Setup Liberty

Contents

Lab 0 Setup Liberty

In this lab we will perform the initial set up required for all the labs and explore Liberty. The instructions assume a Windows environment, but Linux and Mac differences are presented. Where applicable, substitute with Linux or Mac equivalent, such as path names.

Please refer to the following table for file and resource location references on different operating systems.

Location Ref.	OS	Absolute Path
{LAB_HOME}	Windows	`C:\WLP_<version>`
	Linux	`~/WLP_<version>` `Or your choice`
	Mac OSX	`~/WLP_<version>` `Or your choice`

0.1 Unzip the Contents to your computer

Unzip the .zip file appropriate from your platform from USB drive to your computer.

For Windows, unzip LibertyPoT_<VERSION>_WIN.zip to c: drive. The final directory is C:\WLP_<VERSION>

For Linux unzip LibertyPoT_<VERSION>_LINUX.zip to a directory of {LAB_HOME}, e.g, your home directory. The final directory is {LAB_HOME}/WLP_<VERSION>

For Mac, unzip LibertyPoT_<VERSION>_MAC.zip to a directory of {LAB_HOME}, e.g., your home directory. The final directory is {LAB_HOME}/WLP_<VERSION>.

0.2 Install Mac prerequisites

1. Mac: Download and install the JRE from Oracle's website: http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html

0.3 Install Linux prerequisites

You may be missing prerequisite packages required to run the supplied Java SDK and Eclipse. If you are running on 64-bit Linux, you need to install 32-bit packages as the supplied Java SDK and Eclipse are both 32 bits. For Ubuntu or Debian variants of Linux, use the following commands to install the missing packages. For other Linux variants, search online for equivalent packages.

To run the supplied Java SDK, use these commands to install the prerequisite packages:

1. *sudo apt-get install build-essential*
2. *sudo apt-get install g++-4.8-multilib*

To run the supplied Eclipse with WDT, use these commands to install the prerequisite packages:

1. *sudo apt-get install libswt-gtk-3-java*
2. *sudo apt-get install libgtk2.0-0:i386*
3. *sudo apt-get install libgtk-3-0:i386*
4. *sudo apt-get install libxtst6:i386*
5. *sudo apt-get install gtk2-engines-murrine:i386*
6. *sudo apt-get install unity-gtk2-module:i386*
7. *sudo apt-get install libcanberra-gtk-module:i386*
8. *sudo apt-get install gtk3-engines-unico:i386*
9. *sudo apt-get install overlay-scrollbar-gtk2:i386 (Note: this package may not install successfully on latest versions of Ubuntu, but WDT can function without it.)*

0.4 Installing Liberty and the Java Runtime

__1. To install for windows or linux,

a. Liberty is already installed for you {LAB_HOME}/wlp
b. The IBM JRE is already installed for you {LAB_HOME}/wlp/java
c. The IBM_JRE is preset in the {LAB_HOME}/wlp/etc/server.env

If you want to override this for a specific server create a server.env file in the usr/servers/<server name> directory.

*Note: If JAVA_HOME is already set in your shell, then you will need to clear the JAVA_HOME variable.

To check:

Linux: execute "env| grep –i java_home". If it returns with a value, then execute "unset JAVA_HOME"
Windows: execute "set JAVA_HOME". If it returns with a value, then execute "set JAVA_HOME="

0.5 Create test server

__1. From the {LAB_HOME}/wlp/bin directory in your Liberty runtime installation, run the following command to create a new server. For Linux and Mac, use ./server to pick up the local "server"

server create myServer.

__2. The new server is created in {LAB_HOME}/wlp/usr/servers/myServer. The server.xml file is the complete server configuration. Open up an editor to view {LAB_HOME}/wlp/usr/servers/myServer/server.xml.

__3. Start the server instance with this command:

server start myServer.

This runs the server in the background and the output is written to files in the {LAB_HOME}/wlp/usr/servers/myServer/logs directory. Alternatively, to start the server in the foreground (so the console messages are seen in the command window) you can use the command "server run myServer".

__4. Stop the server with the command:

server stop myServer

__5. Having verified the install, clean up. Delete the server by deleting the {LAB_HOME}/wlp/usr/servers/myServer directory.

You now have a Liberty runtime environment that is ready to be configured to run applications.

0.6 Test the WebSphere Developer Tools (WDT)

You can manage Liberty from the command line, and edit the server configuration files in any editor, but the WebSphere Developer Tools (WDT) provide a great configuration editor, server controls and application publishing, as well as many other time-saving utilities. We will use WDT in many more labs.

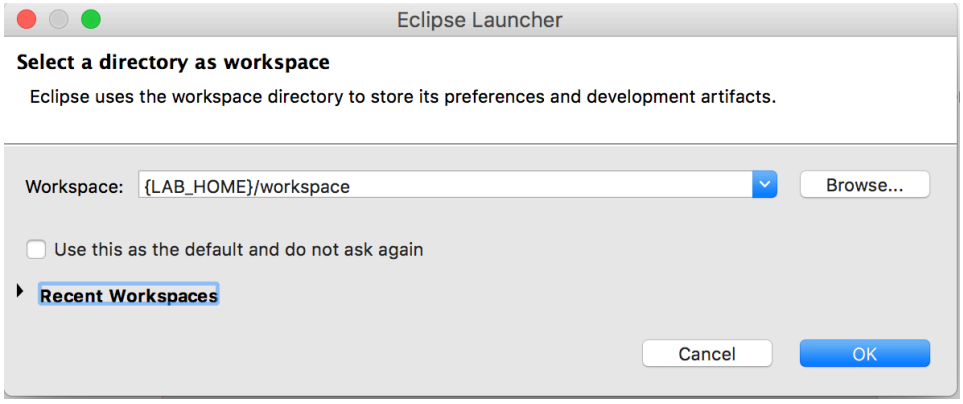
Normally you would first download and install Eclipse, followed by the installation of WDT. For this lab, we have bundled everything into a single zip file. The directory {LAB_HOME}/wdt contains a prebuilt and expanded WDT. Note: Upon first startup, it may take Eclipse up to a minute to start as it initializes.

1. Start WDT by executing the following executable

   a. For Windows, **{LAB_HOME}\wdt\eclipse\eclipse.exe**
   b. For Linux, {**LAB_HOME}/wdt/eclipse/eclipse**
   c. For Mac, **{LAB_HOME}/wdt/eclipse/Eclipse.app/Contents/MacOs/eclipse**

2. When the Eclipse launcher prompts you to Select a workspace:
   a. Enter **{LAB_HOME}\workspace**
   b. Click **OK**, substituting {LAB_HOME} with the correct value for your platform. This should create workspace directory for you.

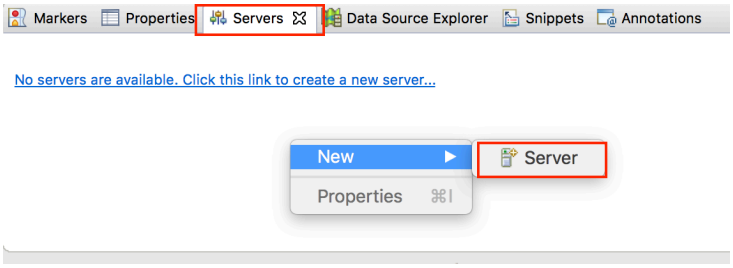
   Note: Accepting the default workspace location, may cause problems with a preexisting workspace. Please use a clean workspace location.



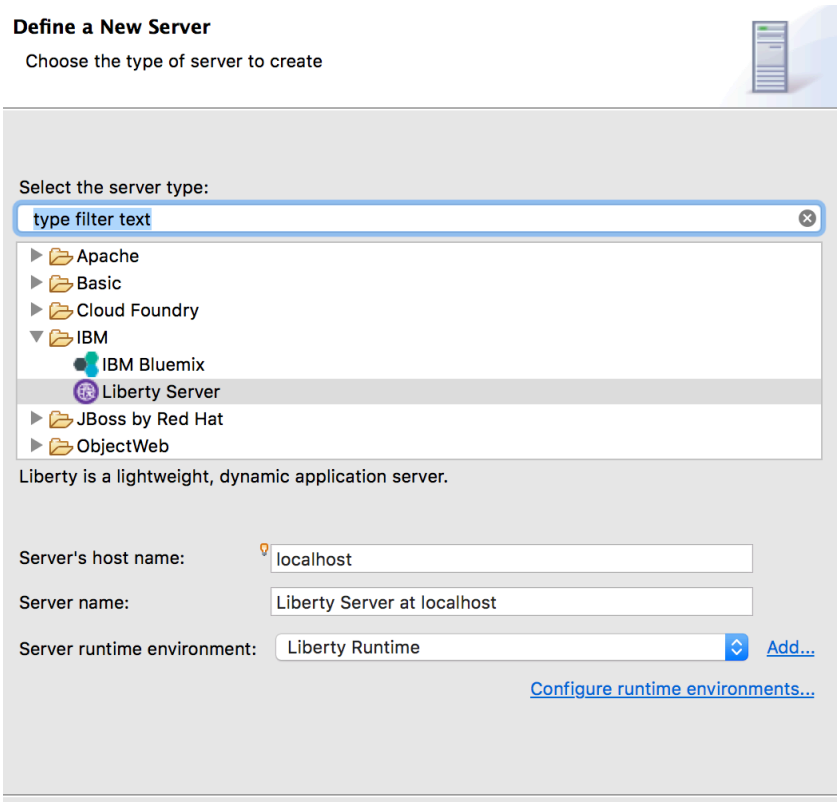
3. Remove the welcome page by clicking on the ‘X’ icon

0.7 Create Liberty Server in WDT

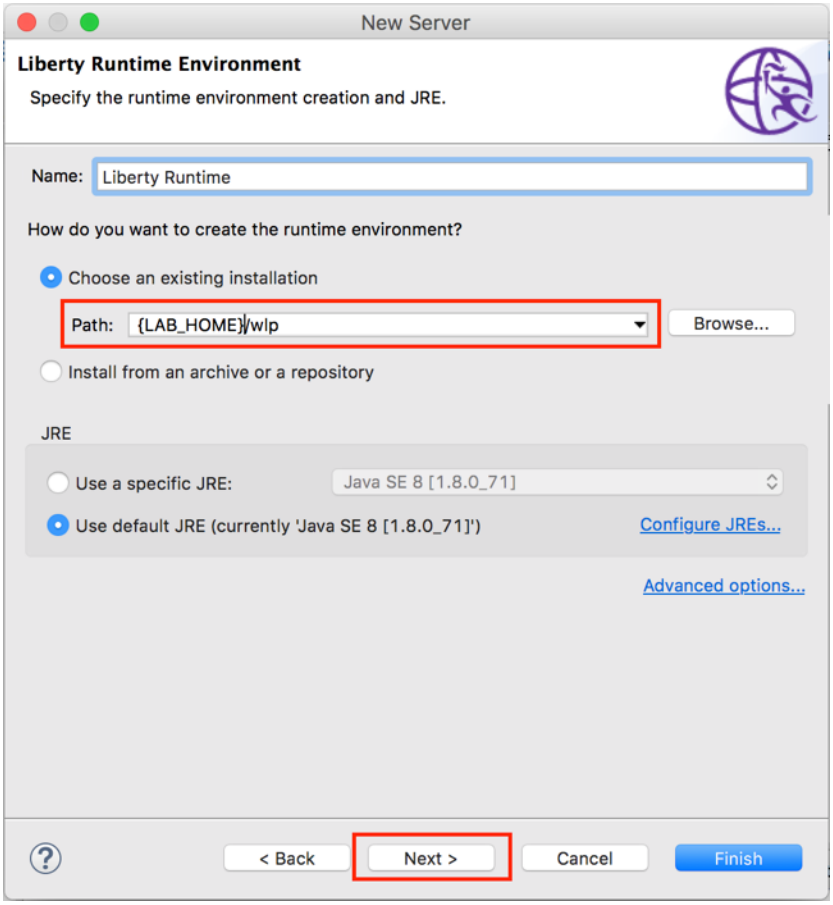
a. At the bottom of the workbench, open the Servers view by clicking the Servers tab. Right-click within the windows of the Servers view and select New > Server



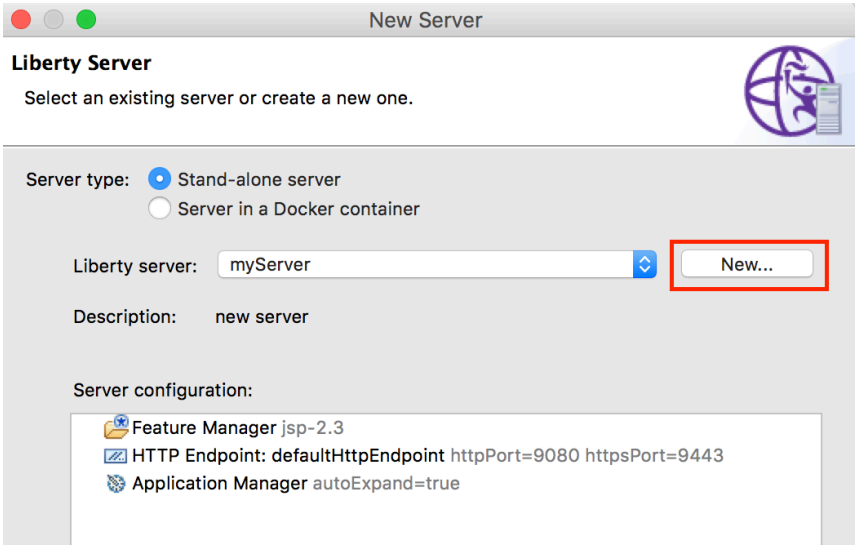
b. Under the server type list, expand IBM and select the **Liberty Server** server type. Use the default eclipse server name as supplied (localhost). Click **Next**. This creates the liberty server object in eclipse.



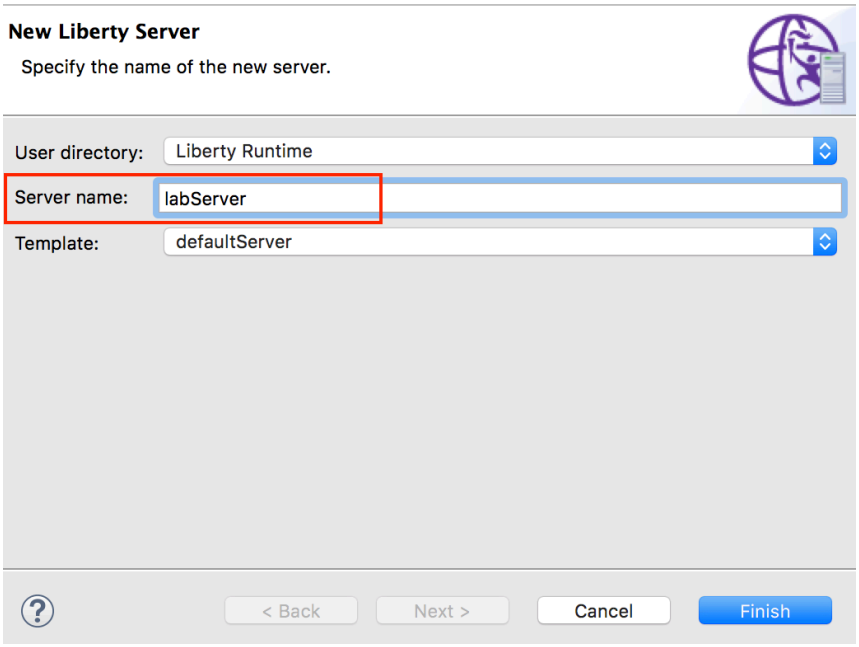
c. Now eclipse needs to associate the 'localhost' server with a server configuration in a Liberty runtime (the runtime that you installed in section 3 above). The Liberty Runtime Environment page is displayed.
   I. In the **Path** field under the **Installation folder** section, type or browse for the directory where you installed the Liberty runtime environment (The value of {LAB_HOME}/wlp)
   II. You may also select which JRE to use if you have multiple JRE in your environment.
   III. Click **Next.**



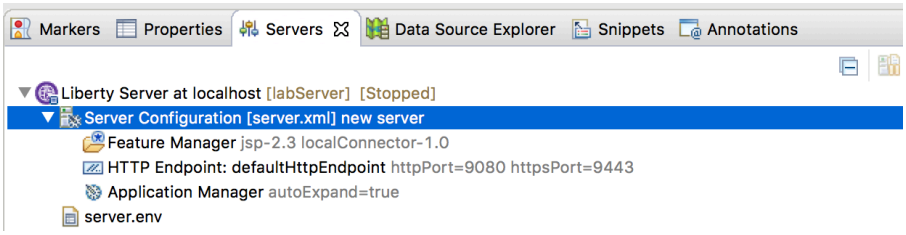
d. To create the server configuration in the runtime, either use the current populated server ‘myServer’ or click the **New** button. Note: if directions were followed and myServer was deleted, your screen print will differ and there will be no new button and defaultServer will be prepopulated



e. Enter in ‘labServer’ to the Liberty Server: box then click **Finish** and then **Finish** again.



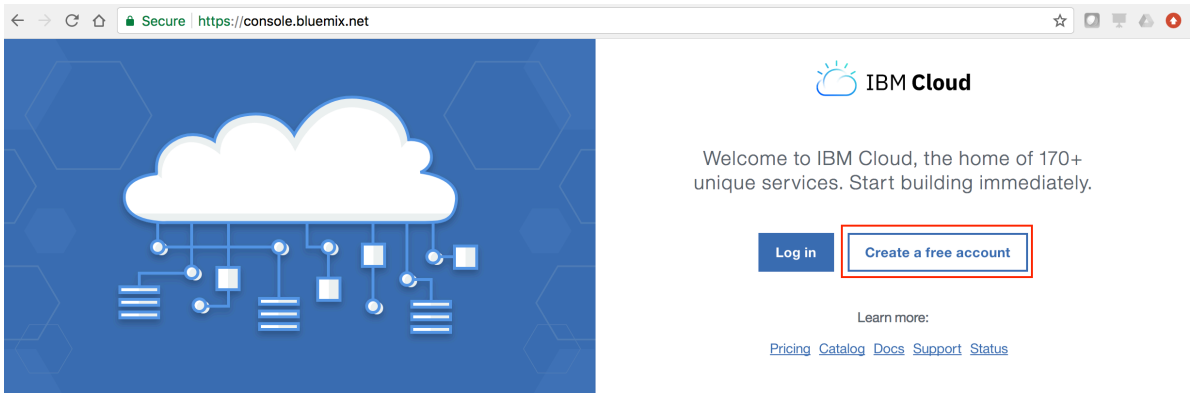
f. The new server will appear in the Servers view. You can expand the server to show a quick view of the configuration. You can open the server configuration editor by double-clicking on **Server Configuration:**



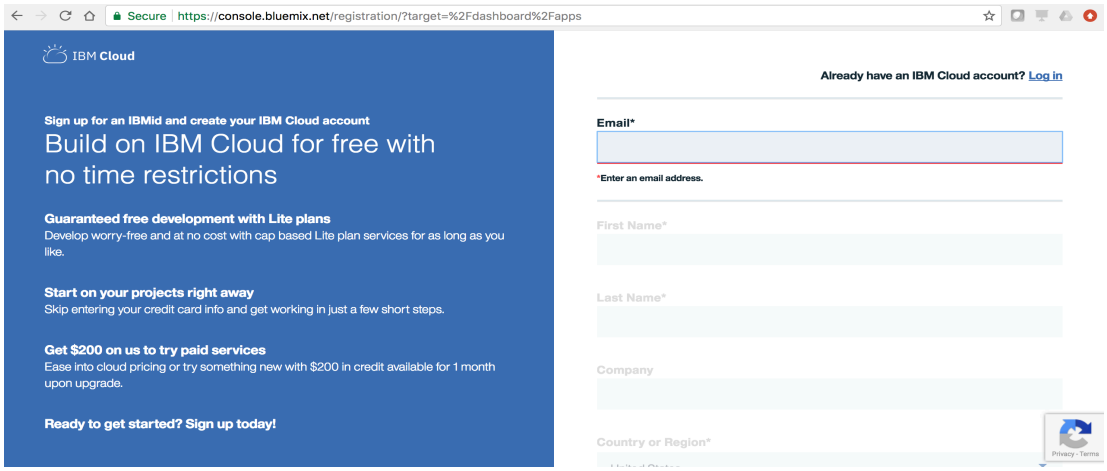
0.8 Labs Accessing IBM Cloud: Create a IBM Cloud User ID

For the cloud labs, IBM Cloud is used for the hosting environment. If you already have an IBM Cloud account, you may skip this part. Your 30-day Cloud trial is free, with no credit card required. You get access to 2 GB of runtime and container memory to run apps, unlimited IBM services and APIs.

__1. To begin, visit https://bluemix.net/ (redirects to console.bluemix.net) and select the **Create a free account** link. If you don't see a sign-up link, you should already be logged in, though you will need to know your login and password for later steps.



__2. On the sign-up page, enter your email address and the other required information. Your IBM ID and IBM Cloud information should be sent to your email account shortly.



__3. Once you receive the email message in your account, follow the steps to verify your address. Once verified, you will be able to log in the IBM Cloud with the password you specified in the previous steps.

__4. Once created, open your account in the IBM Cloud console. Visit https://console.ng.bluemix.net and click **LOG IN**. Enter your email id and then your password as requested.

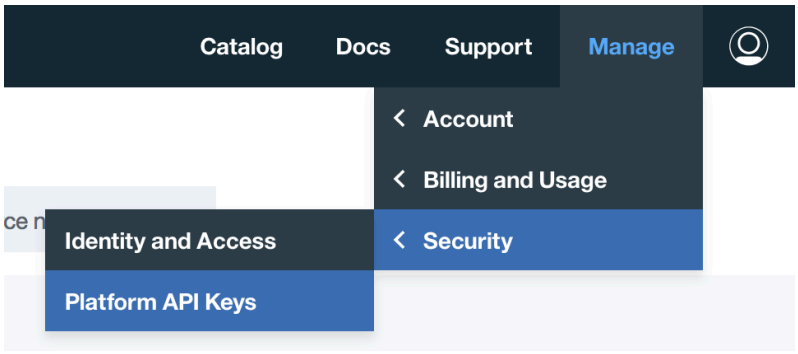
__5. Once logged in, you may need to create a new space and organization. If you are required to create these, you will be immediately asked to do so by the IBM Cloud console (otherwise, proceed to the next part).

0.9 Labs Accessing IBM Cloud: Create a IBM Cloud API Key to use for authentication

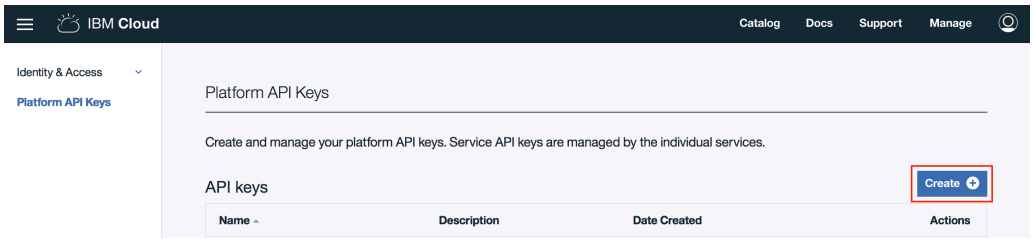
As a IBM Cloud user, you might want to use an API key when you enable a program or script without distributing your password to the script or worry about dealing with password management. A benefit of using an API key can be that a user or organization can create several API Keys for different programs and the API keys can be deleted independently if compromised without interfering with other API keys or even the user.

__1. Create a Platform API Key to use to authenticate with IBM Cloud.

__a. Click **Manage > Security > Platform API Keys**



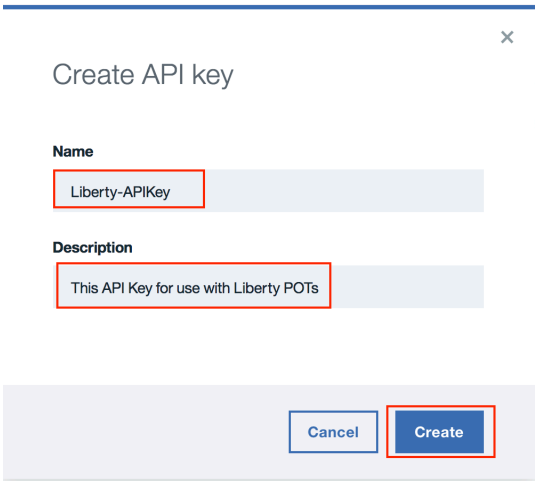
__b. Click **Create**



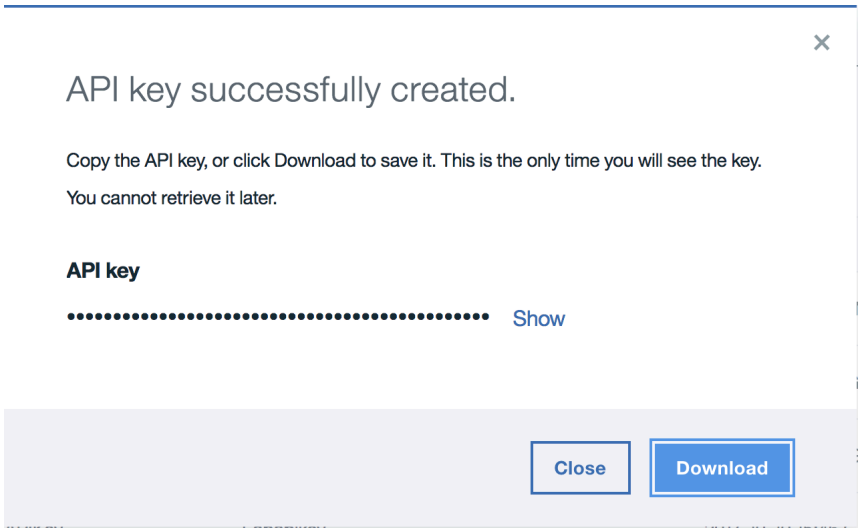
__c. Enter the Name and a description; then click **Create**

__i. Name: **Liberty-APIKey**

__ii. Description: **This API Key for use with Liberty POTs**



__d. Click **Download**



__e. Find the downloaded file named **apiKey.json**. (This should be in your browsers Download folder) Now rename the file to **Liberty-APIKey.json.** There is a string in the file that will be used in lieu of a username/password.

__f. Copy the **Liberty-APIKey.json** to {LAB_HOME} just so it is not lost. Unfortunately, this key is only downloadable in a file once. If lost, another key will need to be generated.

__g. The file contents will look accordingly. The string in bold is your “password” that maps to the “user” or “email address” of **apikey**

```
{
        "name": "Liberty-APIKey",
        "description": "",
        "createdAt": "2017-06-26T16:16+0000",
        "apiKey": "gI2-RsH8DHWGhCwWA-K61PSdWbLawRlgpAiGixmq7ZmD"
}
```

0.10 Labs Accessing IBM Cloud: Install the Command Line Interface (CLI) tools

You can use the command line interface to deploy and modify applications and service instances.

https://console.bluemix.net/docs/cli/index.html#cli

For these labs, Download the IBM Cloud CLI interface (bx.

https://console.bluemix.net/docs/cli/reference/bluemix_cli/get_started.html#getting-started

Once installed, executing

bx should result in:

```
$  bx
NAME:
   bx - A command line tool to interact with Cloud
USAGE:
   [environment variables] bx [global options] command [arguments...] [command options]
VERSION:
…
```

This completes the lab exercise.

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