PHOENIX Admin GUIDE

### OvervieW

This guide will assist you in deploying and using Project Phoenix (WAP RP that enables public Azure IaaS management and provisioning). These steps assume WAP has already been installed and configured.

# Pre-requisites

The following pre-requisites exist for **installation** of the pre-release version Project Phoenix:

* This version has been tested with WAP UR8. This make work with other WAP versions, but has not been tested.
* Distributed installation is not currently supported via the installer. Support for this will be coming in a future release.
* You must install the following components of the [SQL 2014 Feature Pack](https://www.microsoft.com/en-us/download/details.aspx?id=42295) on the box where the Project Phoenix installation is performed:
  + Shared Management Objects (SMO)
  + Transact-SQL ScriptDom (SQLDOM)
  + System CLR Types (SQLSysClrTypes)
* The solution requires access to a certificate and private key for encryption
* This version only supports ARM subscriptions. Support for ASM subscriptions will be coming in a future release.

The following pre-requisites exist for **compiling** the pre-release version of Project Phoenix:

* Visual Studio 2013 or later
* [Microsoft .NET 4.5.2 Framework](https://www.microsoft.com/en-us/download/details.aspx?id=42642)
* [Web Platform Installer 5 or later](https://www.microsoft.com/web/downloads/platform.aspx)
* [Azure SDK 2.5](https://www.microsoft.com/en-us/download/details.aspx?id=44938)
* [Wix Toolset](http://wixtoolset.org/releases/)

### Installation

Follow these steps to install the pre-release version of Project Phoenix:

1. Install certificate
2. Install SQL 2014 Feature Pack
3. Run SetupCMP.exe
4. Grant SQL access to Microsoft.MgmtSvc.Store database
5. Adjust web.config connection strings
6. Add SSL certificate to IIS binding
7. Register the resource provider in WAP

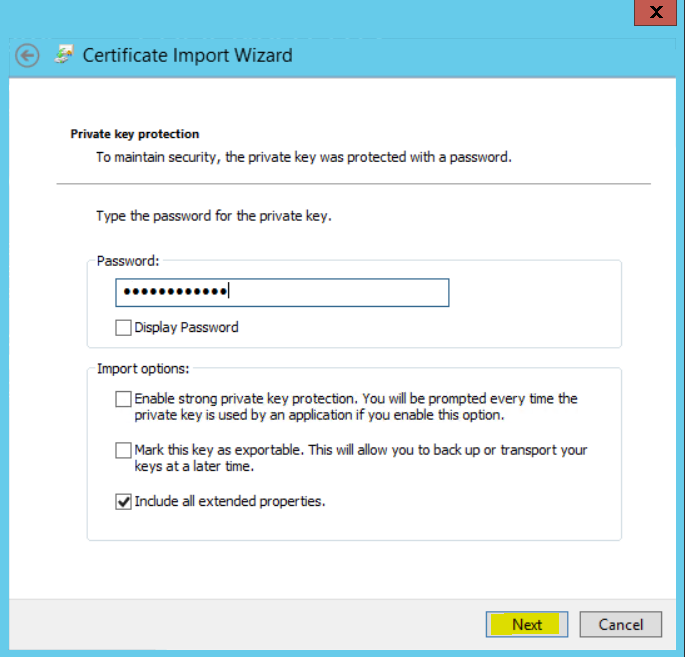
# Install Certificate

Generate a self-signed certificate in IIS Manager, or request a certificate from a trusted cert authority.

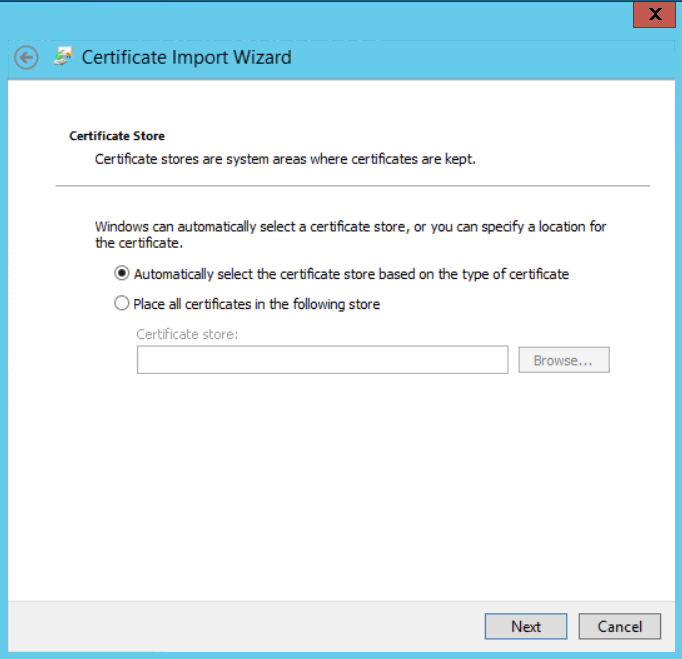
1. Install both as current user and local machine. Go through the steps to install as Current User first, then follow the same steps to install as Local Machine. You can use the default location when prompted.



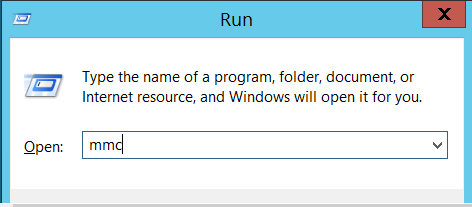
1. Click Next, then put the password. You can obtain the password from your local admin.



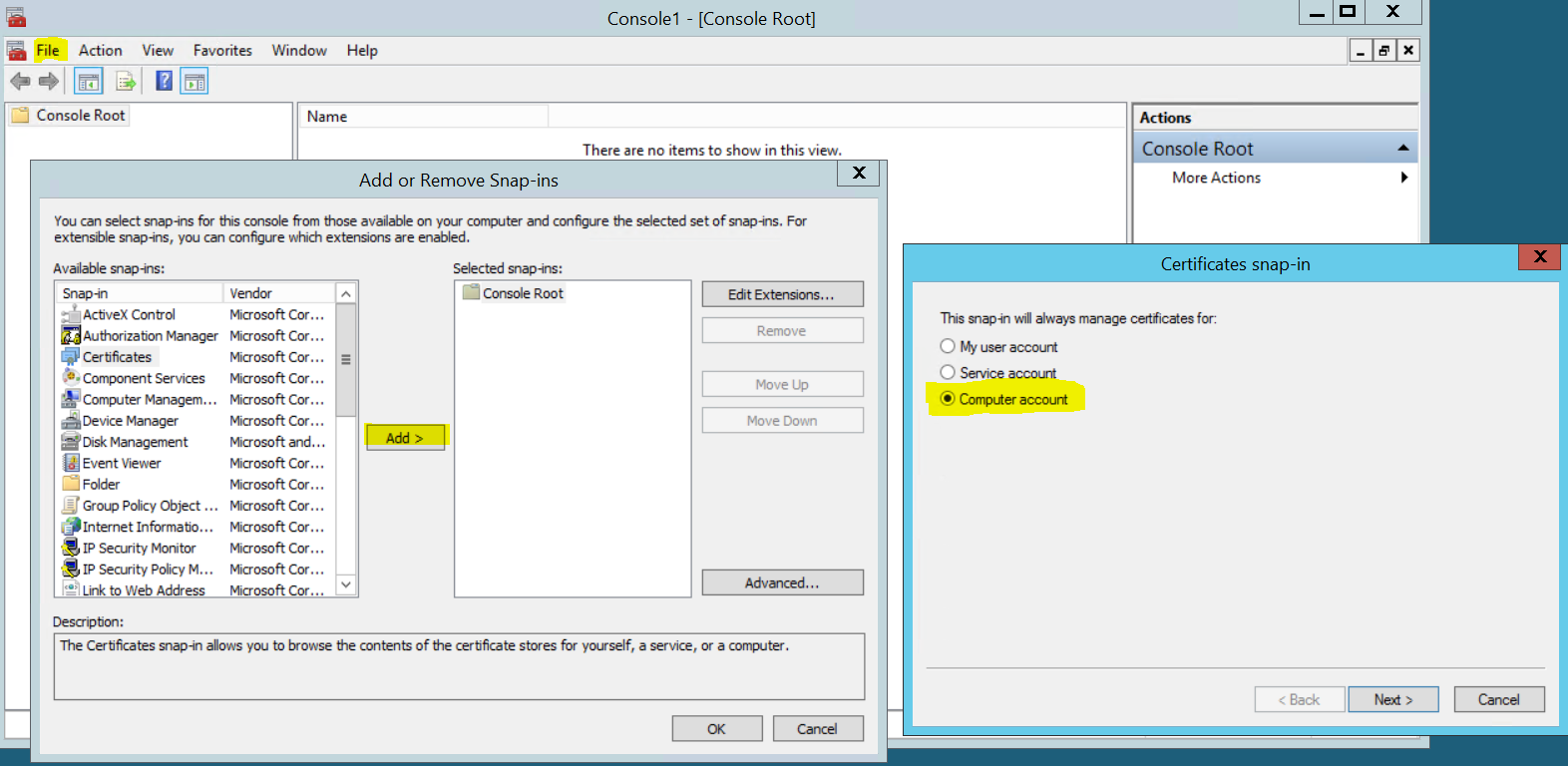
1. Automatically select the certificate store.



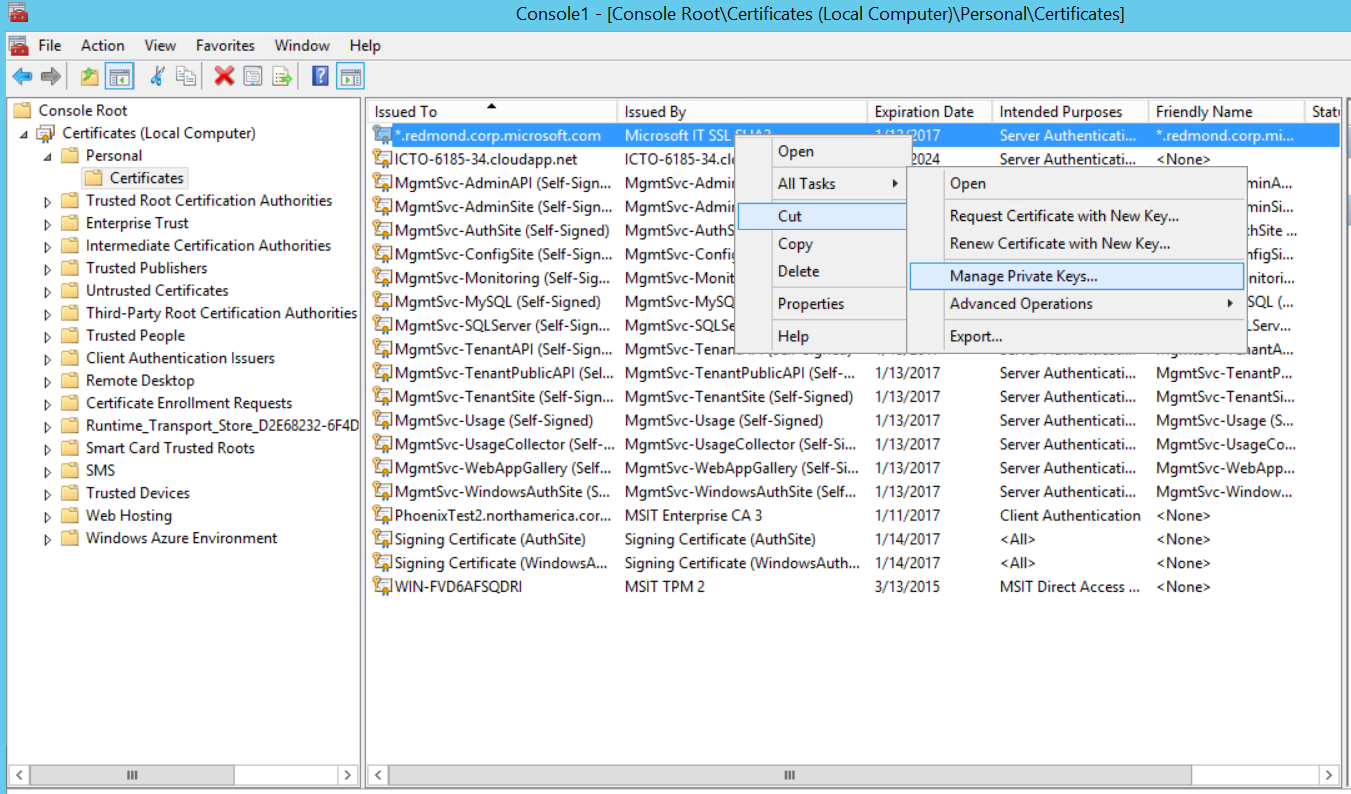
1. Finish and do the same for Local User.
2. Open mmc from the ‘Run’ window.



1. When the window opens, click on File -> Add/Remove Snap in. Select Certificates, Add, and then the Computer account.



1. Click Next, Finish, then Okay to open the certificates window. Look for the certificate you just installed under the Personal folder. Then right click the certificate, All Tasks, Manage Private Keys.



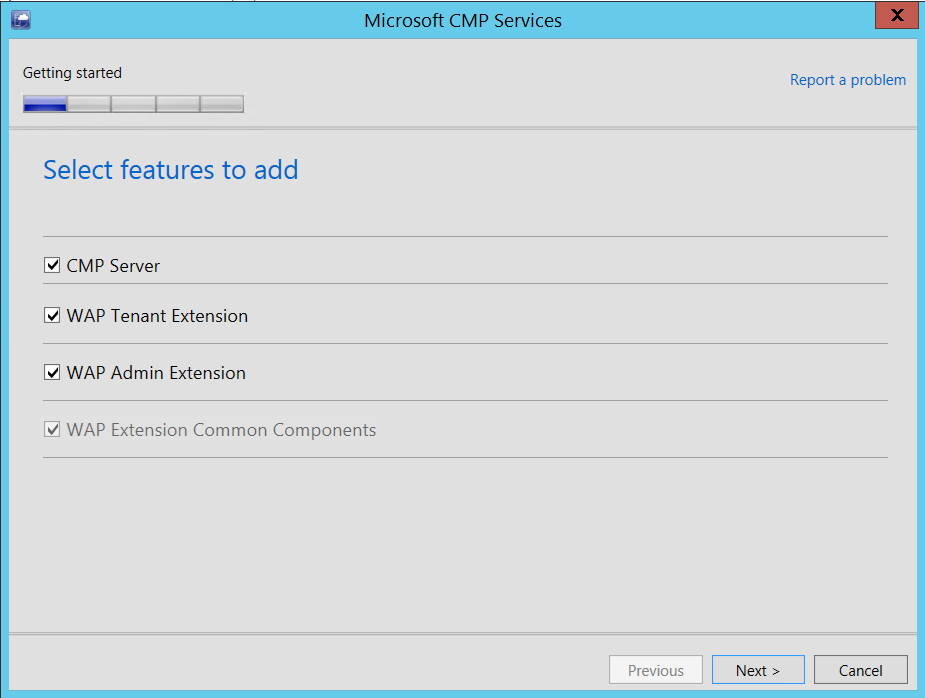
1. Add everyone and give full control. Click OK and exit out of that. You can close the mmc window now.

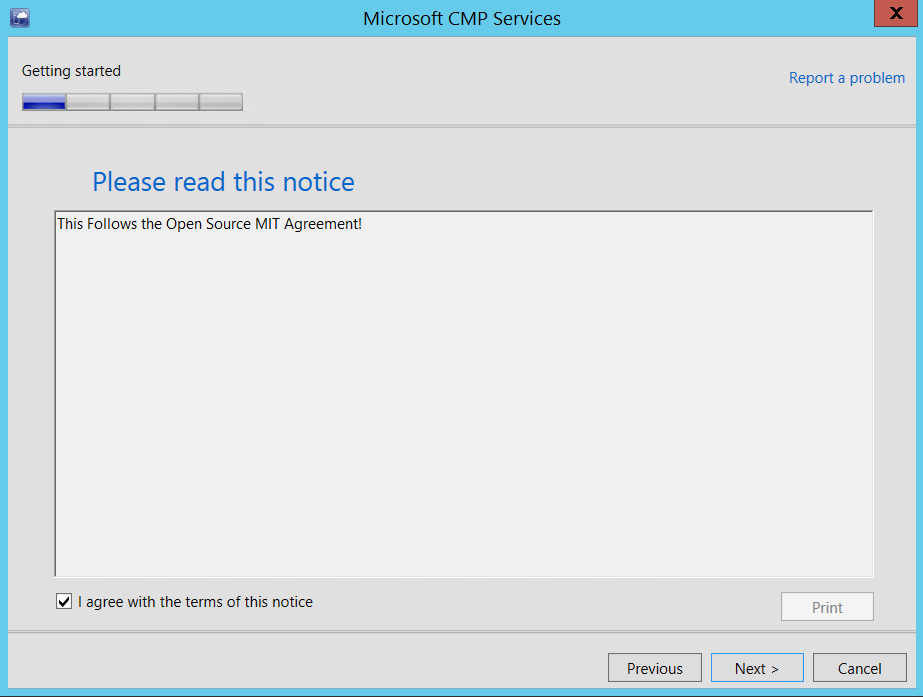
# Install FEATURE PACK 2014

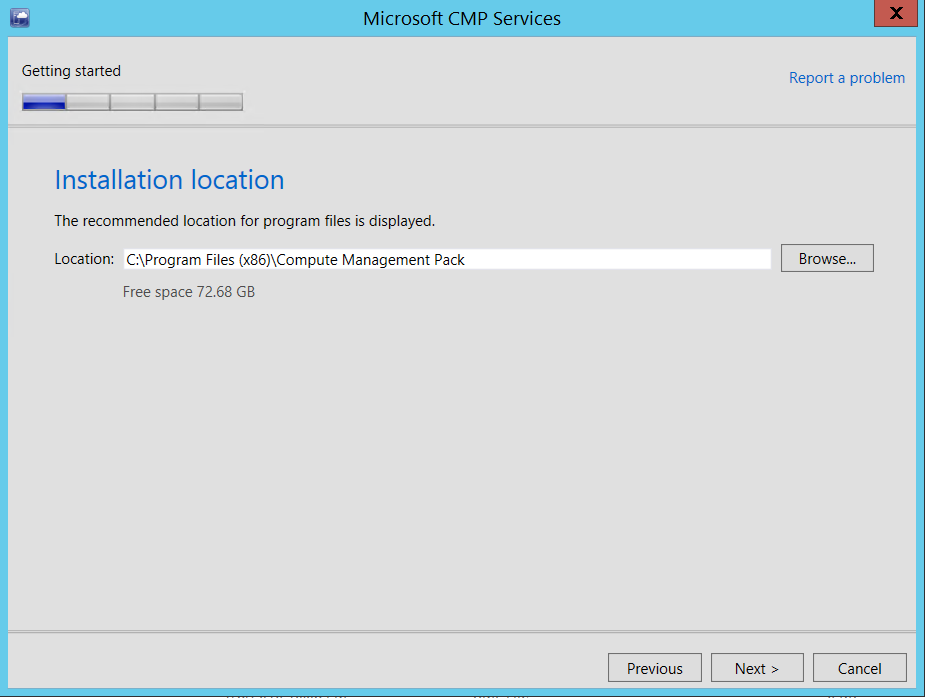
1. Download and install the following components of the [SQL 2014 Feature Pack](https://www.microsoft.com/en-us/download/details.aspx?id=42295) on the box where the Project Phoenix installation will be performed:
   1. Shared Management Objects (SMO)
   2. Transact-SQL ScriptDom (SQLDOM)
   3. System CLR Types (SQLSysClrTypes)

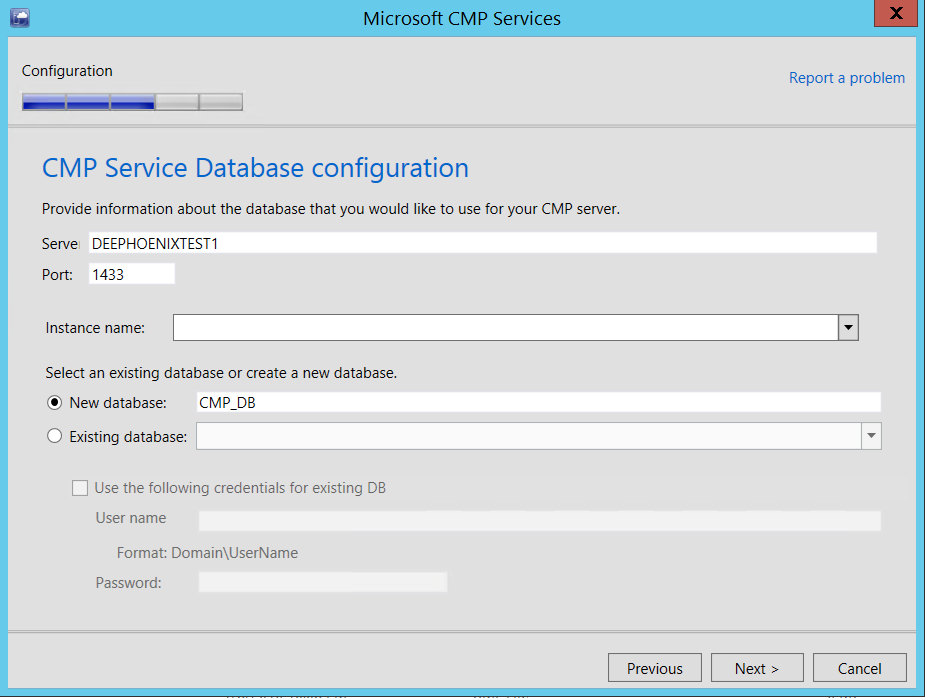
# RUN CMPSETUP.EXE

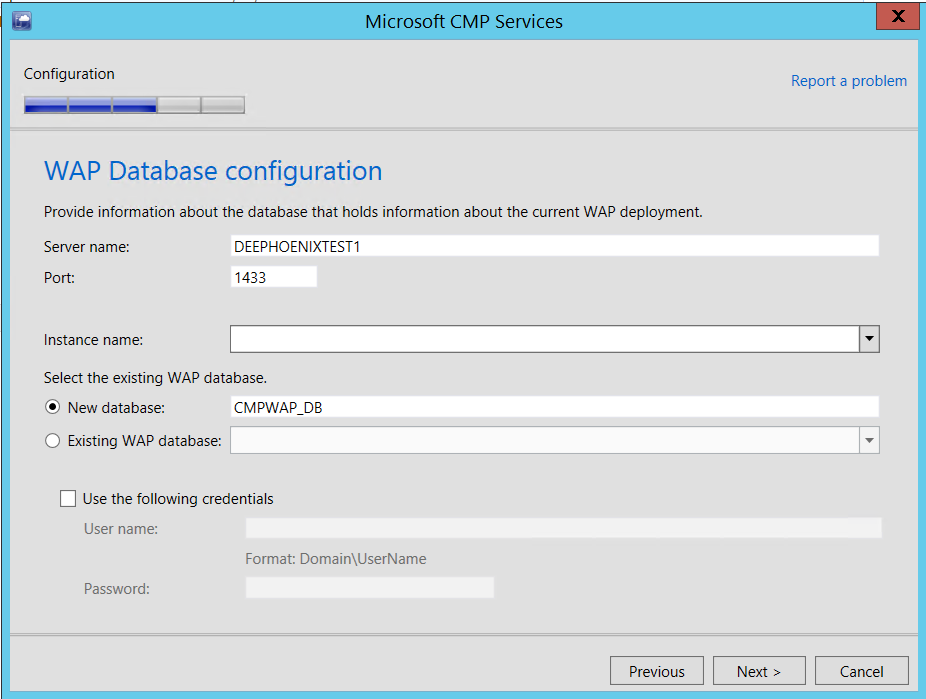
1. Extract Phoenix-v0.1.zip
2. Open the Release Folder
3. Execute SetupCMP.exe Application
4. Click on SetupCMP.exe. Run as administrator. Follow the default steps as shown below.



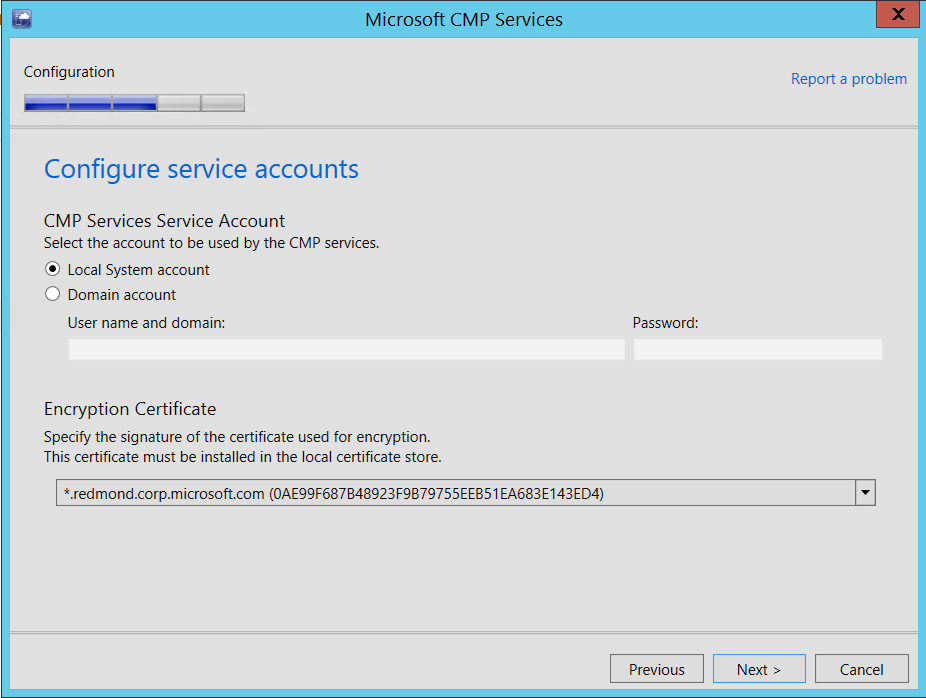


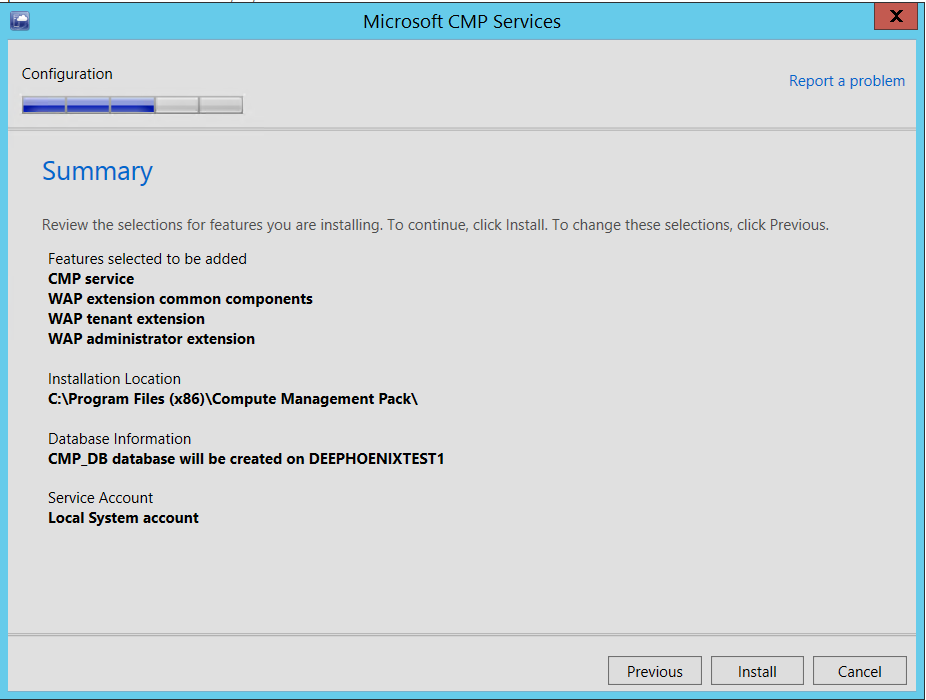


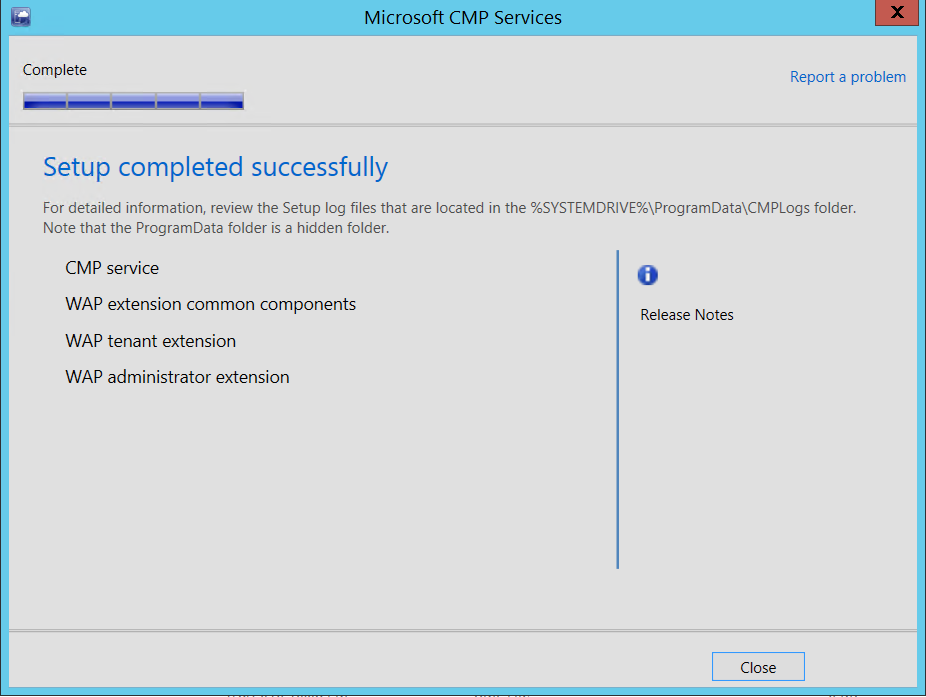




Select the new installed cert as shown below.







# Grant SQL ACCESS

Project Phoenix requires access to the Microsoft.MgmtSvc.Store WAP database. You must create the user and grant permission manually in this release:

1. Open SQL Server Management Studio
2. Open a new query window
3. Execute the following script (adjust password as necessary)

USE [master]

GO

CREATE LOGIN [MgmtSvc-CmpWapExtension] WITH PASSWORD=N'pass@word1', DEFAULT\_DATABASE=[master], CHECK\_EXPIRATION=OFF, CHECK\_POLICY=OFF

GO

USE [Microsoft.MgmtSvc.Store]

GO

CREATE USER [MgmtSvc-CmpWapExtension] FOR LOGIN [MgmtSvc-CmpWapExtension]

ALTER USER [MgmtSvc-CmpWapExtension] WITH DEFAULT\_SCHEMA=[dbo]

ALTER ROLE [db\_owner] ADD MEMBER [MgmtSvc-CmpWapExtension]

GO

# Update connection strings

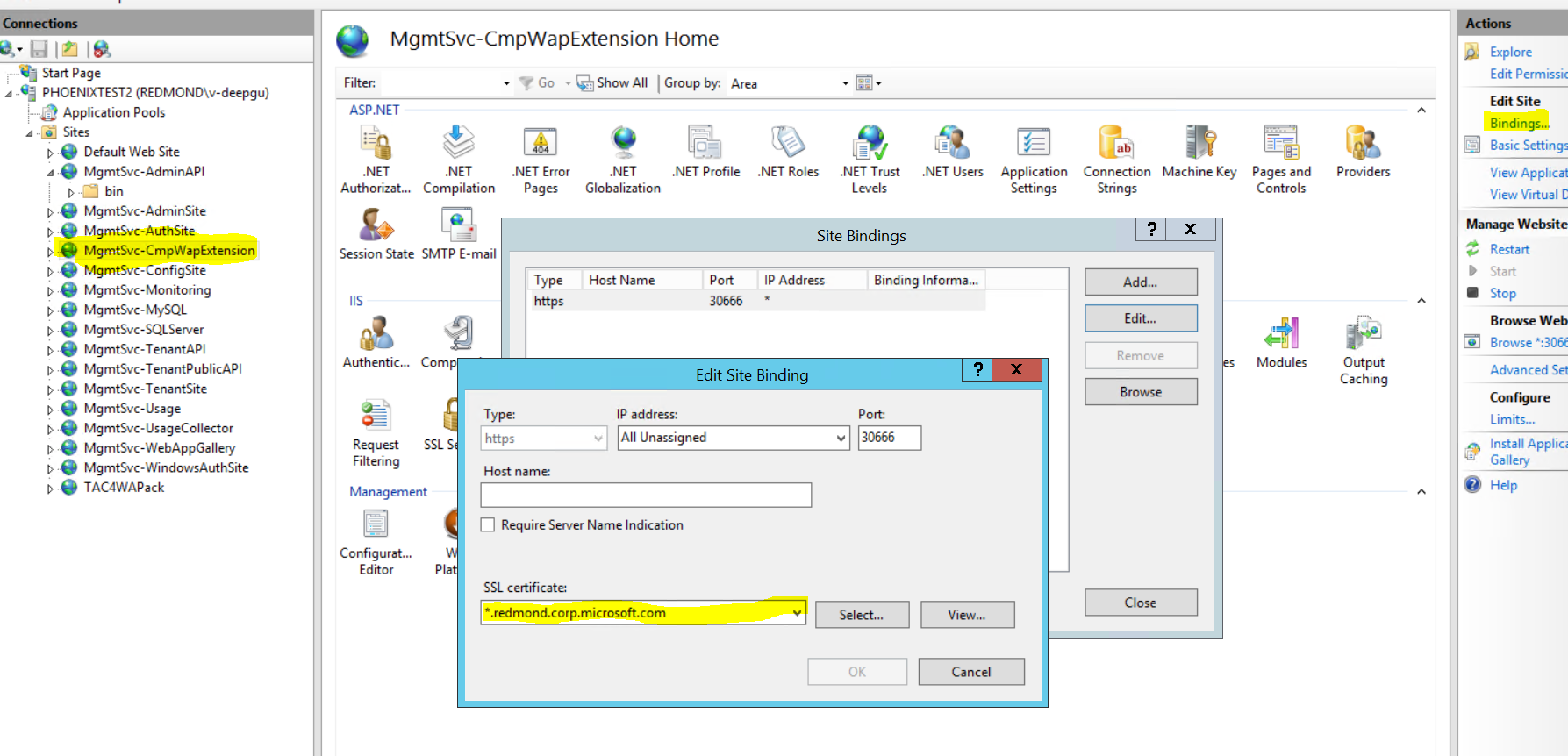
The connection strings located in the web.config of the C:\inetpub\MgmtSvc-CmpWapExtension folder need to be updated manually:

1. Open c:\inetpub\MgmtSvc-CmpWapExtension\web.config in notepad as administrator.
2. Find the <connectionStrings> section.
3. Add “;MultipleActiveResultSets=True” to **each** connection string.
4. Update the MicrosoftMgmtSvcStorageContext connection string to use sql authentication and the sql login created previously:  
    <add name="MicrosoftMgmtSvcStoreContext" connectionString="Data Source= phoenixtest2.northamerica.corp.microsoft.com;Initial Catalog=Microsoft.MgmtSvc.Store;Persist Security Info=True;User ID=MgmtSvc-CmpWapExtension;Password=pass@word1;MultipleActiveResultSets=True" providerName="System.Data.SqlClient" />
5. From an admin command prompt, run iisreset for changes to take effect.

# Add SSL Binding

Update the IIS bindings to use the previously created certificate.

1. Go to IIS manager (inetmgr form Run), Select the Site “MgmtSvc-CmpWapExtension”, click Bindings, and for the https binding already created, associate the previously created cert. Click OK.



1. Restart IIS by running iisreset from an admin command prompt.

# Register Resource Provider

Register the CMP WAP Extension using the provided powershell script.

1. Download the supplied Register-ResourceProvider.ps1 file.
2. Open a powershell windows as administrator on the admin API server.
3. Execute the Register-ResourceProvider.ps1 powershell script.

# Summary

The product is now installed. You should be able to navigate to the admin portal and tenant portal from here. Replace the highlighted with the appropriate name of the machine.

Admin portal:

<https://phoenixtest2.northamerica.corp.microsoft.com:30091>

Tenant portal:

<https://phoenixtest2.northamerica.corp.microsoft.com:30081>

### USAGE

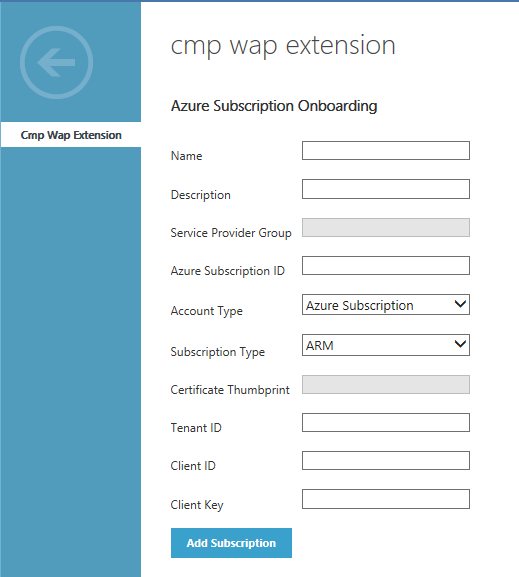
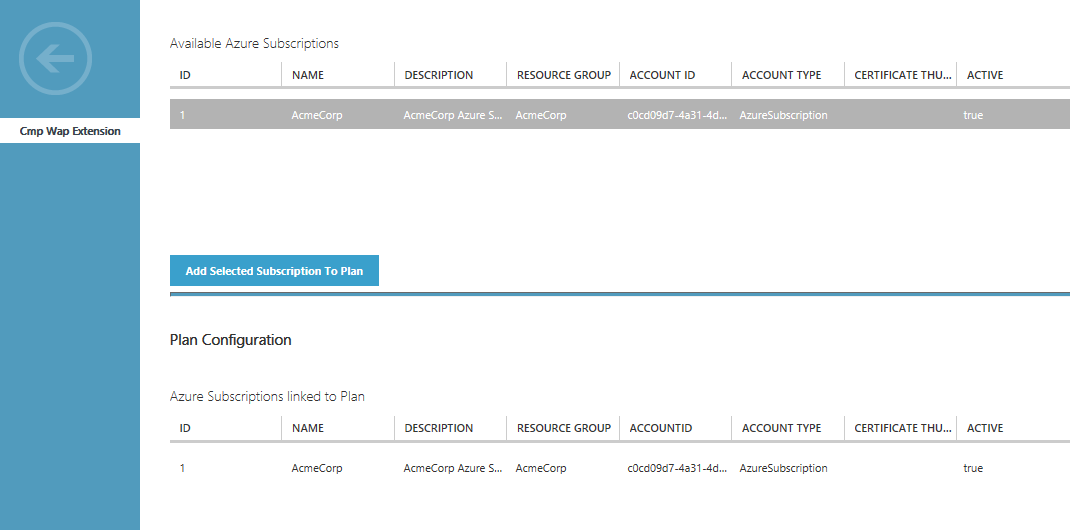
In order to enable public Azure IaaS consumption through project phoenix, you must assign an Azure subscription to a WAP plan and then subscribe a user to the plan. The model of consumption is a 1-to-1 mapping of WAP plans to Azure subscriptions, though that is not enforced technically.

# Prepare Azure Subscription

In order to use an Azure subscription with Project Phoenix, you must create an Azure Active Directory application, and then grant that application contributors rights to the Azure subscription. You can use the Create-AADSPN.ps1 powershell script to facilitate this. You’ll need CSP provider credentials, the tenant’s AAD ID and a subscription ID to run the script. For detailed instructions, see the supplemental CSPSubGuide.docx document.

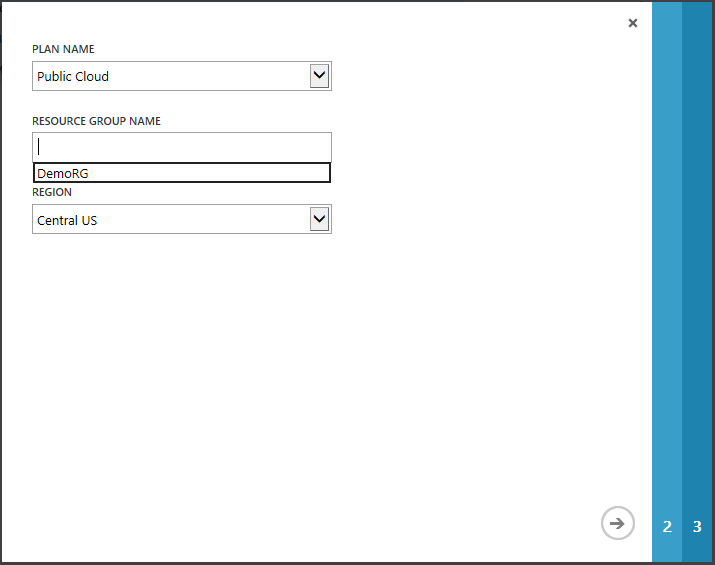
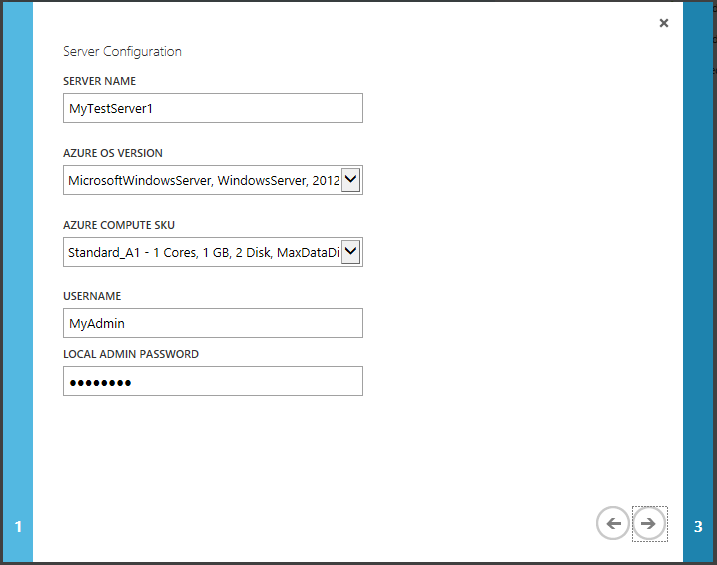
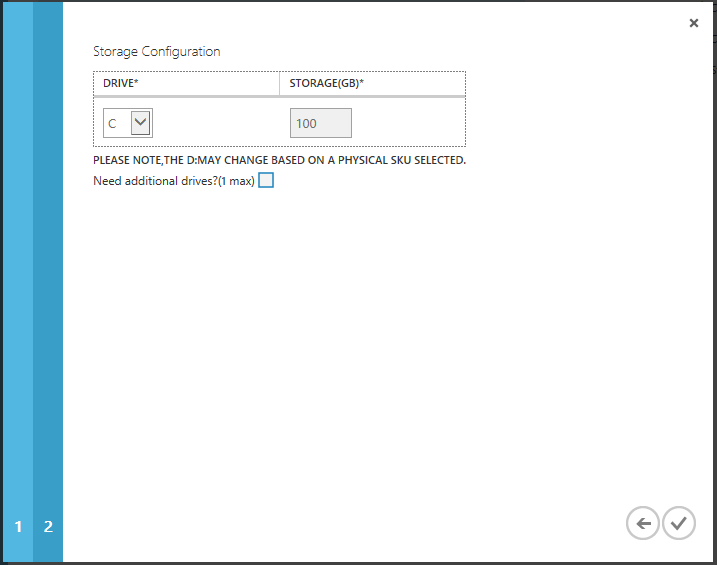
# Onboard a subscription

In order to onboard a subscription, you will first need to create a WAP plan.

1. From the admin portal, create a new WAP plan.
2. Select CMP WAP Extension as a plan service.
3. Click OK to create the plan.
4. Select the newly created Plan from the list to edit its properties.
5. Under Plan Services, click CMP WAP Extension to configure Azure subscriptions.
6. Add an Azure subscription to the database by populating the appropriate information  
     
   Name: A friendly name for the subscription  
   Description: A friendly description for the subscription  
   Subscription ID: This is the Azure subscription ID (GUID) which can be obtained from the CSP portal.  
   Account Type: This should always be “Azure Subscription”  
   Subscription Type: This should always be “ARM”  
   Tenant ID: This is the Azure Active Directory ID (GUID) of the tenant which can be obtained from the CSP portal.  
   Client ID: This is the Azure Application ID (GUID) which is output by the Create-AADSPN.ps1 script.  
   Client Key: This is the password or key for the Azure Application which is output by the Create-AADSPN.ps1 script.
7. Click Add Subscription to insert the subscription into the database.
8. Next, an Azure subscription should be assigned to the plan. Select the subscription from the Available Azure Subscriptions table and click Add Selected Subscription to Plan.  
   
9. Finally, select the appropriate OS versions and VM sizes that you would like to be available to the tenant. Then click Save.

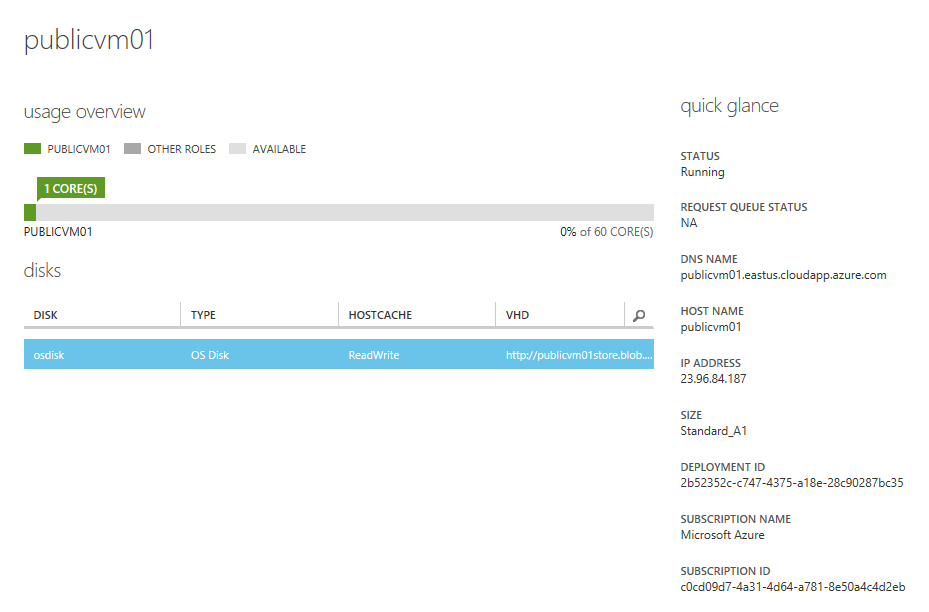
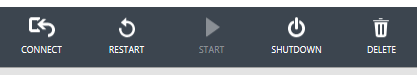
# Provision a VM

In order to provision a VM, a user must have a subscription to a WAP plan that is connected to an Azure subscription.

1. Login to the tenant portal.
2. Click NEW > Azure VMS > CREATE AZURE VM
3. If the user is subscribed to multiple Azure plans that provide CMP services, select the appropriate plan.
4. Either select and existing resource group name from the dropdown, or enter a name for a new resource group to be created:  
   
5. If you selected an existing resource group, the region will be automatically selected. If this is a new resource group, select the appropriate region.
6. Enter a server name (max 15 characters, only letters and numbers), select an appropriate OS, VM Size, enter a username (“admin” and “administrator” are reserved), and a password that meets complexity requirements:  
   
7. Add additional disks if necessary and click OK:  
   
8. The VM will be submitted for deployment. You can check the status of the deployment in the public Azure portal. Status will be periodically updated in WAP as well.

# Managing a VM

Once a VM has been provisioned through Phoenix, you can manage it through the WAP tenant portal.

1. Login to the tenant portal
2. Click AZURE VMS and select the VM from the list.
3. Use the service buttons at the bottom of the screen to manage the VM. Certain actions may be enabled/disabled depending upon the status of the VM.  
     
   

### Compile Solution

This section details how to compile the solution. The solution comprises of 38 projects. Ensure the pre-requisites have been installed in the development environment.

# Install Pre-requisites

Download and install the following pre-requsites

* [Microsoft .NET 4.5.2 Framework](https://www.microsoft.com/en-us/download/details.aspx?id=42642)
* [Web Platform Installer 5 or later](https://www.microsoft.com/web/downloads/platform.aspx)
* [Azure SDK 2.5](https://www.microsoft.com/en-us/download/details.aspx?id=44938)
* [Wix Toolset](http://wixtoolset.org/releases/)

# Create a github account

1. Go to <https://github.com/> and create personal account.
2. Request access to Project Phoenix repository (email: [jeff.graves@microsoft.com](mailto:jeff.graves@microsoft.com)).

# CLONE THE REPOSITORY

1. Use Git to clone the repository:

$ git clone <https://github.com/Microsoft/Phoenix.git> Phoenix

# Copy Files

Two DLL’s are needed from the C:\inetpub\MgmtSvc-AdminSite\bin folder of your WAP installation:

* Microsoft.Azure.Portal.Configuration.dll
* Microsoft.WindowsAzure.Management.Common.HttpClient.dll

1. Copy the DLL’s to the C:\Phoenix\CMP\CmpWap\CmpWapExtension\References folder.

# Open the solution and enable nuget

1. From the file system, open the CMP solution. It will be located under C:\Phoenix\CMP.sln.
2. Right click on the solution and enable NuGet packages.

### Known Issues

1. Installation may fail when using SQL Cluster backend.  
   **ISSUE:**  
   The installer may not be able to create database files on a backend SQL cluster.  
     
   **WORKAROUND:**  
   Manually create the databases using the supplied DACPAC files. Additionally, you will need to create a SQL user and grant DBO permissions on necessary databases to be used in the connection strings in C:\inetpub\MgmtSvc-CmpWapExtension\web.config and C:\Program Files (x86)\Compute Management Pack\MSIT\CmpWorkerService\CmpWorkerService.exe.config
2. ASP.NET Error in Application Log, 400 status code in WAP portal.  
   **ISSUE:**  
   In certain cases, a DLL conflict may cause an incorrect version of System.Net.Http.Formatting.dll to be compiled into the installer resulting in a YSOD and error message in the Application log.  
     
   **WORKAROUND:**  
   Copy the appropriate version of System.Net.Http.Formatting.dll from the C:\Phoenix\Packages\Microsoft.AspNet.WebApi.Client.5.2.3\lib\net45 folder into the C:\inetpub\MgmtSvc-CmpWapExtension\bin folder of your Project Phoenix installation and recycle the application pool.
3. Shutting down a VM may cause the IP address to change.   
   **ISSUE:**   
   The CMP Service stores the initial IP at deployment time only. After a subsequent boot of the VM, the IP address may change. Attempting an RDP connection to the VM from the tenant portal may result in an RDP file using the IP granted at deployment time, instead of the new IP address, causing the connection to fail.  
     
   **WORKAROUND:**   
   Update the IP address of the VM in the AddressFromVM column of the CMPWAP\_DB.dbo.CmpRequests table.