

OSE-2 AUTO SCRIPT DEPLOYMENT GUIDE



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OSEv2 Auto Script Deployment Guide V 1.0
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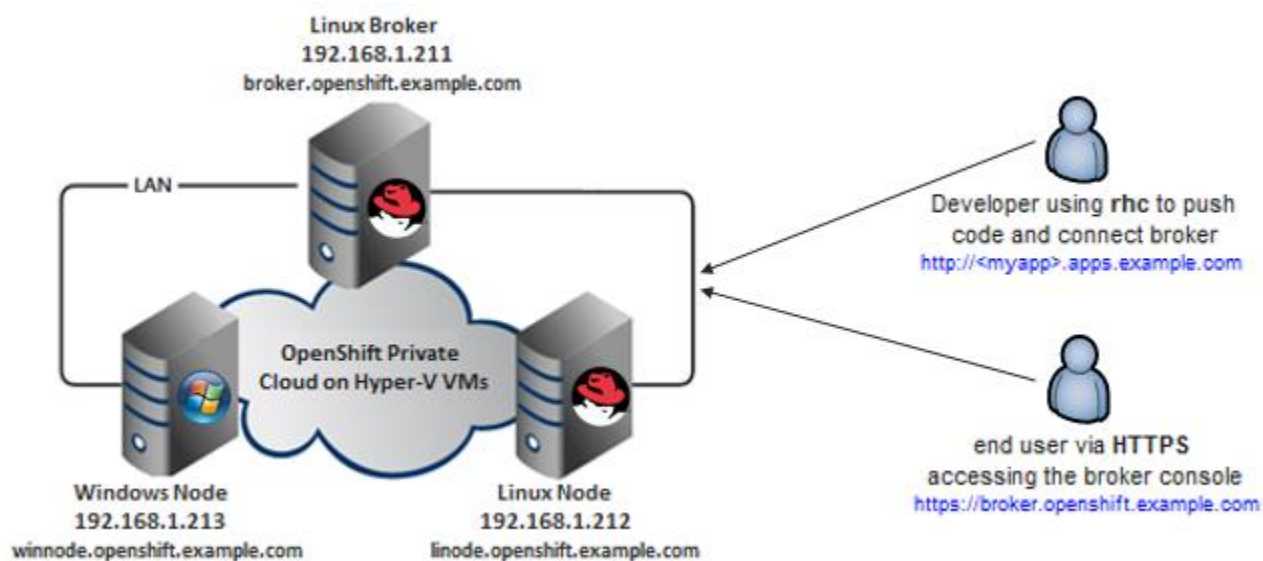
OSE-2 INSTALLATION GUIDE

DOCUMENT SUMMARY

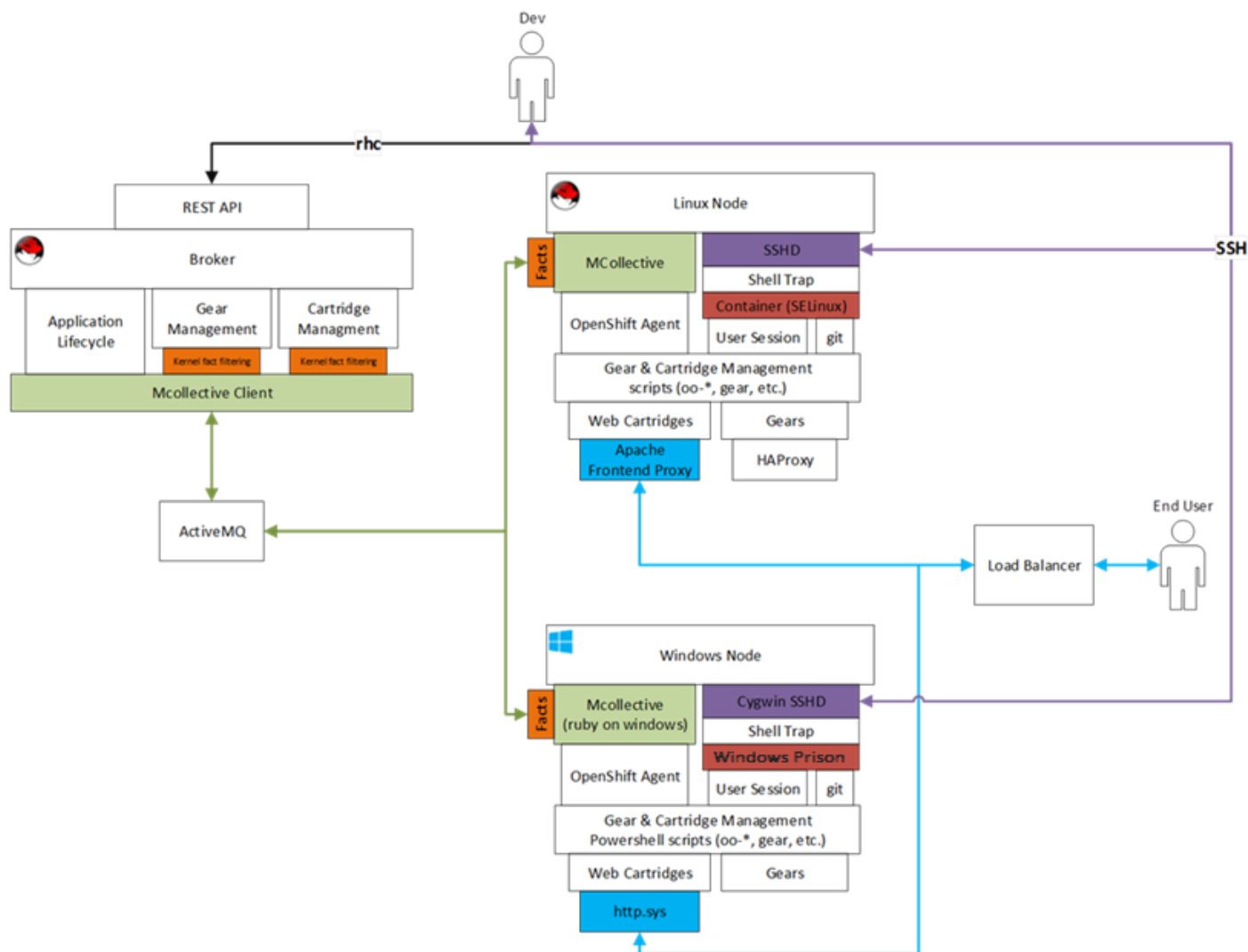
This document provides instructions on how to deploy an OpenShift Enterprise environment using an OpenShift Enterprise installation.

The document also provides information about OpenShift Topology, System requirements, Windows and Linux Prerequisites & deployment steps, Steps to import .NET and MSSQL cartridges, creating Windows Applications and testing it.

1. OPENSIFT CLOUD TOPOLOGY



1.1 OPENSIFT ARCHITECTURE DIAGRAM



2. SYSTEM REQUIRMENTS

2.1 Linux Broker System Requirement

Hardware

| | |
|--------------|---------------------------------|
| OS: | RHEL6.6 – (for OpenShift Setup) |
| Hostname: | broker.openshift.example.com |
| RAM: | 10GB |
| HDD: | 150GB |
| IP: | 192.168.1.211 |
| Domain Name: | openshift.example.com |

2.2 Linux Node System Requirement

Hardware

| | |
|--------------|---------------------------------|
| OS: | RHEL6.6 – (for OpenShift Setup) |
| Hostname: | linode.openshift.example.com |
| RAM: | 10GB |
| HDD: | 150GB |
| IP: | 192.168.1.212 |
| Domain Name: | openshift.example.com |

2.3 Windows System Requirement

Hardware

| | |
|-------------|--------------------------------|
| OS: | Windows Server 2012 Datacenter |
| Hostname: | winnode.openshift.example.com |
| RAM | 10GB |
| HDD | 150GB |
| IP: | 192.168.1.213 |
| DNS suffix: | openshift.example.com |

2.4 DNS Configurations

- **example.com**
 - **apps.example.com** - Used for OpenShift applications (Cloud Domain)
 - **openshift.example.com** - Used for OpenShift Hosts
 - **broker.openshift.example.com** - The host name of our Droplet(Broker FQDN)

3. PREREQUISITE AND DEPLOYMENT

3.1 Linux Broker Prerequisite

Supported Operating System

OpenShift Enterprise is supported on; 64-bit versions of Red Hat Enterprise Linux (RHEL) 6.4 or higher. It is not supported on Fedora, RHEL 7.x, or CentOS 7.x. A minimal installation of RHEL is recommended to avoid package incompatibilities with OpenShift. This deployment has used RHEL 6.6 x64 image on a 10 GB Droplet.

Various methods you can use for deploying OpenShift Enterprise, one of them is Click2Cloud OSEV2 Script:

- The OSEv2 **install.sh** utility, it interactively gathers information about a deployment before automating the installation of an OpenShift Enterprise host. This method is intended for trials as well as production environment.
- In this deployment, we have used OSEv2 **install.sh** utility.

Install Linux 6.6 OS and Register the Subscription by command

If you do not have redhat subscription, you can register for the trial subscription from [here](#) (For POC only) or contact Redhat Support.

Once you have the subscription account details, register the subscription on broker/node using below command.

```
# subscription-manager register --username <username> --password <password> --auto-attach
```

e.g.: # subscription-manager register --username **demo** --password **demo123** --auto-attach

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Check the available subscription with your account and get the pool id (copy this pool id it will require in further installation)

```
# subscription-manager list --available

+-----+
| Available Subscriptions |
+-----+

Subscription Name:      OpenShift Enterprise Broker
Infrastructure
SKU:                    SYS####
Pool Id:                 Example_3affb61f013b3ef6a5fe0b9a
Quantity:               1
Service Level:          Layered
Service Type:           L1-L3
Multi-Entitlement:       No
Ends:                   01/01/2020
System Type:            Physical
```

Attach the pool id having OSE subscription

```
#subscription-manager attach --pool <your pool id>
```

e.g.: # subscription-manager attach --pool **3affb61f013b3ef6a5fe0b9a**

Enable only the Red Hat OpenShift Enterprise 2.2 Infrastructure channel:

```
#subscription-manager repos --enable rhel-6-server-ose-2.2-infra-rpms
```

Confirm that **yum repolist** displays the enabled channel:

```
# yum repolist

repo id                                repo name
rhel-6-server-ose-2.2-infra-rpms      Red Hat OpenShift Enterprise 2.2
Infrastructure (RPMs)
```

3.1.1 Linux Broker Deployment

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Run the Installation Utility

1. You will get the Installation script with your **Click2Cloud OpenShift .NET development kit** from [here](#) or you can download (**install.sh** & **openshift.sh**) installation utility directly using the below command:

```
# curl -O https://raw.githubusercontent.com/Click2Cloud/openshift2/master/Click2Cloud_OpenShift.NET_development_kit/osev2-script/install.sh  
# curl -O https://raw.githubusercontent.com/Click2Cloud/openshift2/master/Click2Cloud_OpenShift.NET_development_kit/osev2-script/openshift.sh
```

2. Execute the installation utility to interactively configure one or more hosts:

```
# sh install.sh
```

3. Follow the instructions provided below to deploy OpenShift Enterprise.

OpenShift Enterprises uses an interactive installation process. There are quite a few questions to answer, so pay attention! The questions are shown below, with the user input in **red**.

On the Main Menu you will see the multiple choices, which we will use one by one. So let's start with installing broker.

- I. Enter **1** to install broker:

```
      M A I N   M E N U  
      *****  
  1   Install Broker  
  2   Install Node  
  3   Check Broker  
  4   Check Node  
  5   Manage District on broker  
  6   Exit  
  
Enter Your Choice (1-6) : 1
```

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- II. Press **y** if you have RHN Account, redhat subscription is required to configure OSE v2:

```
Do you have RHN Account y/n : y
```

- III. Enter your subscription details - User ID, Password and Subscription Pool_Id:

```
Subscription Details
*****
Enter RHN User Name : 
RHN Password : *****
Enter Your Pool_id or Paste here
3af  9a
```

- IV. Press **y** to enter password details for Mcollective, MongoDB and Openshift. If you select **n** it will randomly generate the password:

```
Broker: Password Details
*****
Do you want to enter MCollective Password ( y/n): y
Do you want to enter MongoDB Broker Password ( y/n): y
Do you want to enter Openshift Password ( y/n): y
Enter MCollective Password: *****
Enter MongoDB Password: *****
Enter OpenShift Password: *****
```

- V. Enter the DNS details here- Cloud domain name, Hosts domain name and Broker FQDN:

```
Get Host Domain Name Details
*****
Enter Domain Name (default: apps.example.com) :
apps.example.com
Enter hosts domain (default: openshift.example.com) :
openshift.example.com
Enter Broker hostname (default: broker.openshift.example.com) :
broker.openshift.example.com
```

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VI. Enter Broker IP Address:

```
Get Name Entries
*****
Enter Broker ip (Ex: 192.168.1.201):
192.168.1.211
```

VII. Select the default gear size for broker:

```
Get Gear Details
*****
Enter Default Gear Size :
1. Small
2. Medium
3. Large
*****
Enter Your Choice (1-3) : 1
```

VIII. Review the entered details before the installation starts. All the installation logs will store on openshift.sh.broker.log file in current directory. If you want to re-enter the details press **n** else press **y** to proceed the installation:

```
*****
sh openshift.sh install_method=rhsm rhn_user=_____ rhn_pass=_____ sm_reg_pool=3a_____
_____9a install_components=broker,named,activemq,datastore mcollective_password=12345 mongod
b_broker_password=12345 openshift_password=12345 domain=apps.example.com hosts_domain=openshift
.example.com broker_hostname=broker.openshift.example.com named_entries=broker:192.168.1.211,ac
tivemq:192.168.1.211 valid_gear_sizes=large,medium,small default_gear_size=small default_gear_c
apabilities=small 2>&1 | tee -a openshift.sh.broker.log
*****

check all above parameters
if correct then press y otherwise press n
y
```

Once the installation started, it will take an hour to complete the installation. Make sure you have full internet access on broker to get the required packages from internet.

Once it's completed, it will return to the main menu.

- IX. Now check the broker is installed successfully and the services is running properly. Enter **3** to check broker:

```
      M A I N   M E N U
      *****
1      Install Broker
2      Install Node
3      Check Broker
4      Check Node
5      Manage District on broker
6      Exit

Enter Your Choice (1-6) : 3
```

- X. It will check all the required services and configuration files. If everything is up and running you will see the **PASS** message:

```
INFO: txt record successfully deleted
INFO: checking messaging configuration
INFO: messaging plugin = OpenShift::MCollectiveApplicationContainerProxy
PASS
Press Enter Key to Continue
```

Now you have successfully configured Broker in 10 steps.

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To check the broker from console:

Please reset the **demo** user password to login from browser.

```
# htpasswd /etc/openshift/htpasswd demo
```

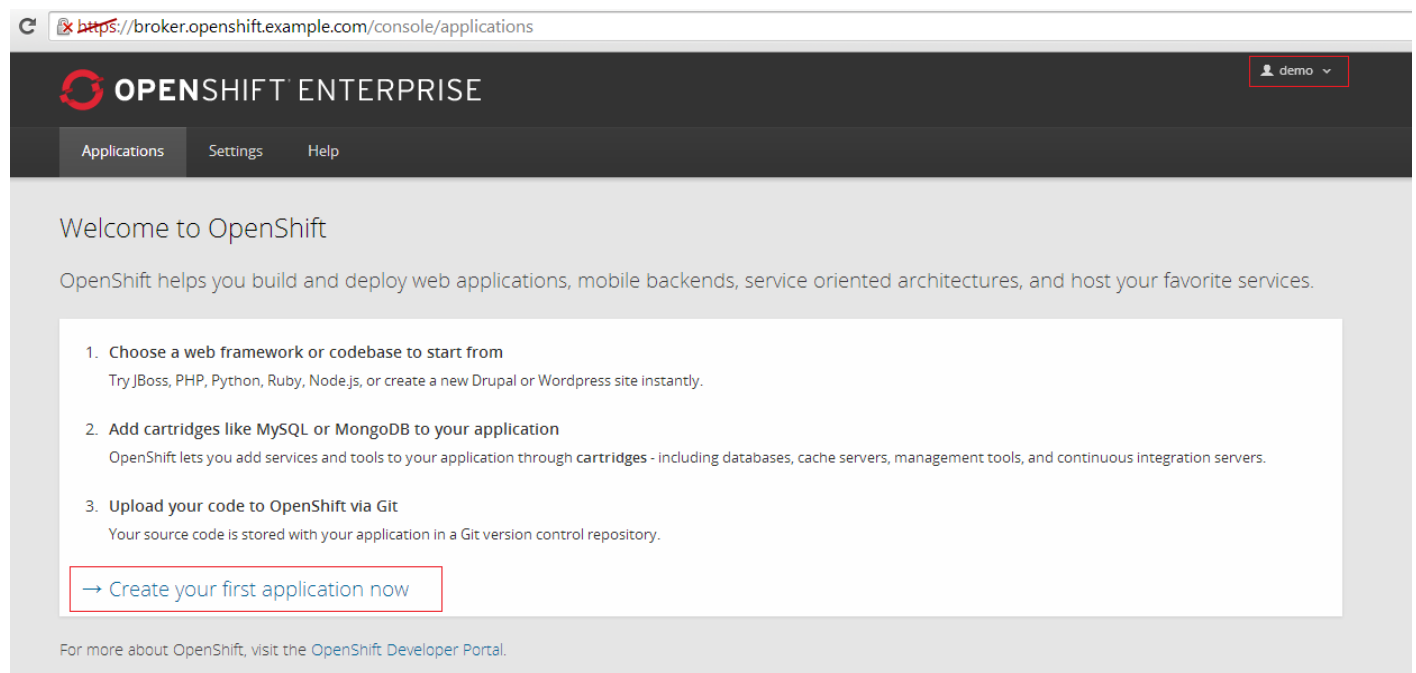
New password: *****

Re-type new password: *****

Now open browser and enter the broker FQDN or IP address to login on broker console:

<https://broker.openshift.example.com/>

Once you login you will see the openshift console to create applications:



Please Note: To create linux based application you have to add linux node to broker. Please follow the further steps to configure and add linux node.

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3.2 Linux Node Prerequisite

Supported Operating System

OpenShift Enterprises is supported on; 64-bit versions of Red Hat Enterprise Linux (RHEL) 6.4 or higher. It is not supported on Fedora, RHEL 7.x, or CentOS 7.x. A minimal installation of RHEL is recommended to avoid package incompatibilities with OpenShift. This deployment have used RHEL 6.6 x64 image on a 10 GB Droplet.

RHN Subscription Required

You can use the same subscription account and pool id for linux node which we used for broker.

Register DNS entries to host file

Make sure the broker and node should resolves its dns and ip. Follow to below steps for the same:

On Broker:

Use the following command to register the linux node on the broker dns server:

```
# oo-register-dns --with-node-hostname linode \  
--with-node-ip 192.168.1.212 \  
--domain openshift.example.com \  
--dns-server broker.openshift.example.com
```

Please do the following entry in your Broker Server in **/etc/hosts** file

```
192.168.1.212 linode.openshift.example.com
```

On Linux Node:

Please do the following entry in your **Linux Node** Server in **/etc/hosts** file

```
192.168.1.211 broker.openshift.example.com
```

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3.2.1 Linux Node Deployment

Run the Installation Utility

1. You will get the Installation script with your **Click2Cloud OpenShift .NET development kit** from [here](#) or you can download (**install.sh** & **openshift.sh**) installation utility directly using the below command:

```
# curl -O https://raw.githubusercontent.com/Click2Cloud/openshift2/master/Click2Cloud_OpenShift.NET_development_kit/osev2-script/install.sh
```

```
# curl -O https://raw.githubusercontent.com/Click2Cloud/openshift2/master/Click2Cloud_OpenShift.NET_development_kit/osev2-script/openshift.sh
```

2. Execute the installation utility to interactively configure one or more hosts:

```
# sh install.sh
```

3. Follow the instructions provided below to deploy OpenShift Enterprise.

OpenShift Enterprises uses an interactive installation process. There are quite a few questions to answer, so pay attention! The questions are shown below, with the user input in **red**.

On the Main Menu you will see the multiple choices, which we will use one by one. So let's start with installing broker.

- I. Enter **2** to install node:

```
      M A I N   M E N U
      *****
1      Install Broker
2      Install Node
3      Check Broker
4      Check Node
5      Manage District on broker
6      Exit

Enter Your Choice (1-6) : 2
```

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- II. Press **y** if you have RHN Account, redhat subscription is required to configure linux node:

```
Do you have RHN Account y/n : y
```

- III. Enter your subscription details - User ID, Password and Subscription Pool_Id (you can use the same subscription which used in broker):

```
Subscription Details
*****
Enter RHN User Name : 
RHN Password : *****
Enter Your Pool_id or Paste here
3af 9a
```

- IV. Enter mcollective password which provided in broker, else you can check the **client.cfg** file on broker at this path – **/opt/rh/ruby193/root/etc/mcollective/client.cfg** :

```
Node MCollective Passwdord:
*****
Enter Mcollective Password : *****
```

- V. Enter the details like cloud domain, host domain, broker fqdn, broker ip and linux node fqdn:

```
Node:
*****
domain (default: apps.example.com) : apps.example.com
Host Domain (default: openshift.example.com) : openshift.example.com
Broker Host Name (default: broker.openshift.example.com) : broker.openshift.example.com
Enter Broker ip address is compulsory (Ex: 192.168.1.201) : 192.168.1.211
Node Host Name (default: linode1.openshift.example.com) : linode.openshift.example.com
```


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- VI. Select the default gear size for broker:

```
Get Gear Details
*****
Enter Default Gear Size :
  1. Small
  2. Medium
  3. Large
*****
Enter Your Choice (1-3) : 1
```

- VII. Type the cartridges name which you want to download and configure, if you are not sure leave it blank, it will select the default list of cartridges shown below:

```
Node Cartridges:
*****
Cartridges (default: php,ruby,postgresql,haproxy,jenkins) : php,ruby,haproxy
```

- VIII. Review the entered details before the installation starts. All the installation logs will store on openshift.sh.broker.log file in current directory. If you want to re-enter the details press **n** else press **y** to proceed the installation:

```
*****
sh openshift.sh install_method=rhsm rhn_user=_____ rhn_pass=_____ sm_reg_pool
=3a_____9a install_components=node mcollective_password=12345 do
main=apps.example.com hosts_domain=openshift.example.com node_hostname=linode.op
enshift.example.com broker_ip_addr=192.168.1.211 broker_hostname=broker.openshif
t.example.com node_profile=small cartridges=php,ruby,postgresql,haproxy,jenkins
2>&1 | tee -a openshift.sh.node.log
*****

check all above parameters
if correct then press y otherwise press n
y
```

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Once the installation started, it will take an hour to complete it. Make sure you have full internet access on Linux Node to get the required packages from internet and broker should be reachable from node.

Once it's completed, it will return to the main menu.

- IX.** Now check the Linux Node is installed successfully and the services is running properly. Enter **4** to check node:

```
      M A I N   M E N U
      *****
1      Install Broker
2      Install Node
3      Check Broker
4      Check Node
5      Manage District on broker
6      Exit

Enter Your Choice (1-6) : 4
```

- X.** It will check all the required services, node.conf and other configuration files. If everything is up and running you will see the **PASS** message:

```
INFO: checking application dirs
INFO: checking system httpd configs
INFO: checking cartridge repository
PASS
Press Enter Key to Continue
```

You have successfully configured Linux Node in 10 steps.

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On Broker

Now go to broker and check the connectivity using the below command:

```
[root@broker ~]# oo-mco ping  
linode.cloud.example.com           time=219.57 ms  
  
---- ping statistics ----  
2 replies max: 219.57 min: 218.51 avg: 219.04
```

You can see the node is available at broker. Now create district on broker and add linux node to it.

Create District (on Broker) and add Linux Node

To create district run the **install.sh** utility downloaded earlier on broker.

```
# sh install.sh
```

I. Enter **5** to Manage District:

```
      M A I N   M E N U  
      *****  
1    Install Broker  
2    Install Node  
3    Check Broker  
4    Check Node  
5    Manage District on broker  
6    Exit  
  
Enter Your Choice (1-6) : 5
```

II. Enter 1 to Create District:

```
      M A N A G E   D I S T R I C T

1   Create District

2   Add Node to a district

3   Return to Main Menu

Enter Your Choice (1-3) : 1
```

III. Enter 1 to select linux platform and enter the name for linux district:

```
District Creation on Broker:
*****
      Please Select the platform for district

          1 Linux
          2 Windows

      Enter Your choice : 1
      Enter District Name : linuxdist
```

IV. It will create district and show the information as shown below:

```
      Please Select the platform for district

          1 Linux
          2 Windows

      Enter Your choice : 1
      Enter District Name : linuxdist
node_profile not specified. Using default: medium
Successfully created district: 556e43bf32a55eefcd000001

{"_id"=>"556e43bf32a55eefcd000001",
 "uuid"=>"556e43bf32a55eefcd000001",
 "available_uids"=>"<6000 uids hidden>",
 "name"=>"linuxdist",
 "platform"=>"linux",
 "gear_size"=>"medium",
 "available_capacity"=>"6000",
 "max_uid"=>"6999",
 "max_capacity"=>"6000",
 "active_servers_size"=>"0",
 "updated_at"=>"2015-06-03 00:01:03 UTC",
 "created_at"=>"2015-06-03 00:01:03 UTC"}

Press Enter Key to continue
```

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- V. In the Manage District menu, select **2** to Add Node to a district:

```
      M A N A G E   D I S T R I C T

1      Create District
2      Add Node to a district
3      Return to Main Menu

Enter Your Choice (1-3) : 2
```

- VI. Enter the district name and linux node fqdn, once you enter it will check and add the linux node to district:

```
Adding Node to a District :
*****
      Enter District Name : linuxdist
      Enter Node FQDN Name (Ex. l1node1.openshift.example.com) : l1node.openshift.example.com
Success for node 'l1node.openshift.example.com'!

{"_id"=>"556e43bf32a55eefcd000001",
 "active_servers_size"=>1,
 "available_capacity"=>6000,
 "available_uids"=>"<6000 uids hidden>",
 "created_at"=>"2015-06-03 00:01:03 UTC",
 "gear_size"=>"medium",
 "max_capacity"=>6000,
 "max_uid"=>6999,
 "name"=>"linuxdist",
 "platform"=>"linux",
 "servers"=>
  [{"_id"=>"556e46de32a55efc27000001",
   "active"=>true,
   "name"=>"l1node.openshift.example.com",
   "unresponsive"=>false}],
 "updated_at"=>"2015-06-03 00:01:03 UTC",
 "uuid"=>"556e43bf32a55eefcd000001"}

Press Enter Key to Continue
```

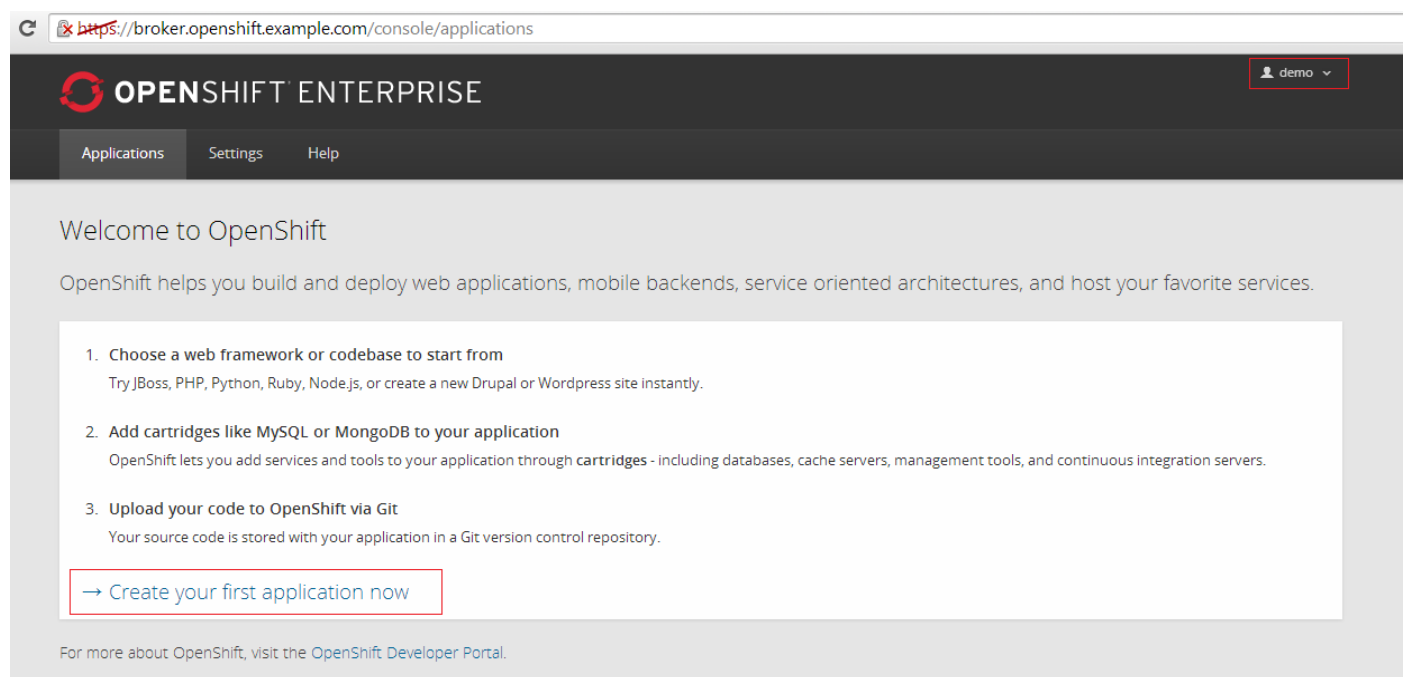
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Create first application using linux cartridge

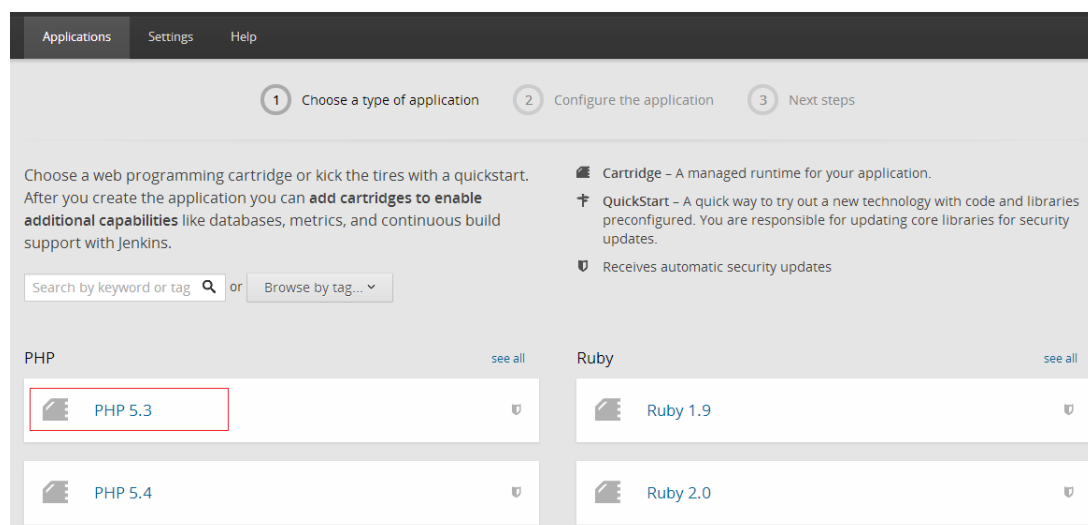
Open browser and enter the broker FQDN or IP address to login to broker console:

<https://broker.openshift.example.com/>

Once you login you will see the openshift console to create applications, Click on Create your first application now:



Now select the cartridge to create application:



Provide meaningful name to your application and click to Create Application:

1 Choose a type of application

2 Configure the application

3 Next steps

Based On

PHP 5.3 Cartridge

PHP is a general-purpose server-side scripting language originally designed for Web development to produce dynamic Web pages. Popular development frameworks include CakePHP, Zend, Symfony, and Code Igniter.
<http://www.php.net>
★ OpenShift maintained
🛡️ Receives automatic security updates

Public URL

http://

php

-demo.apps.example.com

You can also [create a new domain](#).
OpenShift will automatically register this domain name for your application. You can add your own domain name later.

Source Code

Optional URL to a Git repository

Branch/tag

We'll create a Git code repository in the cloud, and populate it with a set of reasonable defaults. If you provide a Git URL, your application will start with an exact copy of the code and configuration provided in this Git repository.

Gears

medium

Gears are the application containers running your code.

Cartridges

PHP 5.3

Applications are composed of cartridges - each of which exposes a service or capability to your code. All applications must have a web cartridge.

Scaling

No scaling

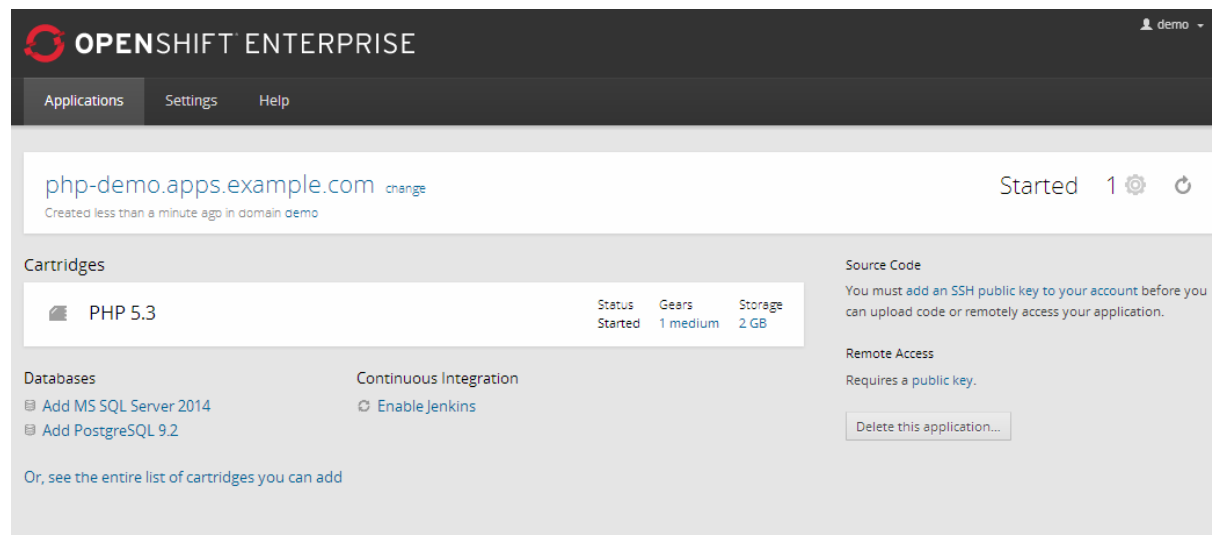
OpenShift automatically routes web requests to your web gear. If you allow your application to scale, we'll set up a load balancer and allocate more gears to handle traffic as you need it.

Back

Create Application

+1

It will create PHP application in couple of mins:



So till now we have successfully configured broker, configured linux node and added it to broker, created district and created first app using linux cartridge.

Now we will configure windows node with openshift broker.

3.3 Windows Node Prerequisites

Please Note:

All the tasks and operations needs to be performed using an Administrator account/user.

Supported Windows OS versions;

- Window Server 2012 (Standard / Datacenter)
- Window Server 2012 R2 (Standard / Datacenter)

Optional (You can skip SQL server installation if you don't required MSSQL cartridges);

- ✓ SQL Server is not mandatory but if you are planning to use MSSQL cartridges then you need to install SQL Server on windows node. Our MSSQL cartridge supports SQL 2008R2, SQL 2012 and SQL 2014 (x64 bit versions only) of any edition. You can install any one (SQL Server) of them or can install all, as per your requirements.

You will get the SQL Server installation steps [here](#).

For each SQL server you have to provide different named instance. Below are the details;

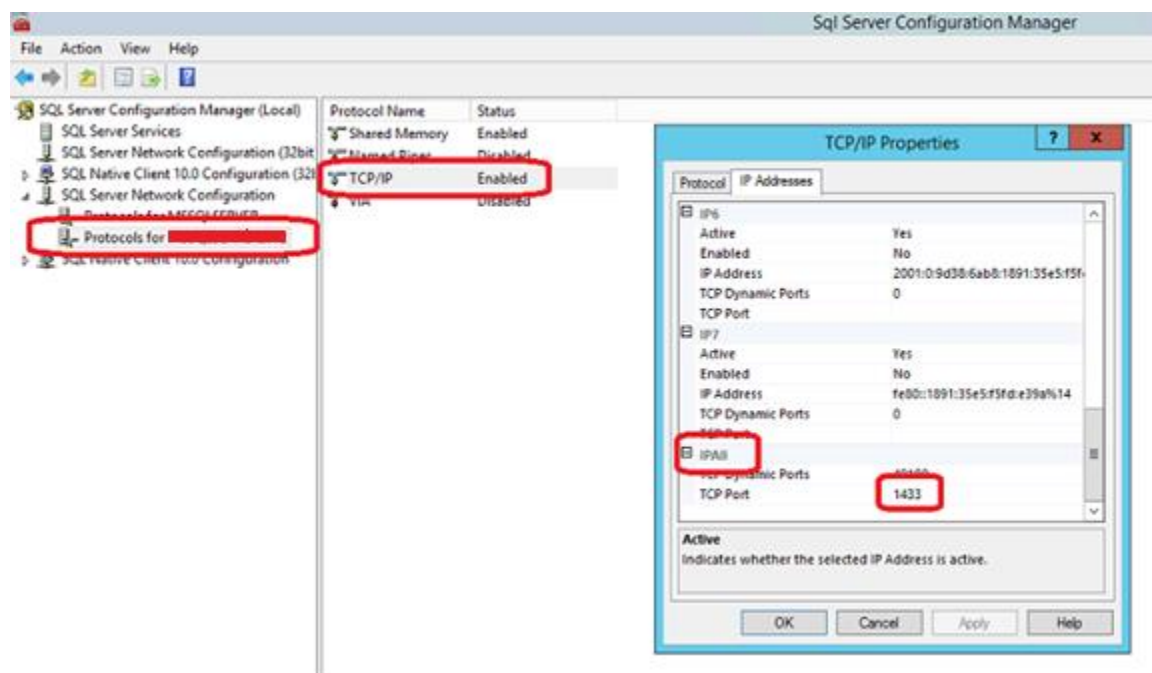
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- a) Install SQL Server 2008 R2 with default instance (Only Database Engine) and with mixed authentication. After successfully installation of SQL Server, please stop SQL Server (**MSSQLSERVER**) Windows Service, then disable it. (The Window node installation script will check to see if this was setup correctly)
- b) Install SQL Server 2012 with a simple named instance **MSSQLSERVER2012** (Only database). After successfully installation of SQL Server, please stop SQL Server (**MSSQLSERVER2012**) Windows Service, then disable it. (The Window node installation script will check to see if this was setup correctly). Make sure you set it up with mixed authentication.
- c) Install SQL Server 2014 with a simple named instance **MSSQLSERVER2014** (Only database). After successfully installation of SQL Server, please stop SQL Server (**MSSQLSERVER2014**) Windows Service, then disable it. (The Window node installation script will check to see if this was setup correctly). Make sure you set it up with mixed authentication.

- Enable TCP/IP SQL Server Protocol from SQL Configuration manager to listen to All IPs

Important:

Make sure that the TCP/IP protocol is enabled for SQL Server (any version) and that the port 1433 is set to for "IPAll" in the SQL Server Configuration Manager.



Register DNS on Linux Broker for Windows Node

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Make sure the broker and windows node should resolves its DNS and IP. Follow to below steps for the same:

On Broker Server:

Use the following command to register the linux node on the broker dns server:

```
# oo-register-dns --with-node-hostname winnode \  
--with-node-ip 192.168.1.213 \  
--domain openshift.example.com \  
--dns-server broker.openshift.example.com
```

Please do the following entry in your Broker Server in **/etc/hosts** file

```
192.168.1.213 winnode.openshift.example.com
```

On Windows Node:

Please do the following entry in your **Windows Node** in **c:\windows\system32\drivers\etc\hosts** file

```
192.168.1.211 broker.openshift.example.com  
192.168.1.212 linode.openshift.example.com
```

Important:

Make sure the time of the VM is synced from the internet.

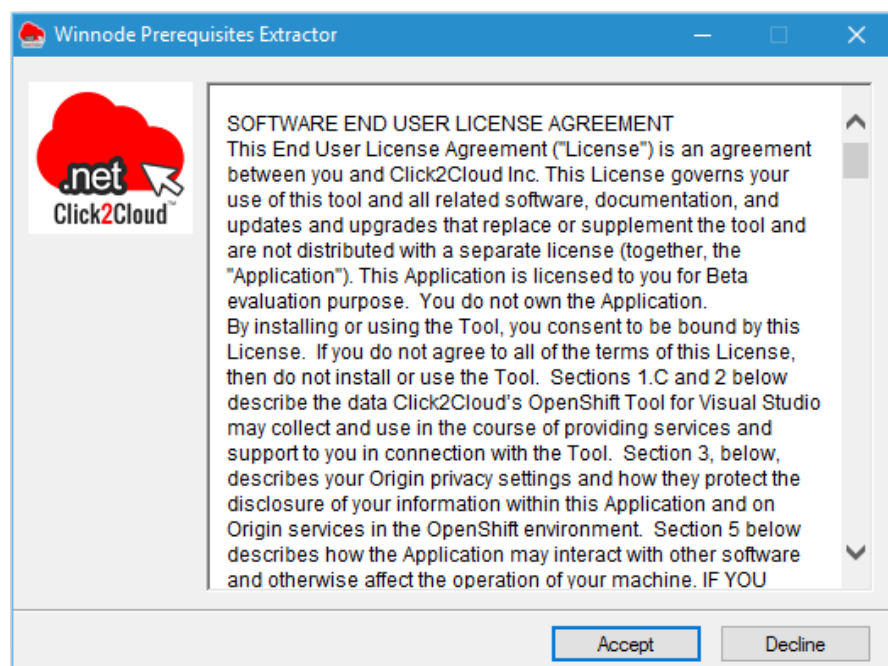
Before proceeding with the Windows installation, you have to make sure your hosts resolve OK

Win-node Prerequisites Download and Extract

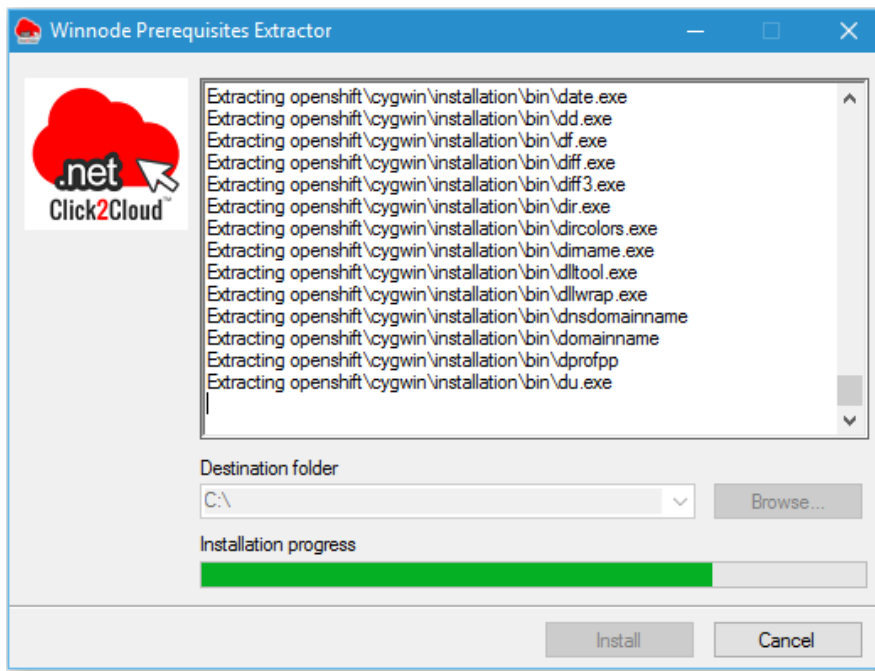
Before you can install **OpenShift Windows Node Installer**, there are a number of prerequisite software's and server configurations you will need to complete in order to prepare the OpenShift Windows node.

You can download **winnode_prerequisites.exe** from [here](#) (file size 929MB). It helps to extract all the required software's automatically to the **C:\winnode_prerequisites** directory.

1. Once you have downloaded, double-click the **winnode_prerequisites.exe** file to launch the Winnode prerequisites wizard and Click **Accept**



- The following wizard shows Prerequisites Extraction Process. Wizard will close automatically after process completion.



Now we have completed the prerequisites part and ready for Windows node deployment.

3.3.1 Windows Node Deployment

For windows node deployment you will require **OpenShift_Windows_Installer.exe** setup, which you have got it with your **Click2Cloud OpenShift .NET development kit**. If not, download from [here](#).

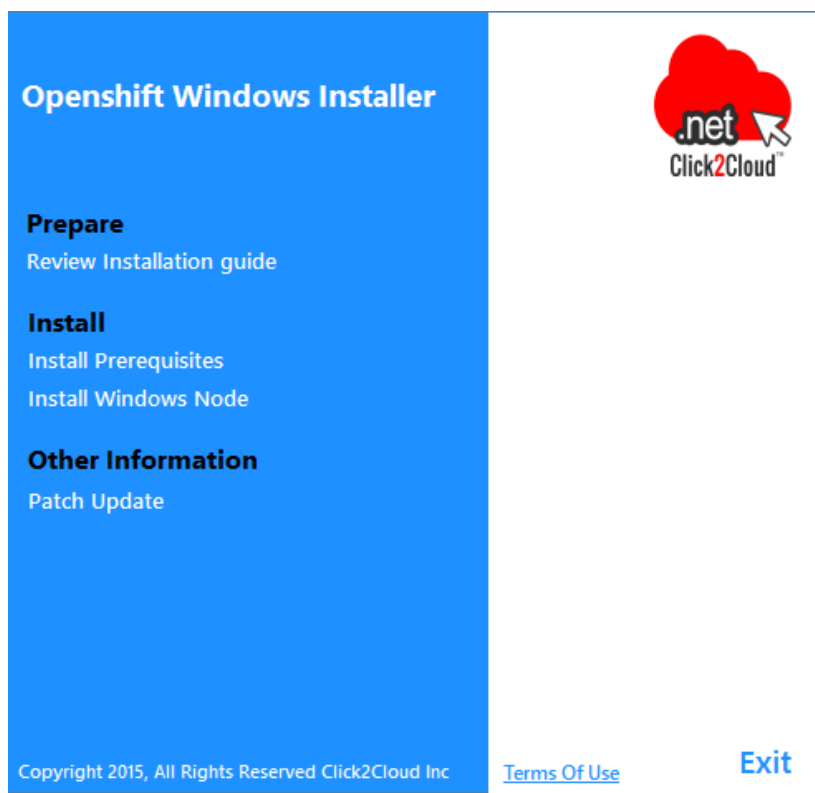
OpenShift Winnode deployment Process is divided into two parts i.e.

- I. **Install Prerequisites**
- II. **Install Windows Node**

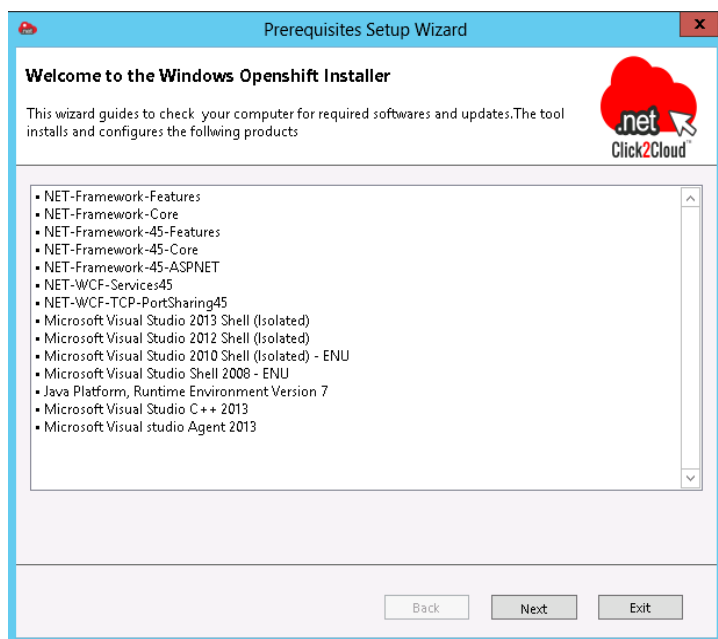
I. Install Prerequisites

Once you have completed prerequisites software's extraction process on windows node, you are ready to run the **OpenShift Windows Installer.exe** to install prerequisite software's.

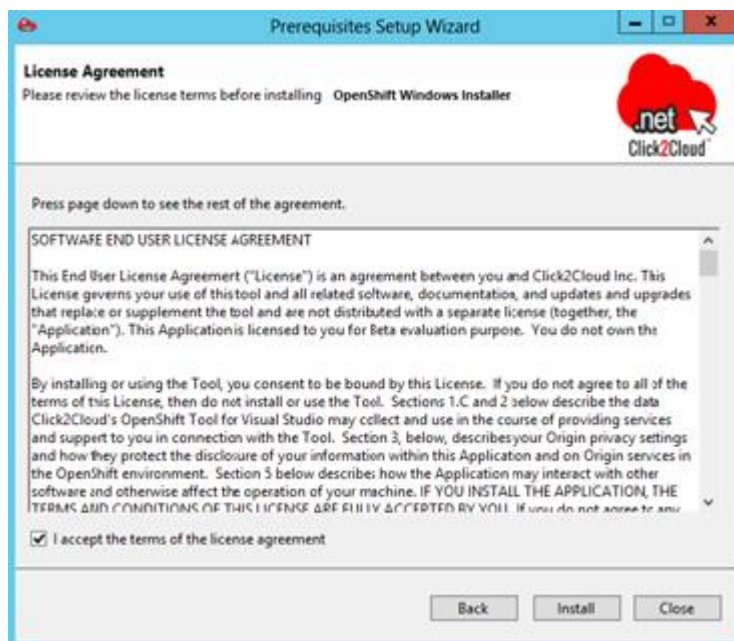
1. Double-click the executable **OpenShift_Windows_Installer.exe** file which is provided under **Click2Cloud OpenShift .NET development kit** to launch OpenShift Windows Installer.



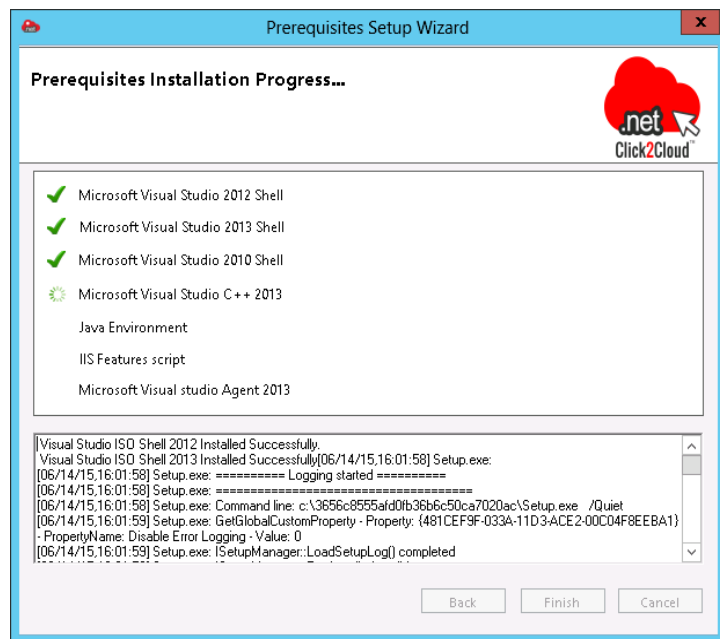
2. In order to install Winnode Prerequisites software's, Click on **Install Prerequisites** link. It will open Prerequisites Setup Wizard and show the list of software's to install and click **Next**



3. Accept the License Agreement and Click **Install**.

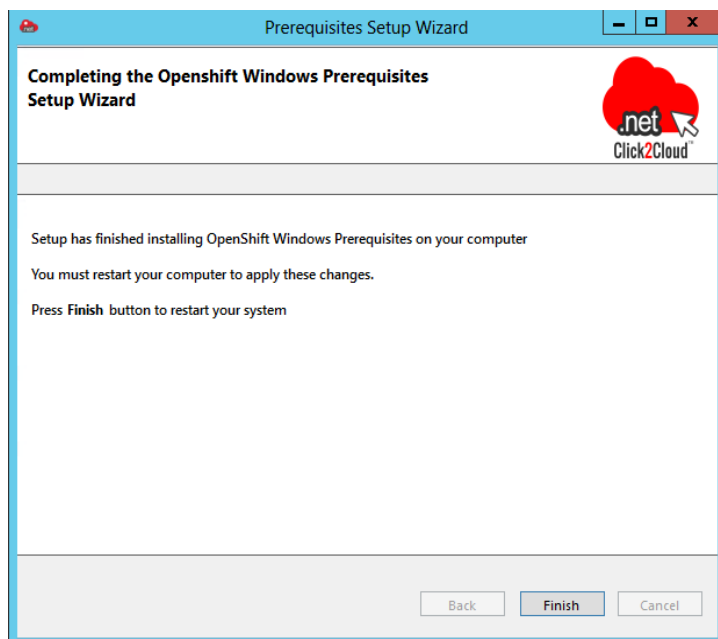


4. Following wizard shows the prerequisites installation progress along with the logs.



5. Click **Finish** to **restart** system after successfully installation Of Windows Prerequisites.

It will automatically restart your computer.



***Note: - We need to run **Install prerequisites** twice Because of these following prerequisites Software behavior.

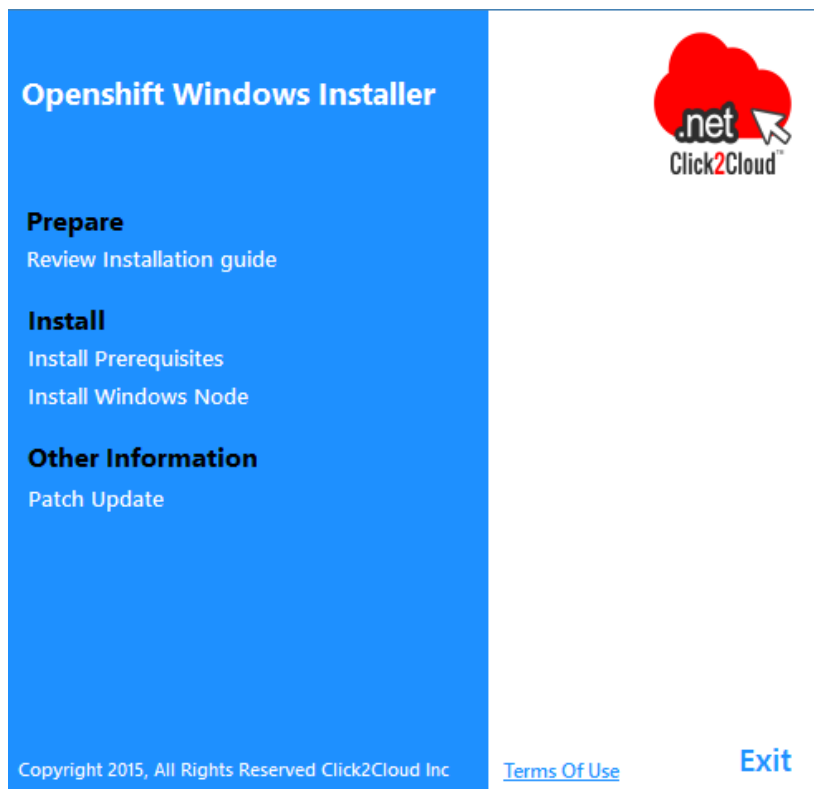
1. Microsoft Visual Studio 2012 shell
2. Microsoft Visual Studio 2013 shell

Both the software's require machine restart. Installer will work fine if you run **Install prerequisites** twice after rebooting the system, so it will install VS 2013 ISO shell on next prerequisite installation.

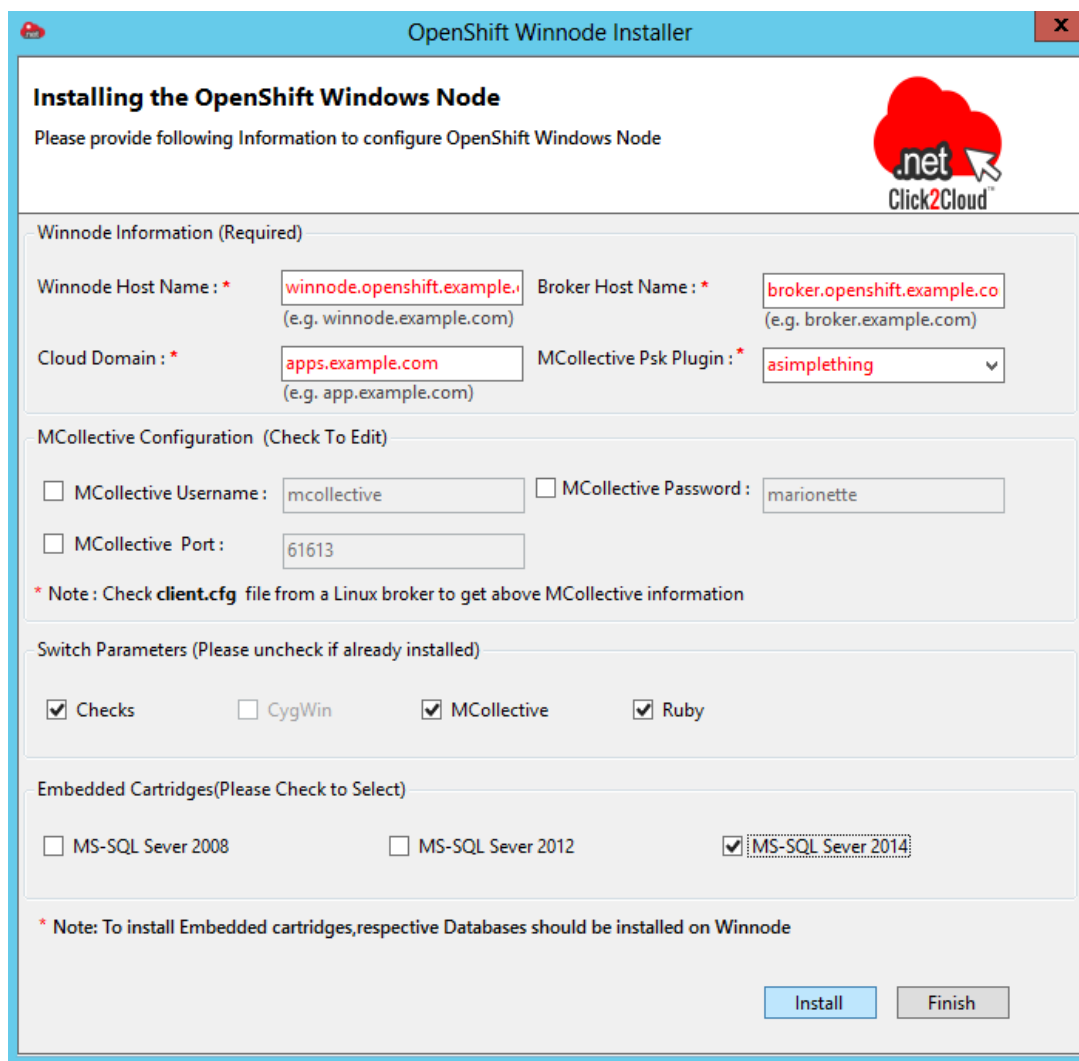
II. Install Windows Node

Once you have finished installing the prerequisites software's on windows node, you are ready to run the **Install Windows Node**.

Again Double-click the executable **OpenShift_Windows_Installer.exe** file to launch OpenShift Windows Installer.



1. In order to install Windows node, Click on **Install Windows Node** link. It will open OpenShift Winnode Installer Wizard.



The screenshot shows the 'OpenShift Winnode Installer' window. The title bar is blue with a red 'x' button. The main content area has a light blue header with the text 'Installing the OpenShift Windows Node' and a sub-header 'Please provide following Information to configure OpenShift Windows Node'. A red cloud logo with '.net' and 'Click2Cloud' is in the top right. The form is divided into several sections: 'Winnode Information (Required)' with fields for 'Winnode Host Name' (winnode.openshift.example.), 'Broker Host Name' (broker.openshift.example.co), 'Cloud Domain' (apps.example.com), and 'MCollective Psk Plugin' (asimplething). 'MCollective Configuration (Check To Edit)' has checkboxes for 'MCollective Username' (mcollective), 'MCollective Password' (marionette), and 'MCollective Port' (61613). 'Switch Parameters (Please uncheck if already installed)' has checkboxes for 'Checks' (checked), 'CygWin', 'MCollective' (checked), and 'Ruby' (checked). 'Embedded Cartridges(Please Check to Select)' has checkboxes for 'MS-SQL Sever 2008', 'MS-SQL Sever 2012', and 'MS-SQL Sever 2014' (checked). A note at the bottom states: '* Note: To install Embedded cartridges,respective Databases should be installed on Winnode'. At the bottom right are 'Install' and 'Finish' buttons.

2. To configure the Openshift Windows Node, we have to provide OpenShift component parameters on above wizard. We have provided the required information and select the MS-SQL 2014 cartridge to deploy on windows node. It will provide .NET and MSSQL 2014 cartridge functionality.

All the Component parameters are explained below.

OpenShift 2.x Auto Script Deployment Guide V1.0

Mandatory PARAMETERS

Winnode Host Name

Public hostname of the windows machine (FQDN). For e.g. –
winnode.openshift.example.com

Broker Host Name

Hostname of the OpenShift broker. For e.g. – *broker.openshift.example.com*

Cloud Domain

The applications domain name, where the applications will host. For e.g. –
apps.example.com

Mcollective Psk Plugin

Psk plugin used in Mcollective. The value for an Openshift Origin is 'unset'.
For a default OpenShift Enterprise installation, the value should be 'asimplething'.

Optional PARAMETERS

Mcollective Information

You will get this Mcollective Information in client.cfg file from Linux Broker

Path – (/opt/rh/ruby193/root/etc/mcollective/client.cfg)

In below format

plugin.activemq.pool.1.port = 61613

plugin.activemq.pool.1.user = mcollective

*plugin.activemq.pool.1.password =******

Mcollective User

ActiveMQ Username. The default ActiveMQ username for an OpenShift installation is
'mcollective'

OpenShift 2.x Auto Script Deployment Guide V1.0

Mcollective port

ActiveMQ Port. The port is to use when connecting to ActiveMQ

Mcollective Password

ActiveMQ Password. The default ActiveMQ password for an ActiveMQ installation is 'marionette'

Ruby

If we **check** Ruby Checkbox, that allows the user to download and install Ruby.

Cygwin

If we **check** Cygwin Checkbox, that allows the user to download and install Cygwin. By default it is disabled because it will installer by winnode prerequisites installer.

Mcollective

If we **check** Mcollective Checkbox, that allows the user to download and install Mcollective.

Checks

If we **check** Checks Checkbox, that allows the user to checking prerequisites.

MS-SQL 2008

If this **uncheck**, then it installs the Windows Node without SQL Server 2008 cartridge support.

Note that the mssql cartridge manifest must be manually update (C:\openshift\cartridges\mssql\metadata\manifest.yml).

MS-SQL 2012

If this **uncheck**, then it installs the Windows Node without SQL Server 2012 cartridge support.

Note that the mssql cartridge manifest must be manually update (C:\openshift\cartridges\mssql\metadata\manifest.yml).

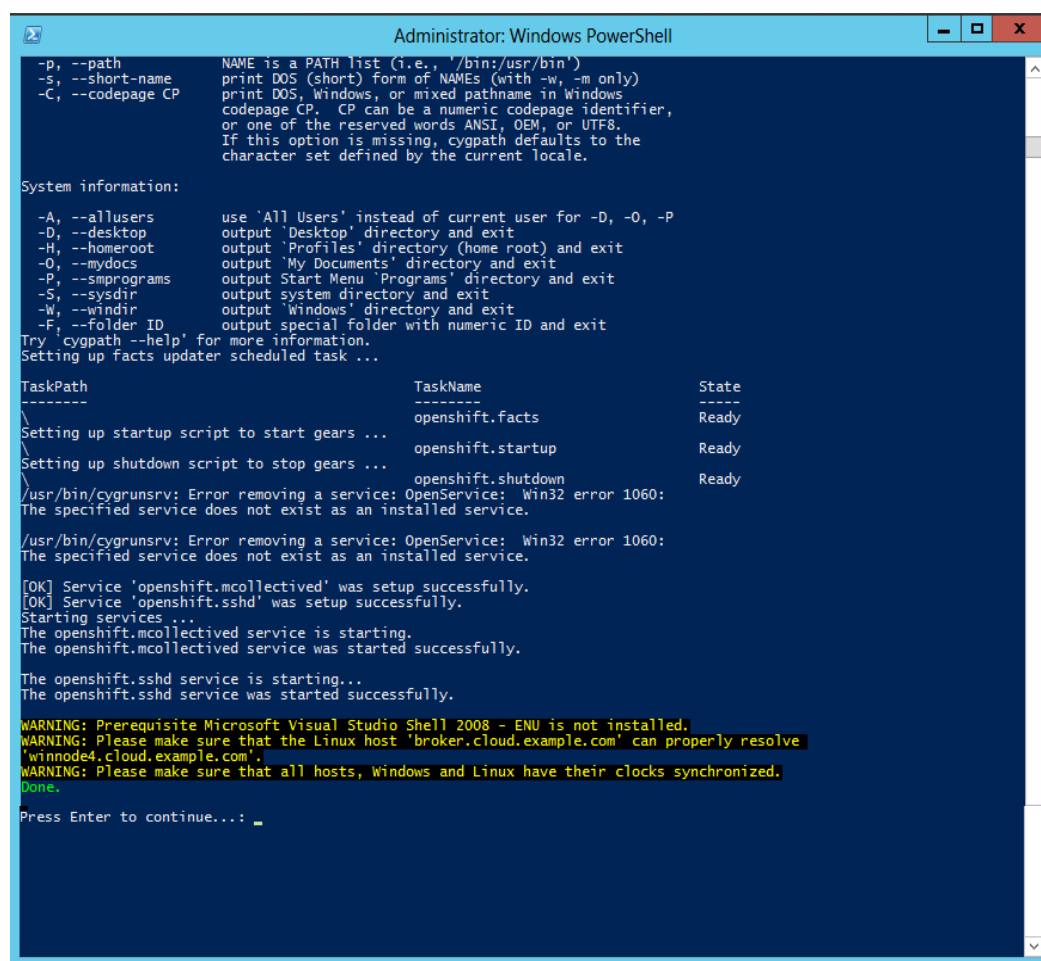
MS-SQL 2014

If this **uncheck**, then it installs the Windows Node without SQL Server 2014 cartridge support.

Note that the mssql cartridge manifest must be manually updated (C:\openshift\cartridges\mssql\metadata\manifest.yml).

3. After providing all component information correctly, You just click **Install** button to start OpenShift Winnode Installation.

Powershell prompt will open up and you will be able to see OpenShift Installation Process.



```
Administrator: Windows PowerShell

-p, --path          NAME is a PATH list (i.e., '/bin:/usr/bin')
-s, --short-name    print DOS (short) form of NAMES (with -w, -m only)
-C, --codepage CP   print DOS, Windows, or mixed pathname in Windows
                    codepage CP. CP can be a numeric codepage identifier,
                    or one of the reserved words ANSI, OEM, or UTF8.
                    If this option is missing, cygpath defaults to the
                    character set defined by the current locale.

System information:

-A, --allusers      use 'All Users' instead of current user for -D, -O, -P
-D, --desktop       output 'Desktop' directory and exit
-H, --homeroot      output 'Profiles' directory (home root) and exit
-O, --mydocs        output 'My Documents' directory and exit
-P, --smprograms    output Start Menu 'Programs' directory and exit
-S, --sysdir        output system directory and exit
-W, --windir        output 'Windows' directory and exit
-F, --folder ID     output special folder with numeric ID and exit
Try 'cygpath --help' for more information.
Setting up facts updater scheduled task ...

TaskPath              TaskName              State
-----
\                      openshift.facts        Ready
Setting up startup script to start gears ...
\                      openshift.startup      Ready
Setting up shutdown script to stop gears ...
\                      openshift.shutdown     Ready
/usr/bin/cygrunsrv: Error removing a service: OpenService: Win32 error 1060:
The specified service does not exist as an installed service.
/usr/bin/cygrunsrv: Error removing a service: OpenService: Win32 error 1060:
The specified service does not exist as an installed service.
[OK] Service 'openshift.mcollectived' was setup successfully.
[OK] Service 'openshift.sshd' was setup successfully.
Starting services ...
The openshift.mcollectived service is starting.
The openshift.mcollectived service was started successfully.
The openshift.sshd service is starting...
The openshift.sshd service was started successfully.
WARNING: Prerequisite Microsoft Visual Studio Shell 2008 - ENU is not installed.
WARNING: Please make sure that the Linux host 'broker.cloud.example.com' can properly resolve
'winnode4.cloud.example.com'.
WARNING: Please make sure that all hosts, Windows and Linux have their clocks synchronized.
Done.
Press Enter to continue...: _
```

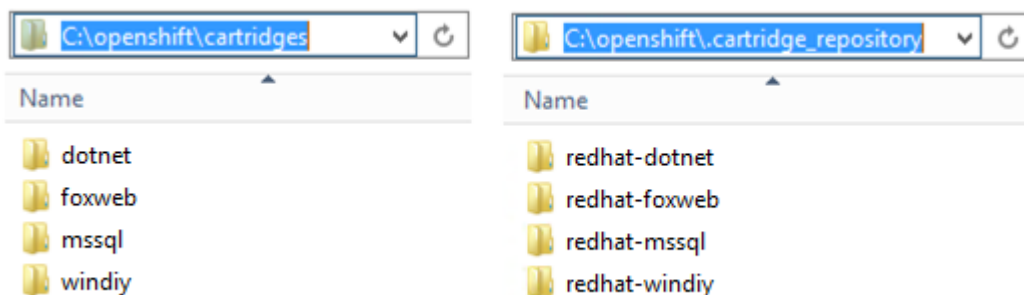
4. You will get **Done** message on powershell Prompt after successful installation of OpenShift Windows node. Click **Enter** to exit Powershell Prompt.

OpenShift 2.x Auto Script Deployment Guide V1.0

5. Now check the following directories for cartridges availability:

`c:/OpenShift/cartridges`

`c:/OpenShift/.cartridge_repository`



It will deploy dotnet, foxweb, mssql and windiy cartridges to your windows node.

On Broker (check the connectivity)

Now go to broker and check the connectivity using the below command:

`oo-mco ping`

```
[root@broker ~]# oo-mco ping
linode.openshift.example.com      time=121.10 ms
winnode                           time=270.74 ms

---- ping statistics ----
2 replies max: 270.74 min: 121.10 avg: 195.92
```

You can see the windows node is available at broker.

You have successfully configured Windows Node.

Now create district on broker, add windows node to it and then import cartridges.

3.3.2 Create District (On Broker) and add Windows Node

Important:

Districts should be created before creating any gears are made on your OpenShift cloud.

As long as a node has a gear, it cannot be added to a district. Do not add Windows and Linux nodes to the same district.

- Create a District for windows node from the following command:

`oo-admin-ctl-district -c create -o windows -n <Name Of Your District>`

```
[root@broker ~]# oo-admin-ctl-district -c create -o windows -n windist
node_profile not specified. Using default: small
Successfully created district: 5584decf32a55e927e000001

{"_id"=>"5584decf32a55e927e000001",
 "uuid"=>"5584decf32a55e927e000001",
 "available_uids"=>"<6000 uids hidden>",
 "name"=>"windist",
 "platform"=>"windows",
 "gear_size"=>"small",
 "available_capacity"=>6000,
 "max_uid"=>6999,
 "max_capacity"=>6000,
 "active_servers_size"=>0,
 "updated_at"=>2015-06-20 03:32:31 UTC,
 "created_at"=>2015-06-20 03:32:31 UTC}
```

- Now add a node to your district

`oo-admin-ctl-district -c add-node -n <Name Of Your District> -i <Hostname Of Your Node>`

```
[root@broker ~]# oo-admin-ctl-district -c add-node -n windist -i winnode

{"_id"=>"5584decf32a55e927e000001",
 "active_servers_size"=>1,
 "available_capacity"=>5999,
 "available_uids"=>"<5999 uids hidden>",
 "created_at"=>2015-06-20 03:32:31 UTC,
 "gear_size"=>"small",
 "max_capacity"=>6000,
 "max_uid"=>6999,
 "name"=>"windist",
 "platform"=>"windows",
 "servers"=>
  [{"_id"=>"55831ae132a55e17b4000001",
   "active"=>true,
   "name"=>"winnode",
   "unresponsive"=>false}],
 "updated_at"=>2015-06-20 03:32:31 UTC,
 "uuid"=>"5584decf32a55e927e000001",}
```

OpenShift 2.x Auto Script Deployment Guide V1.0

3.3.3 Importing .NET Cartridges (On Broker)

Important:

Run the following commands to import cartridges. ** It will cleanup all currently configured cartridges and import them all again**

```
oo-admin-broker-cache --console --clear  
for i in `oo-admin-ctl-cartridge -c list | awk '{print $2}'`;do echo "$i";done | oo-admin-ctl-cartridge -c deactivate  
oo-admin-ctl-cartridge -c clean  
oo-admin-broker-cache --console --clear  
oo-admin-ctl-cartridge -c import-node --activate --force
```

You will see the DotNet and other windows cartridges added successfully to your broker:

```
5584e53832a55e1d92000002 # A dotnet-4.5 (active)  
5584e53932a55e1d92000003 # A foxweb-4.6.3 (active)  
5584e53932a55e1d92000006 # A mssql-2014 (active)  
5584e53932a55e1d92000007 # A windiy-1.0 (active)
```

Now you are ready to create you first application using .NET cartridge.

3.3.4 Creating Windows Application

I. Create .NET Application from rhc tool

From a client machine, use **rhc** tool to connect to your OpenShift cloud.

Click [here](#) to download rhc command line tool to your system.

Before creating your app, add the app's hostname to your local hosts file, pointing to the Linux machine, so the git client and your browser know how to resolve that hostname.

OpenShift 2.x Auto Script Deployment Guide V1.0

All OpenShift applications that contain a Windows cartridge must be configured as scalable. When you use `rhc` to create a Windows application, make sure to specify the `-s` flag.

Example:

```
rhc create-app myapp dotnet -s
```

Add a MS SQL Server 2014 cartridge

```
rhc add-cartridge mssql-2014 -a myapp
```

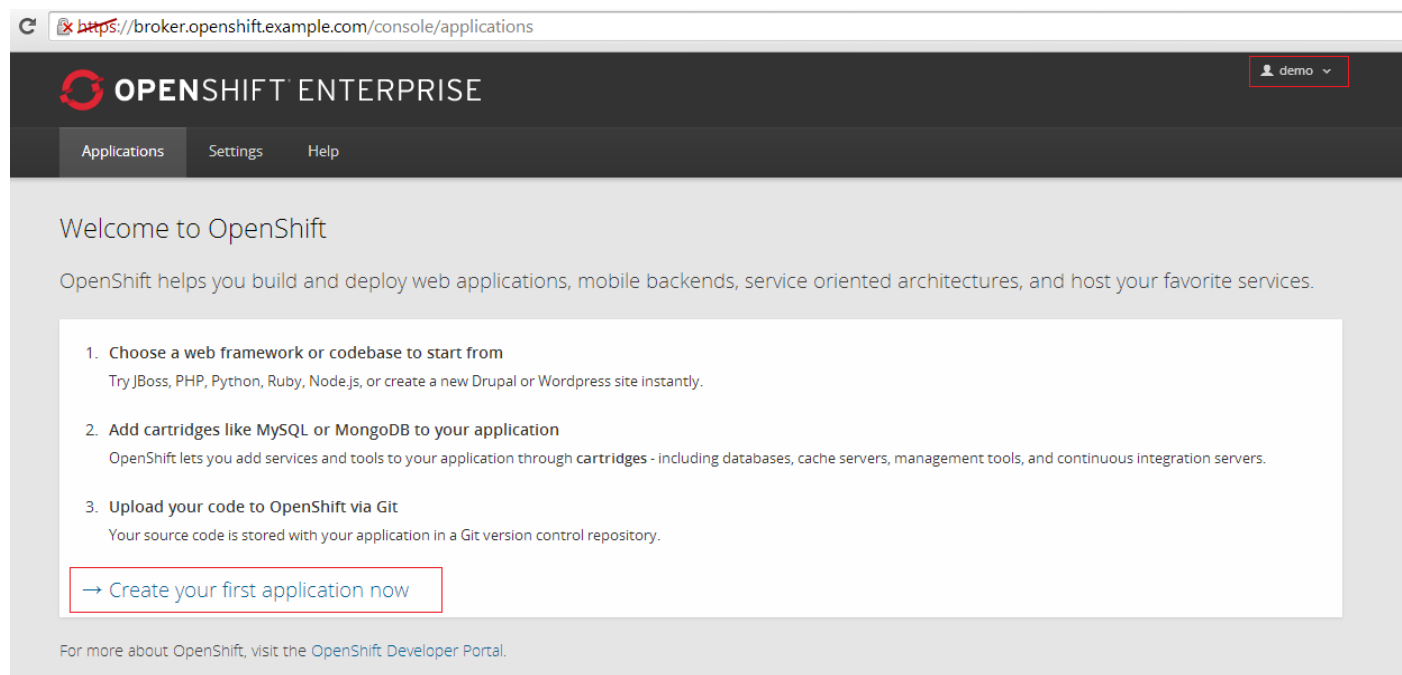
You can get message and have successfully created app from `rhc` tool using windows DotNet and mssql 2014 cartridges.

II. Create .NET Application from OpenShift Console

Open browser and enter the broker FQDN or IP address to login to broker console:

<https://broker.openshift.example.com/>

Once you login you will see the openshift console to create applications, Click on Create your first application now:



OpenShift 2.x Auto Script Deployment Guide V1.0



Now select the .NET cartridge to create application:

OpenShift 2.x Auto Script Deployment Guide V1.0

Provide meaningful name to your application and click to Create Application:

1 Choose a type of application

2 Configure the application

3 Next steps

Based On

DotNet 4.5 Cartridge

Microsoft DotNet 4.5 Cartridge.
<http://www.rgensolutions.com/>
☆ OpenShift maintained
🔒 Receives automatic security updates

Public URL

http://

dotnet

-

demo

.apps.example.com

Because this is your first application, you need to provide a domain under which your applications will be grouped

OpenShift will automatically register this domain name for your application. You can add your own domain name later.

Source Code

Optional URL to a Git repository

Branch/tag

We'll create a Git code repository in the cloud, and populate it with a set of reasonable defaults. If you provide a Git URL, your application will start with an exact copy of the code and configuration provided in this Git repository.

Gears

small

Gears are the application containers running your code.

Cartridges

DotNet 4.5

Applications are composed of cartridges - each of which exposes a service or capability to your code. All applications must have a web cartridge.

Scaling

Scale with web traffic

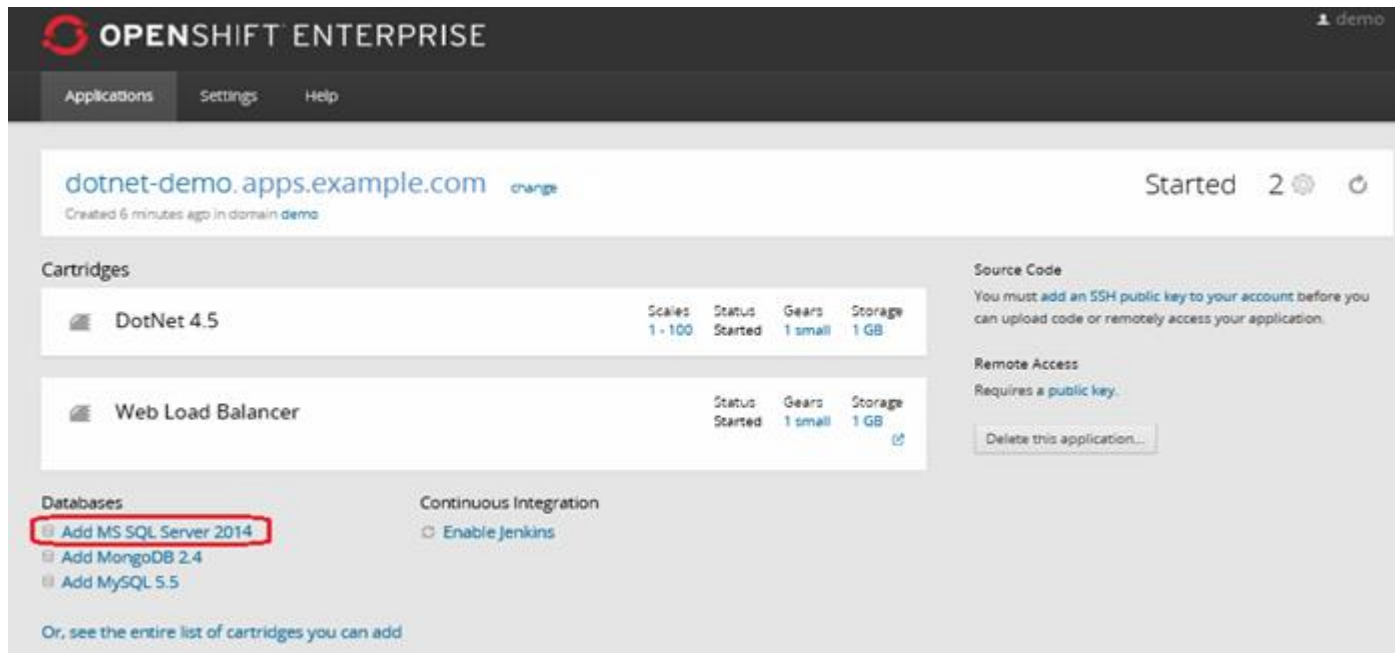
OpenShift automatically routes web requests to your web gear. If you allow your application to scale, we'll set up a load balancer and allocate more gears to handle traffic as you need it.

Back

Create Application


+1

It will create .NET application in couple of mins and you can see the application is created and its running gear. Also you can click on **Add MSSQL Server 2014** cartridge to embed it with your .NET application:



OPENSHT ENTERPRISE demo

Applications Settings Help

dotnet-demo.apps.example.com [change](#) Started 2 

Created 6 minutes ago in domain demo

Cartridges

| Cartridge | Scales | Status | Gears | Storage |
|-------------------|---------|---------|---------|---------|
| DotNet 4.5 | 1 - 100 | Started | 1 small | 1 GB |
| Web Load Balancer | | Started | 1 small | 1 GB |

Databases

- Add MS SQL Server 2014**
- Add MongoDB 2.4
- Add MySQL 5.5

Continuous Integration

- ☐ Enable Jenkins

Source Code

You must add an SSH public key to your account before you can upload code or remotely access your application.

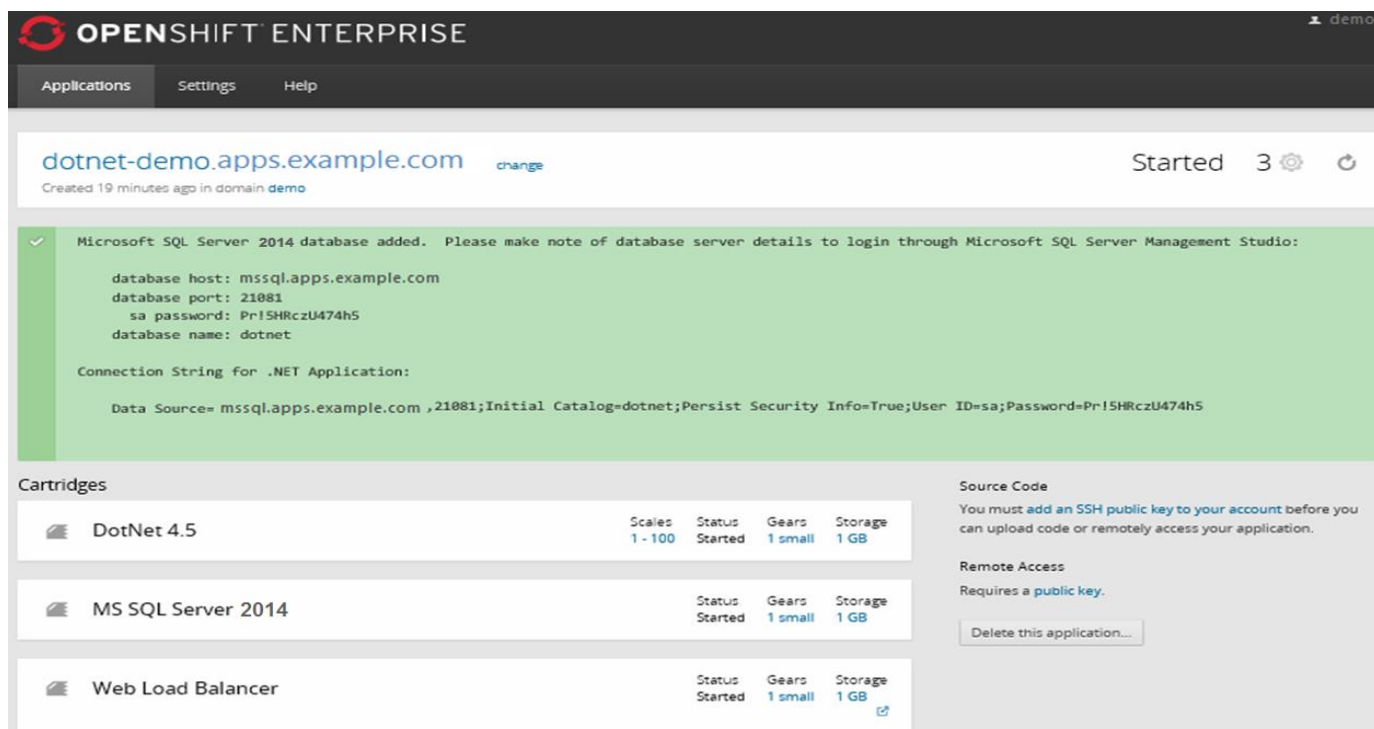
Remote Access

Requires a public key.

[Delete this application...](#)


Or, see the entire list of cartridges you can add

Your SQL cartridge will be added successfully and it will show the DB information



OPENSHT ENTERPRISE demo

Applications Settings Help

dotnet-demo.apps.example.com [change](#) Started 3 

Created 19 minutes ago in domain demo

✓ Microsoft SQL Server 2014 database added. Please make note of database server details to login through Microsoft SQL Server Management Studio:

```
database host: mssql.apps.example.com
database port: 21081
sa password: Pr!5HRczU474h5
database name: dotnet
```

Connection String for .NET Application:

```
Data Source= mssql.apps.example.com ,21081;Initial Catalog=dotnet;Persist Security Info=True;User ID=sa;Password=Pr!5HRczU474h5
```

Cartridges

| Cartridge | Scales | Status | Gears | Storage |
|--------------------|---------|---------|---------|---------|
| DotNet 4.5 | 1 - 100 | Started | 1 small | 1 GB |
| MS SQL Server 2014 | | Started | 1 small | 1 GB |
| Web Load Balancer | | Started | 1 small | 1 GB |

Source Code

You must add an SSH public key to your account before you can upload code or remotely access your application.

Remote Access

Requires a public key.

[Delete this application...](#)

So we have successfully configured broker, configured linux node and configured windows node, also created the application using windows cartridges.

4. TESTS

4.1 Checklist to verify deployment on Windows Node

Below are the line-items that you can manually verify to test the deployment.

- ✓ Verify that the core OpenShift.Net service exists, started and running at the time of startup.
- ✓ Verify that the scheduled tasks required for OpenShift.Net functionality exist,
- ✓ Verify that Broker, hostname and winnode resolved
- ✓ Verify TCP connection with ActiveMQ Service
- ✓ Check that both MS SQL Server 2008 and MS SQL Server 2012 are installed, their services are stopped and the startup mode is set to be disabled
- ✓ Check that the firewall is enabled, that the SSHD port is opened and that all the existing prisons have a corresponding rule.
- ✓ Check the prison users exist as local user account.
- ✓ Check that local user accounts with the prison prefix have corresponding prison entries.
- ✓ Check that the users found in cygwin/etc/passwd exist on the local system and also in the prison db