implements a role-based authorization model. Before allowing developers to register, define the permissions and roles used by the portal.
Configure blogs and forums	The portal has built-in support for blogs and threaded forums. Define the permissions required to view, add, edit, and delete blog and forum posts.
Ensure you are doing database backups	Ensure that you are backing up the Drupal database. Note that because every installation is different, it is up to you to determine how best to back up the database.
Set up a hostname	If you do not set up a hostname in your DNS server, you can always access the site via the server's IP address. If you want to use a hostname, you can configure DNS for the server, which should work correctly without any other configuration on a basic setup. If you have set up a load balancer or are getting incorrect URLs on your site for some other reason, you can set `$base_url` in the Dev Portal **settings.php** file, which by default is located in the **/var/www/html/sites/default** directory.

Detailed install procedure for Internet-enabled servers

This section describes the detail install procedure that you can use as an alternative to using the automated install script, and replaces the procedure described in 3. Install Developer Channel Services using the automated install script.

After you complete this procedure, proceed with the rest of the install procedure starting at 4. Install Drush.

This procedure requires your server to have an Internet connection.

1. Create a directory for the install files, such as `opdk`.
2. CD to the new directory and download the Developer Channel Services .tar file from the link sent to you by Apigee.

   You can download a file from the link sent to you by Apigee in a browser or by copying it and then adding it to the following cURL command:

   ```
   > curl -kOL <paste link here>
   ```

3. Extract the contents of the .tar file by using the command:

   ```
   > tar -xvf <download file>
   ```

   The opdk/DeveloperServices_4.**x**.**y**/bundle.Apigee/devportal-repo/ directory now contains the Developer Channel Services RPM file. The RPM file uses the following naming convention:

   apigee-drupal-x.y.noarch.rpm

   where **x.y** corresponds to the version number.
4. Ensure that networking is enabled by checking that the ONBOOT property is set to "yes" in /etc/sysconfig/network-scripts/ifcfg-eth0. If you have to change this property, run the following command:

   ```
   > service network restart
   ```
5. Enable repos that contain the LAMP software:
   a. For a Red Hat installation, if you have not done so already, register your installation with Red Hat Network by using the command:

      ```
      > subscription-manager register --username=my_username --
      password=my_password --auto-attach
      ```

      Add the server optional channel by using the commands:

      ```
      > yum install yum-utils
      > yum-config-manager --enable rhel-6-server-optional-rpms
      ```

b. For both CentOS and RedHat, enable the EPEL (Extra Packages for Enterprise Linux) repo:

```
> rpm -Uvh
http://dl.iuscommunity.org/pub/ius/stable/Redhat/6/x86_64/epel
-release-6-5.noarch.rpm
```

6. Install the Developer Channel Services RPM:

```
> yum install –y DeveloperServices_4.x.y/bundle.Apigee/devportal-
repo apigee-drupal-x.y.noarch.rpm
```

You will see updates downloaded and installed automatically from Red Hat Subscription Management.

7. Enable SELinux outgoing connection policy:

```
> setsebool -P httpd_can_network_connect 1
```

8. Start Apache:

```
> service httpd start
```

9. If you want to run MySQL server locally, you must install MySQL, set the root password, and create a MySQL user. Alternatively, you can connect to an existing MySQL installation on a different machine accessible on your network.

To install MySQL locally:

```
> yum install mysql-server
> service mysqld start
```

To set the root password:

```
> /usr/bin/mysqladmin -u root password 'foo'
> /usr/bin/mysqladmin -u root -h 127.0.0.1 -pfoo
```

10. Create a database and optionally a database user for Developer Channel Services to use:

```
> sudo mysql -pPWORD
```

where PWORD is the root password.

If you want to create a new user for the MySQL connection, use the following commands:

```
mysql> CREATE USER 'devportal_user'@'127.0.0.1' IDENTIFIED BY
'devportal_password';
mysql> GRANT ALL PRIVILEGES ON *.* TO 'devportal_user'@'localhost';
```

To verify that the user was created:

```
mysql> select user,host from mysql.user;
```

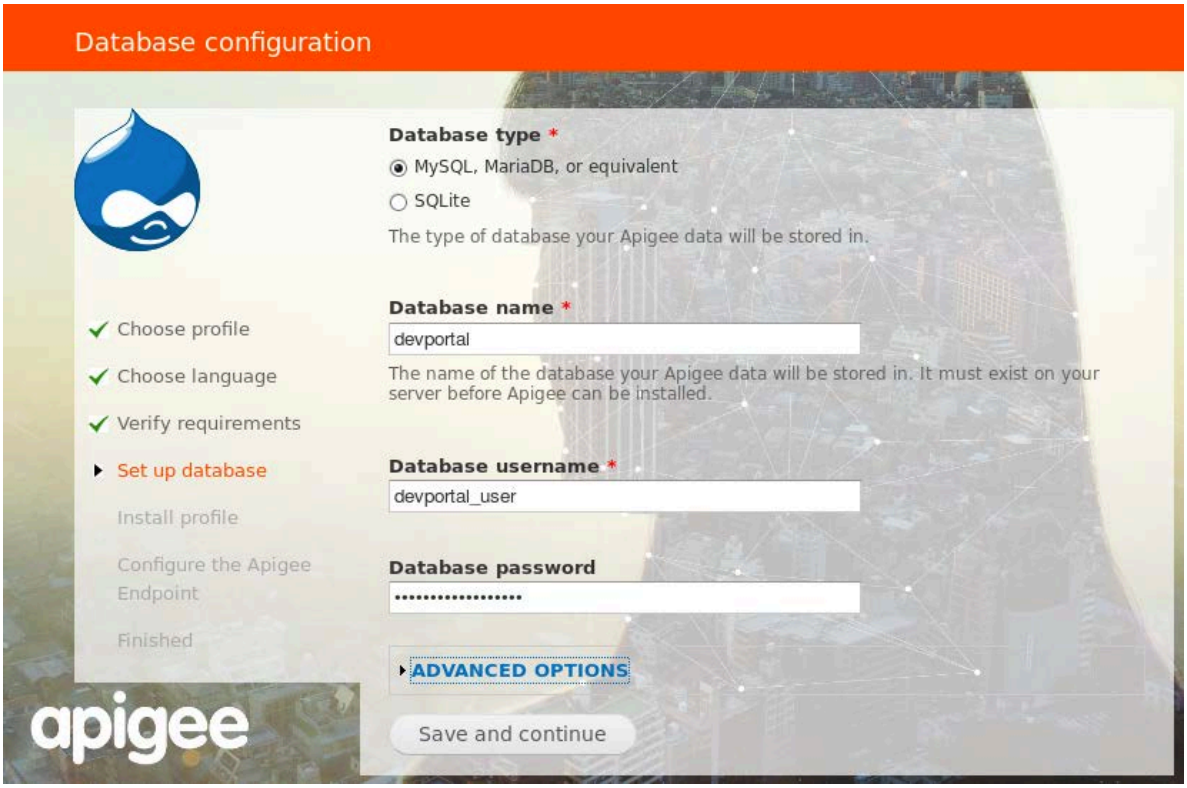
Create the MySQL database:

```
mysql> CREATE DATABASE devportal CHARACTER SET utf8 COLLATE
utf8_general_ci;
mysql> GRANT ALL ON devportal.* TO 'devportal_user'@'%' IDENTIFIED
BY 'devportal_password';
```

If MySQL is on localhost, use 'localhost' instead of '%'.

11. Edit /etc/php.ini and set the date.timezone to the correct time zone name. For example, on the American East Coast, set this to `America/New_York`. In California, set it to `America/Los_Angeles`. It must be a valid Unix time zone name with no spaces.
12. With Apache started, navigate to the server URL in a browser: http://localhost. Typically, you will have already configured a hostname and registered it with your DNS server so that you do not have to use http://localhost.

    You are redirected to the Apigee profile Database configuration page:



Use this page to configure the connection to a local instance of MySQL. If MySQL is on a remote machine, expand the Advanced Options section and enter the connection information to that machine, then Select Save and continue.

On the Configure the Apigee Endpoint page, enter the following information, and then select Save:

Dev Portal Org:
Dev Portal Endpoint URL:

Endpoint Authenticated User:
Authenticated Users' Password:

For more information on these values, see Information Required Before You Start the Install.

13. Proceed with the rest of the install procedure starting at 4. Install Drush.

Configuring SSL with Load Balancers

For better performance, load balancers are sometimes configured to perform SSL termination. With SSL termination, load balancers decrypt messages sent over https and forward the messages to backend servers over http. That saves backend servers the overhead of decrypting https messages themselves.

If load balancers forward unencrypted http messages to servers in the same data center, security is not an issue. However, if load balancers forward messages over http to servers outside the data center, such as your Apigee developer portal, the messages are unencrypted, which opens a security hole.

If your developer portal sits behind load balancers that are using SSL termination, and you want all traffic served over https, the website pages will need to contain https links only and you will need to add the following code to your developer portal sites/default/settings.php file. Because the load balancer does not automatically transform the content of the HTML pages, the code ensures that all links passed to the client start with https://.

To configure SSL with load balancers, add the following lines to the sites/default/settings.php file:

```
$can_detect_ssl = FALSE;
if (isset($_SERVER['HTTP_X_FORWARDED_PROTO']) ||
(isset($_SERVER['HTTPS']) && $_SERVER['HTTPS'] == 'on')) {
 $can_detect_ssl = TRUE;
}
if (isset($_SERVER['HTTP_X_FORWARDED_PROTO']) &&
strtolower($_SERVER['HTTP_X_FORWARDED_PROTO']) == 'https') {
 $_SERVER['HTTPS'] = 'on';
}
if ($can_detect_ssl && $_SERVER['HTTPS'] != 'on') {
 header('Location: https://' . $_SERVER['SERVER_NAME'] .
$_SERVER['REQUEST_URI']);
 exit;
}
```

Contact us

For the most up-to-date information and to report bugs, please refer to the on-premises Developer Channel Services website.

https://devsrvs.info/

You can also contact Apigee Customer Support at:

http://community.apigee.com/content/apigee-customer-support

If the installer exits prematurely because of an error, it will give you a log file. Please submit this log file with any bugs you report.

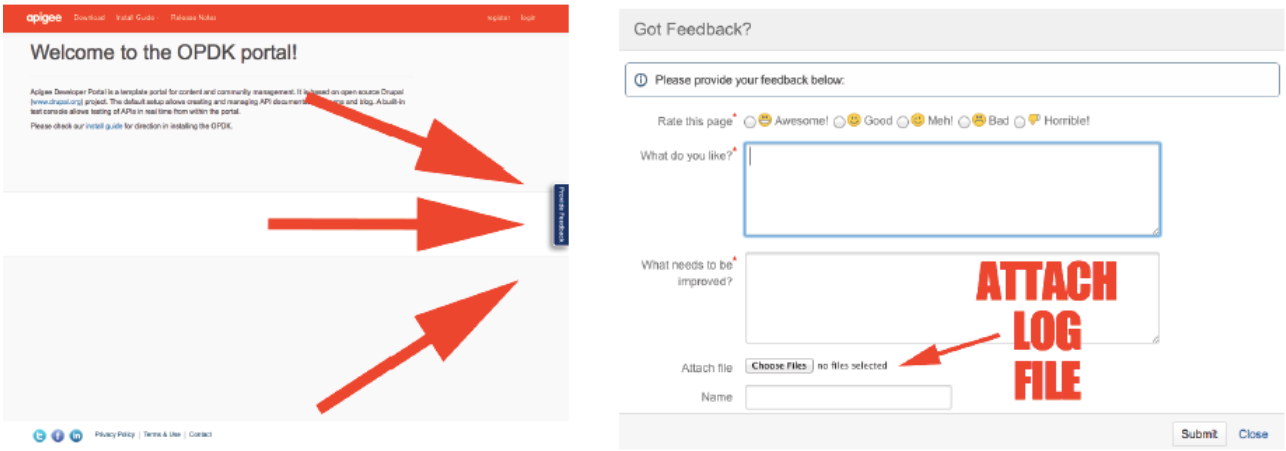


Figure 6: Attaching a log file to a feedback report

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