DB as a Service

VMware vCloud Automation Center

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1. Introduction

VMware vCloud Automation Center is an innovative self-service provisioning and lifecycle management solution that simplifies and automate deployments of infrastructure, multi-tier applications, desktop... and now any kind of IT service! It provides a secure portal where authorized administrators, developers or business users can request new IT services as well as manage specific cloud and IT resources based on their roles and privileges.

This solution provides automated installation and configuration for SQL Server 2012 service as a DB service. The solution utilizes industry's leading Cloud-enabled self-service provisioning solution, VMware vCloud Automation Center.

DB as a Service provisions database resources automatically based on available system resources, allowing application developers, architects, testers, and other consumers of databases to store and retrieve data without having to deal with lower-level database administration functionality. DBaaS helps make DBAs more productive by repurposing existing hardware resources, automating administration tasks, and facilitating a common policy framework across databases.

2. System Pre-requisites

1. Install and configure VMware vFabric Application Director 6.0 with vCloud Automation Center (vCAC) 6.0. Refer the the product documentation for information about installing and configuring Application Director.
2. **SQL Server 2012** to be available as an application in the Application Director Applications.

3. Set up

Follow the below steps to publish SQL server as a DBaas In vCAC 6.0:

3.1 Publishing an App from Application director to the Service Catalog of vCAC.

1. Login to the Application Director v6.0 instance of the setup created.
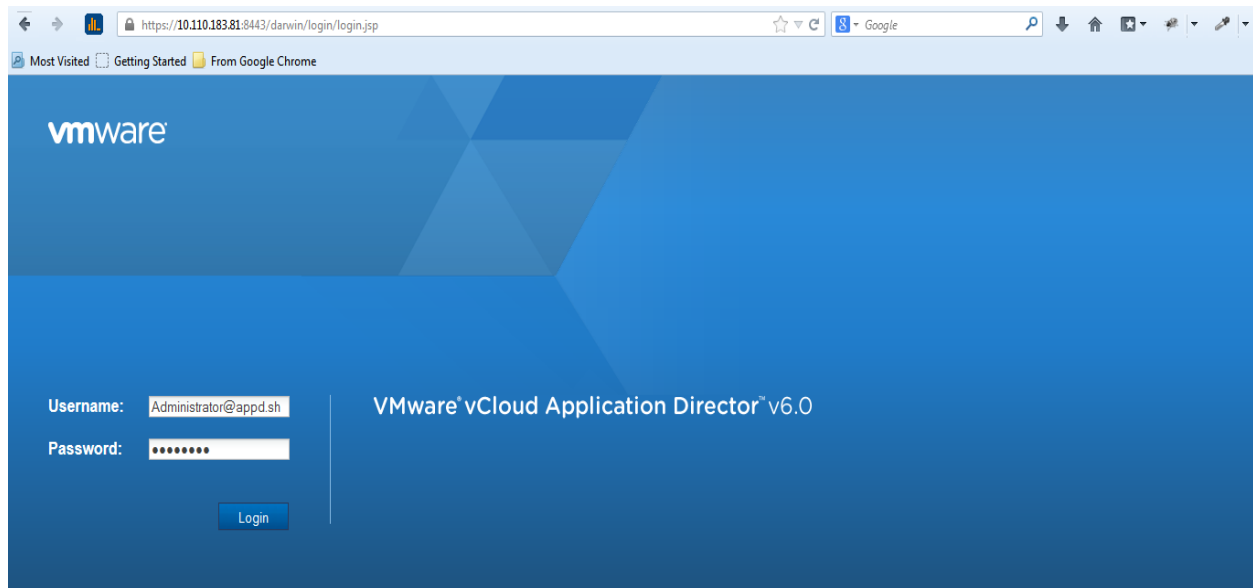
2. Now navigate to **Applications** from the main menu and select **SQL Server** App and then select view blueprint. This will navigate to the blueprint canvas and click **view blueprint** as shown
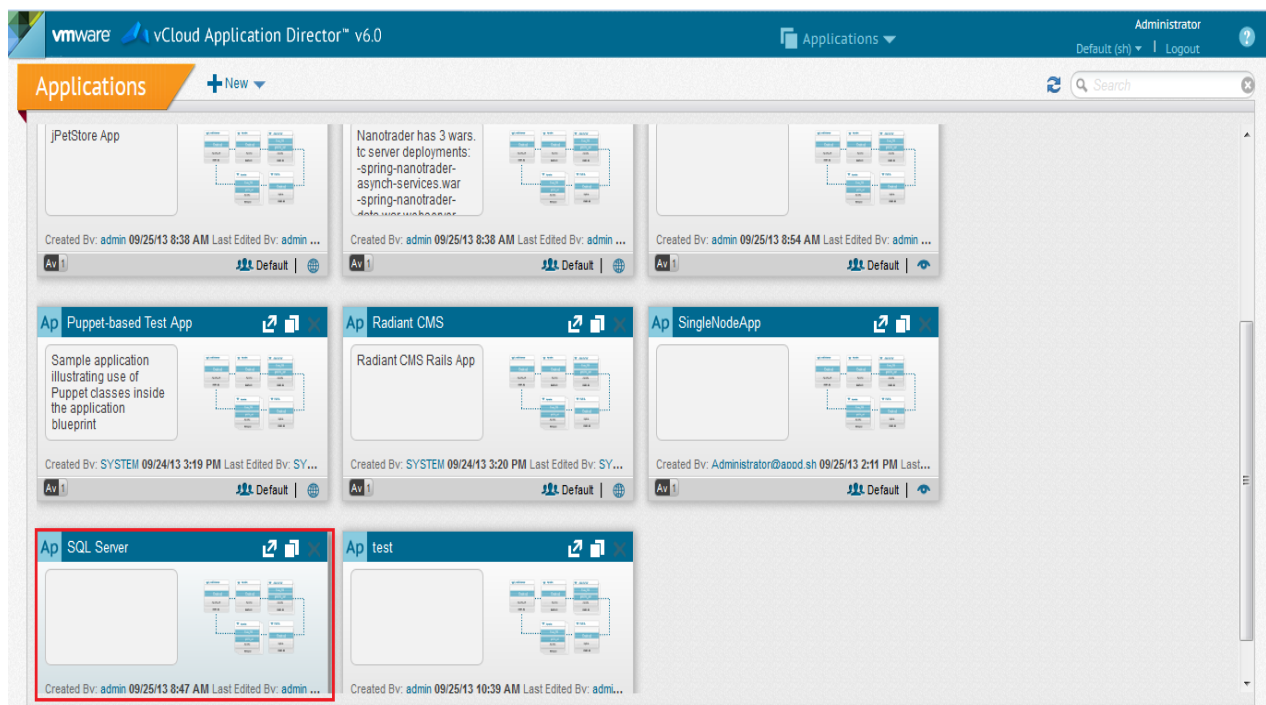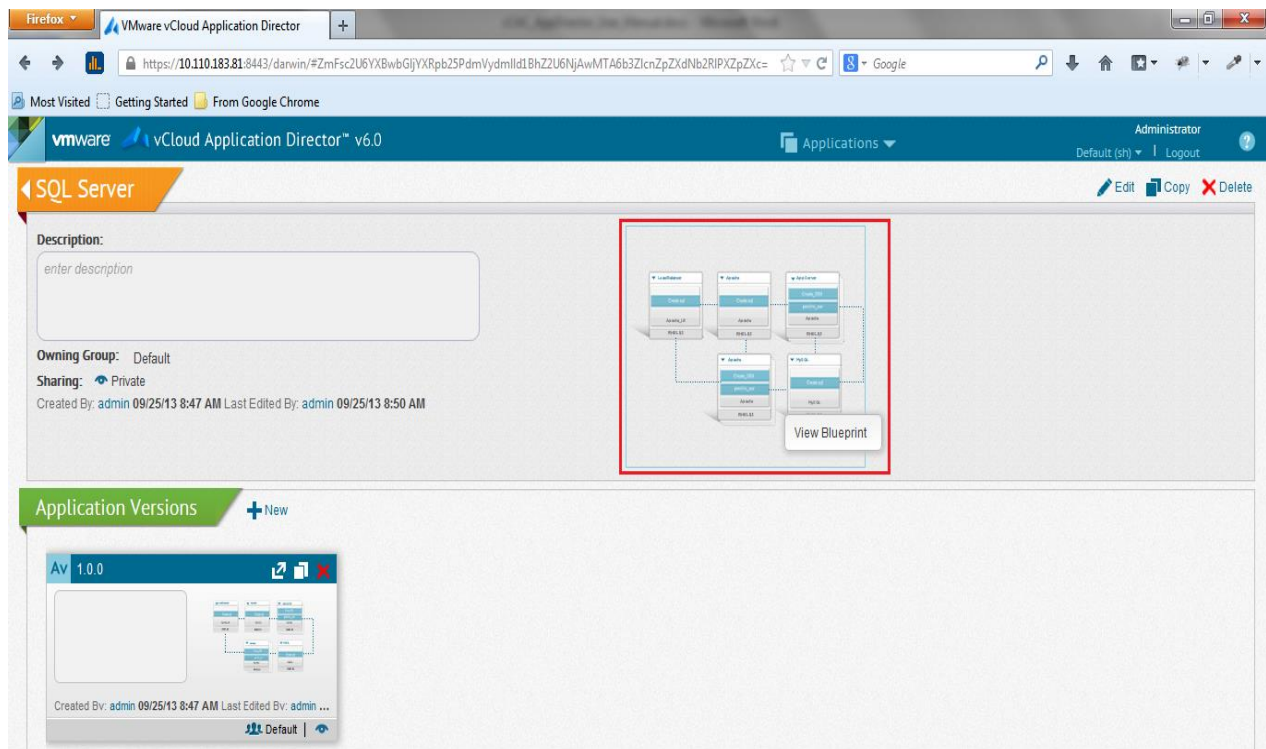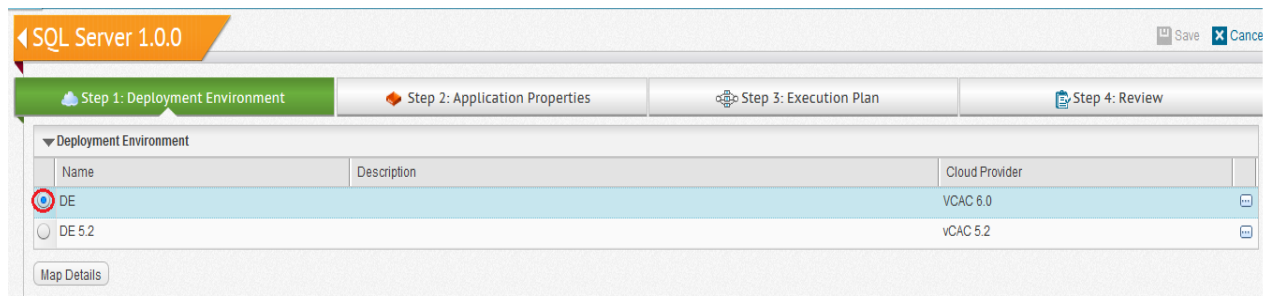
3. Now click on the **Deploy** icon as shown and enter a new name for the Deployment Profile e.g. "SQL Server 1.0.0" and then click **Deploy**
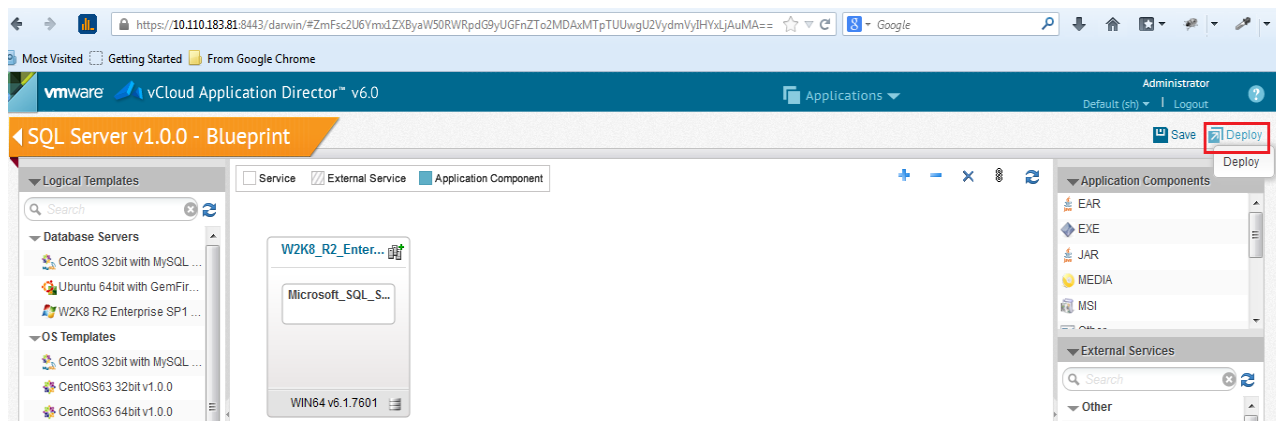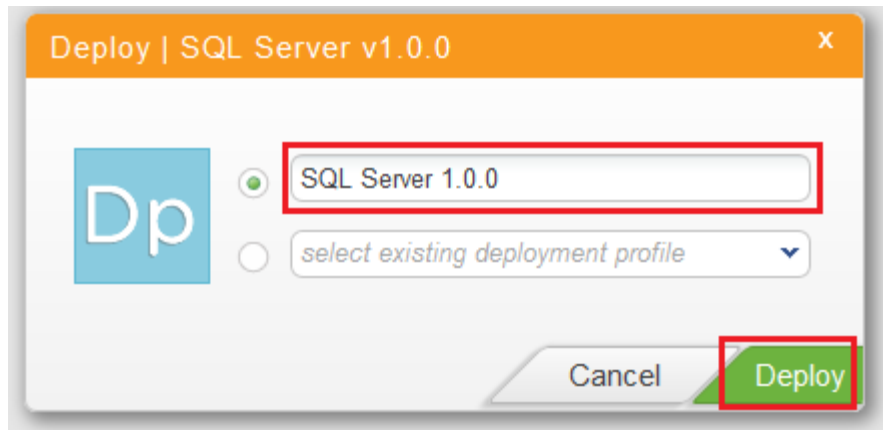
4. This will bring up the deployment wizard. Select the only available Deployment Environment

5. Click on the "**Map Details**" button and select the appropriate **Cloud & Storage template** from the drop down list

6. Now review the **Cloud Templates** (i.e. the vSphere Machine Blueprints) that will be used for this deployment and then click **Next** to review the Application Properties.

7. Review the Application Properties and then click Next to review the execution Plan
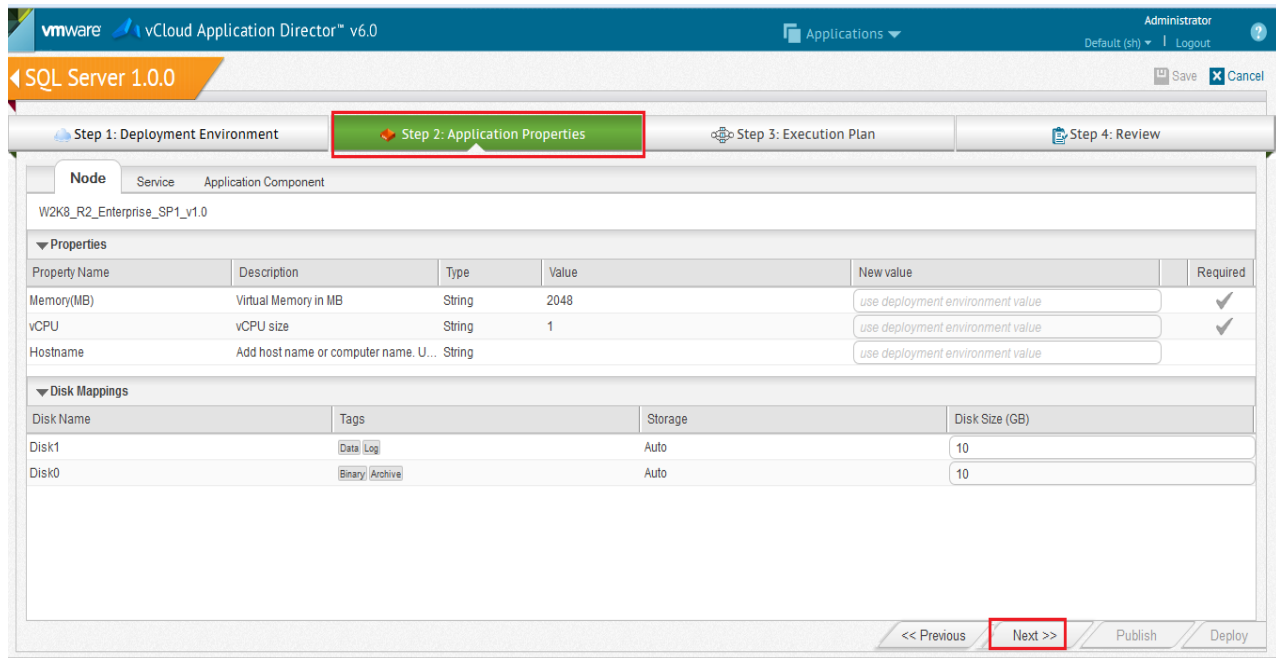
8. Review the **Execution Plan**, which provides you with a visualization of all the steps involved in provisioning the VM's as well as installing, configuring, and starting the software services. You can add custom Tasks on this view as well. Click **Next**.
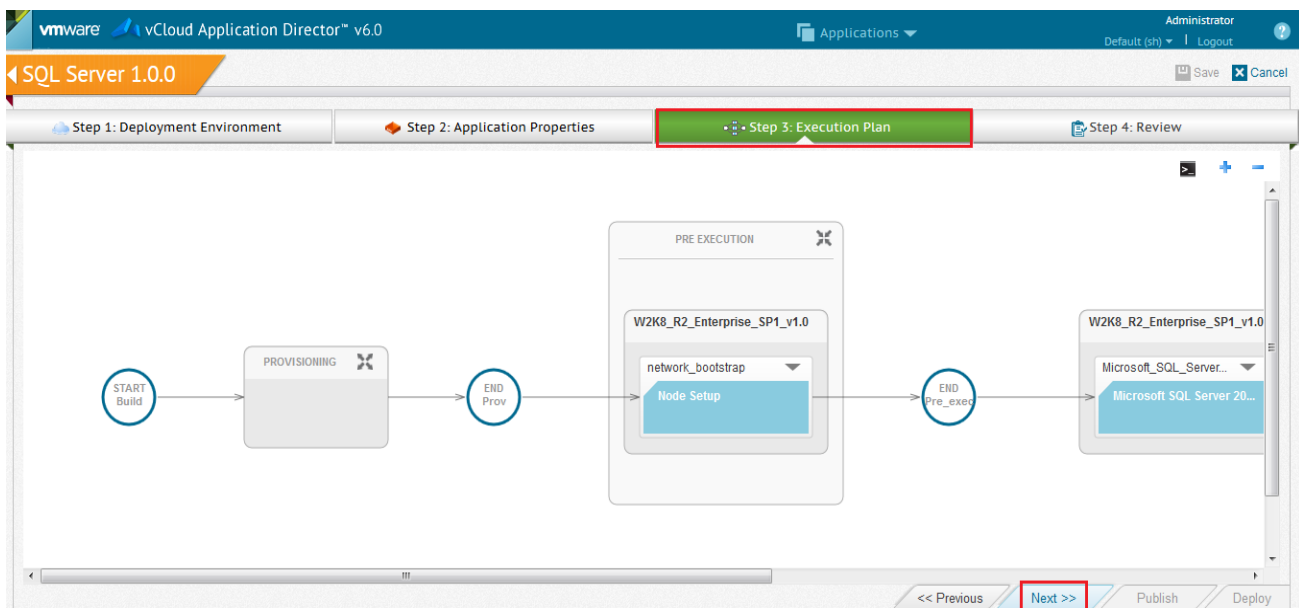
9. Review the last page that summarizes all the information for this application deployment. Click on **Publish** to go ahead and publish this Deployment Profile to the Service Catalog into vCAC
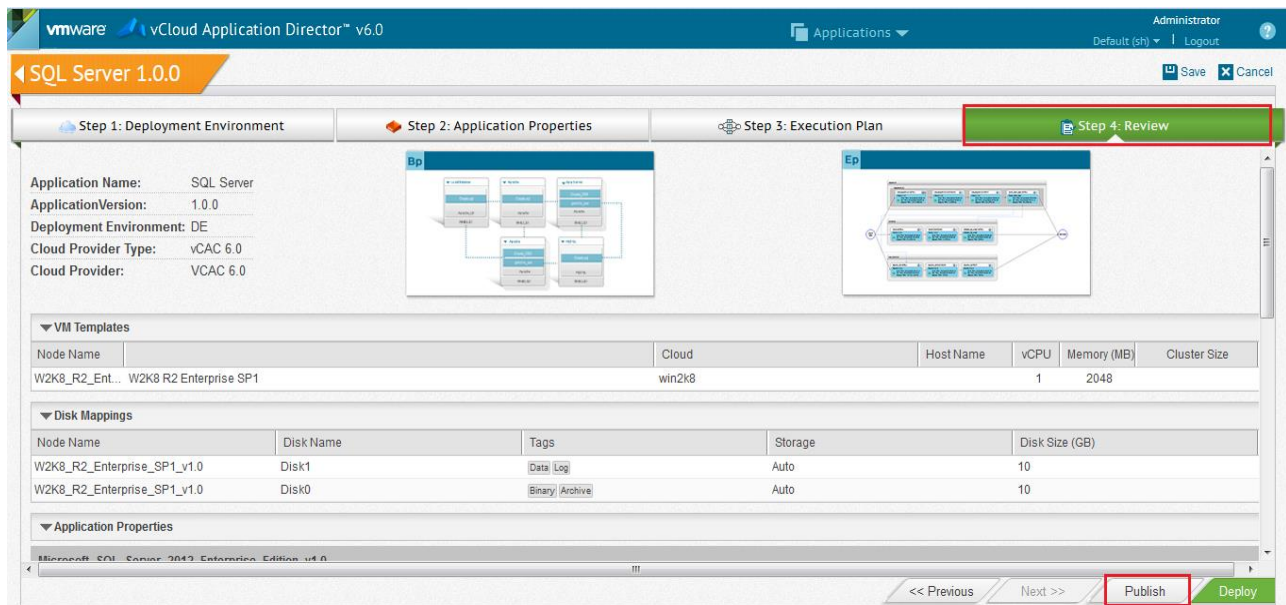
10. Provide a name and description and then click **OK** to publish
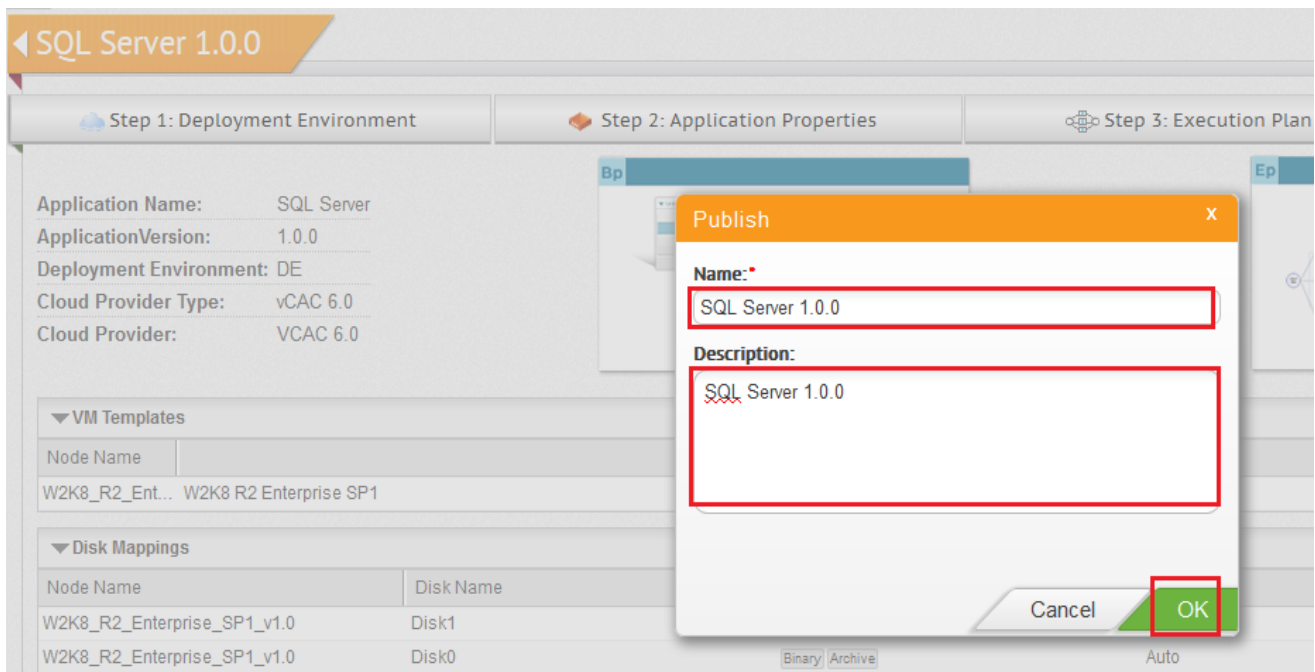
3.2 Managing Entitlements of the Newly Published Application

1. Login to the vCAC v6.0 https://appd-sh-006.eng.vmware.com/shell-ui-app/org/sh as Administrator@appd.sh/ca$hc0w1 using SSO
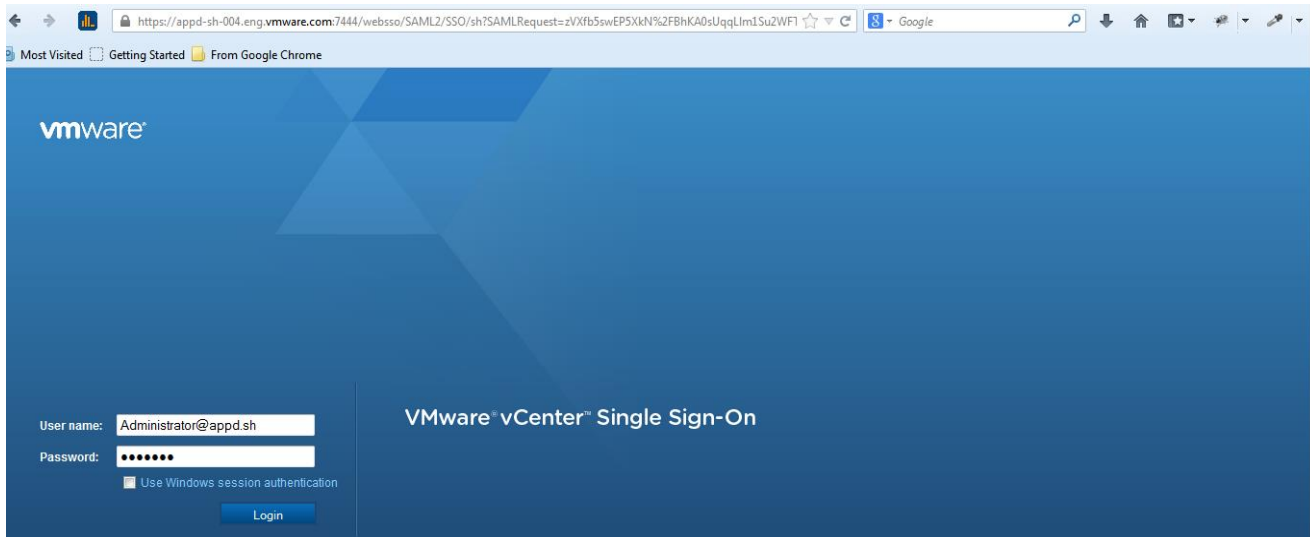
2. Click on the **Administration** tab
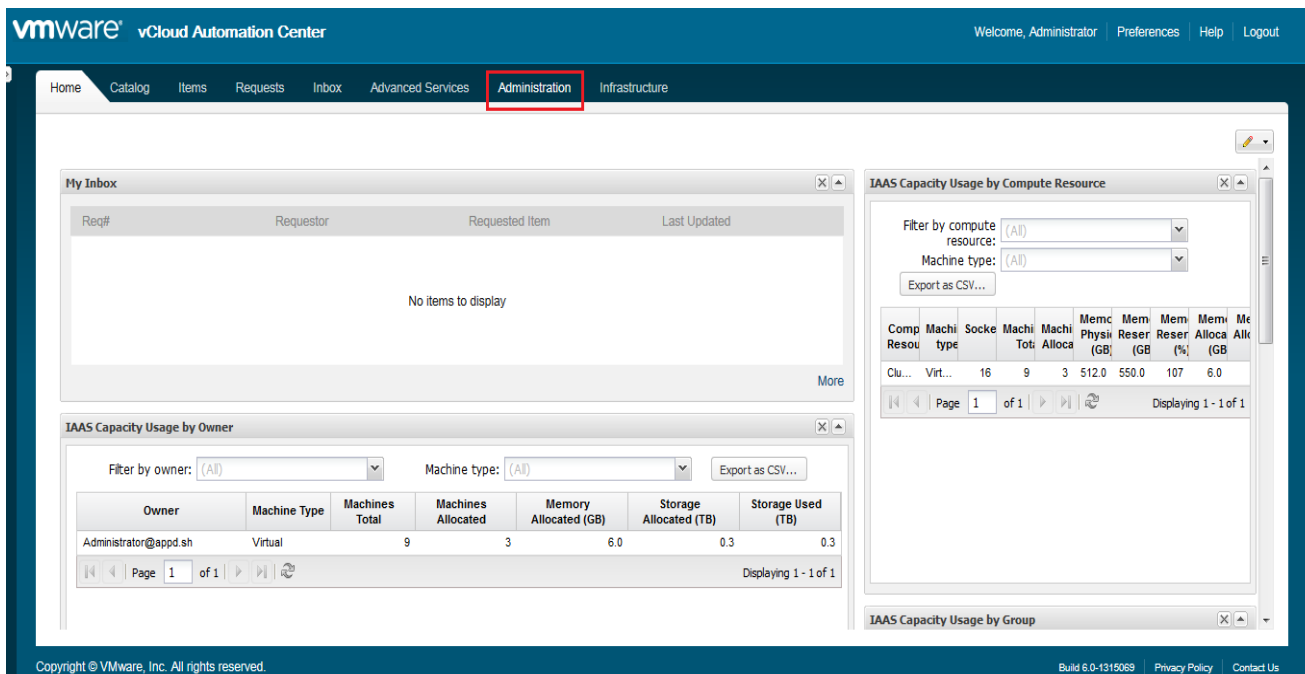
3. Select **Catalog Management**
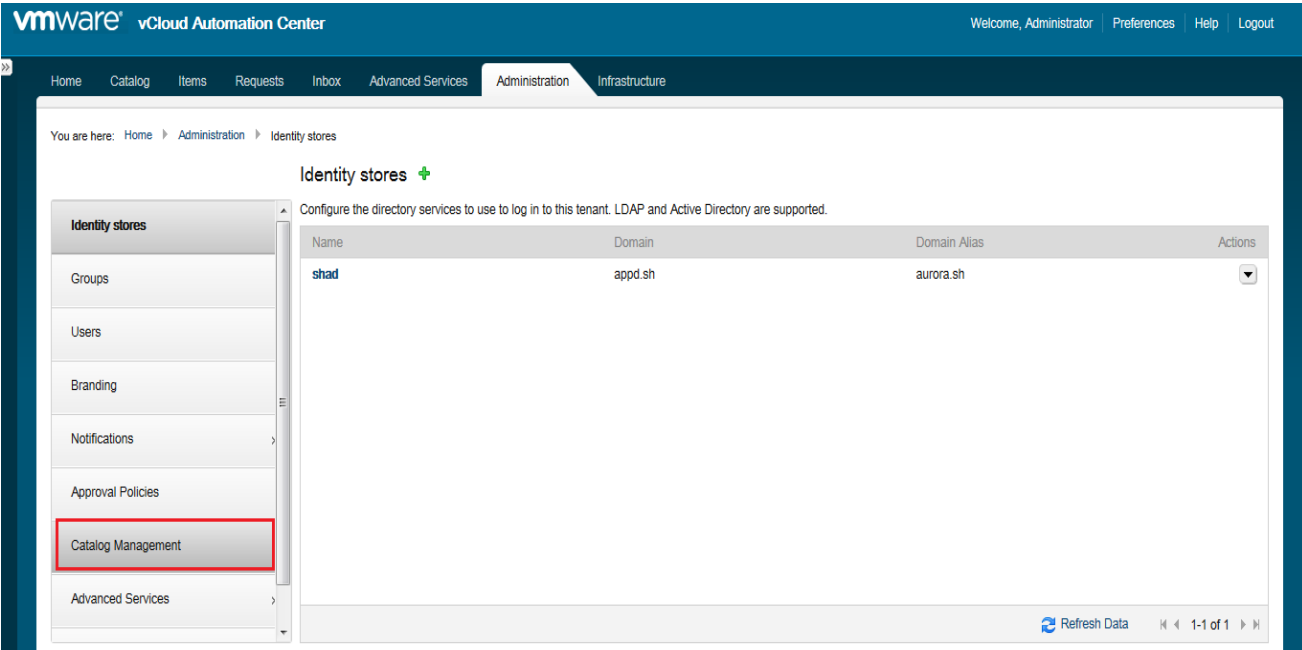
4. Click on to **Catalog Items**
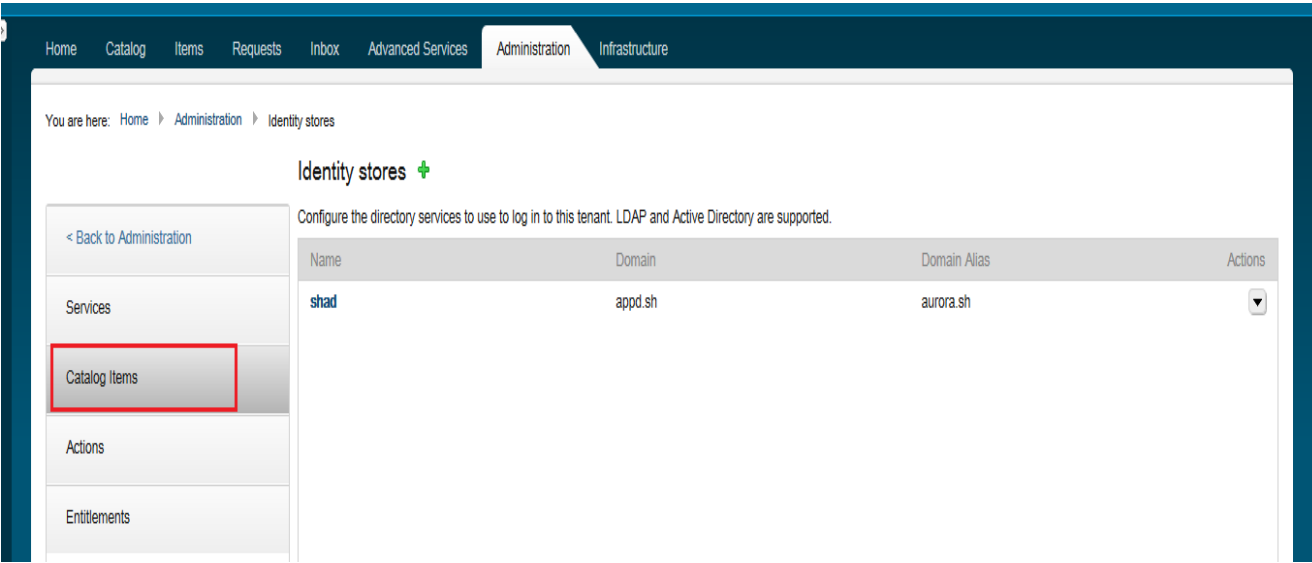
5. Select the published **SQL Server 1.0.0** application

6. From the **Service** drop-down, select **sqlserver** to assign this Catalog Item to the sqlserver Service Category. Finally click **Update**

7. Click on **Entitlements** and select the "sqlserver" Provisioning Group

8. Click on the **Items & Approvals** tab. Ensure that Applications are listed under Entitled Services

9. Search for the published SQL Server 1.0.0 application under **Entitled Catalog Items** and click **Update** to save these changes

3.4 Request the Application as a Catalog Consumer

1. Log into vCAC Service Catalog using SSO as a Catalog Consumer

2. Click on the **Catalog** tab

3. Select SQL Server
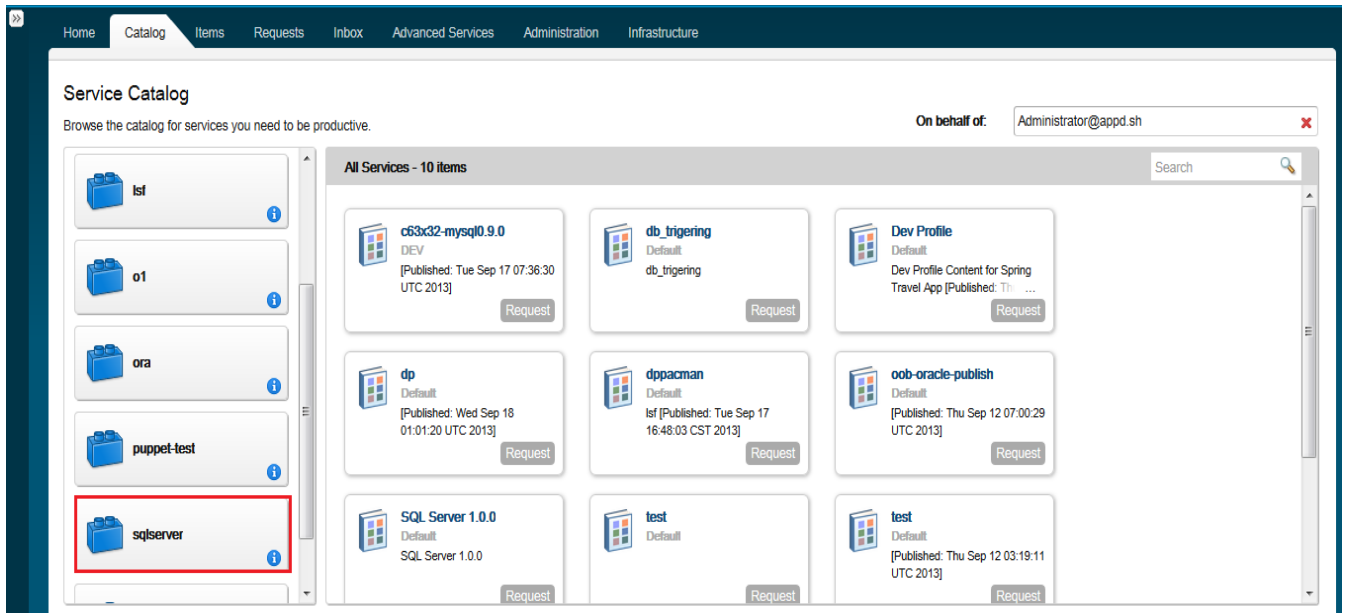
4. Click on the **Request** Button for published SQL Server 1.0.0 application
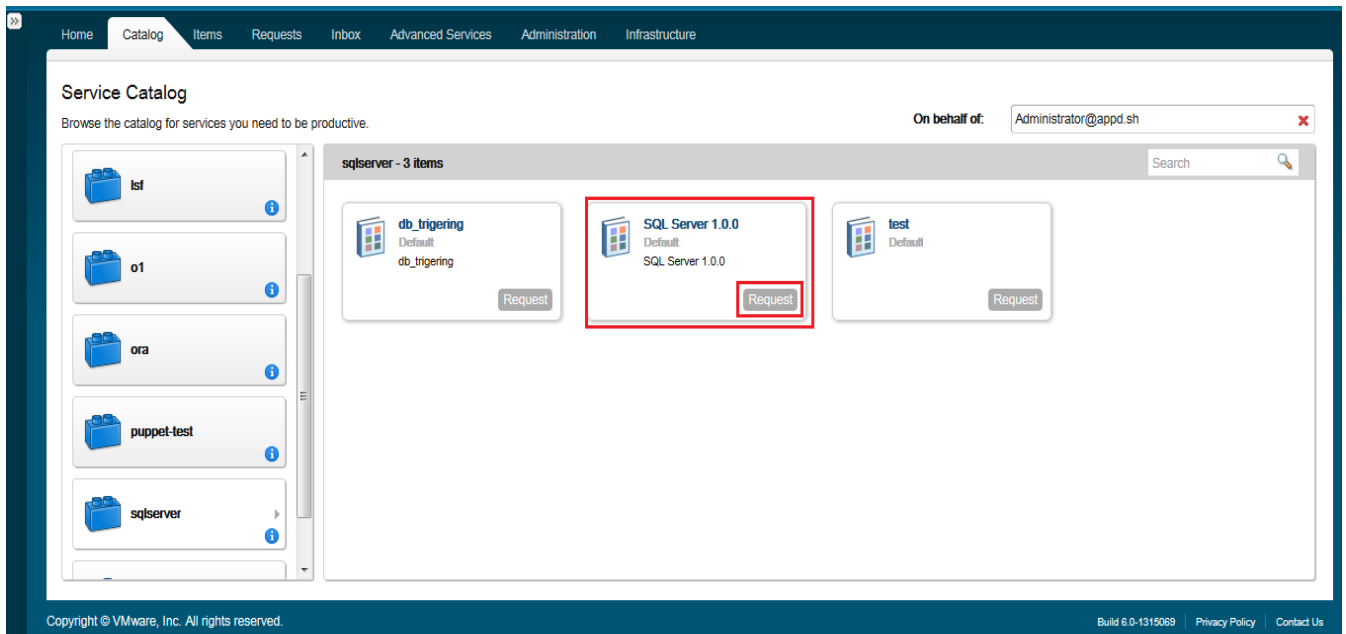
5. Provide Description & Details and click **Next**.

6. Review all the application **properties**. Click **Submit** to provision this application.

3.5 View the status of the application deployment

After completion of the deployment, we can check the status by following two methods

Method -1: From Application Director

1. Login to the Application Director v6.0 instance

2. Review the deployment status from the Deployments page by selecting **Deployments** from the main menu.
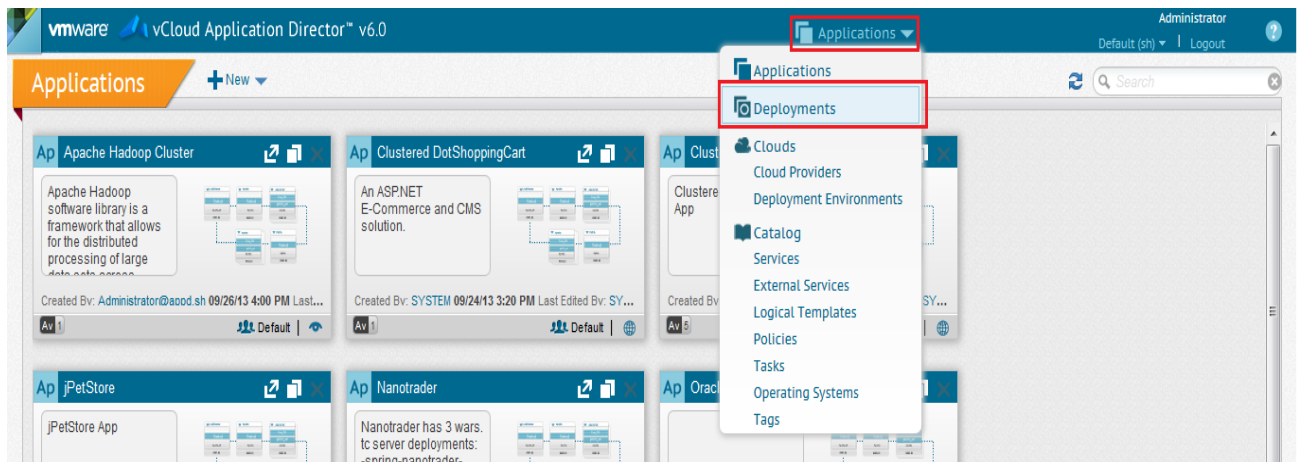
3. Hover mouse on the below box to see where this deployment is initiated from. Click on this deployment
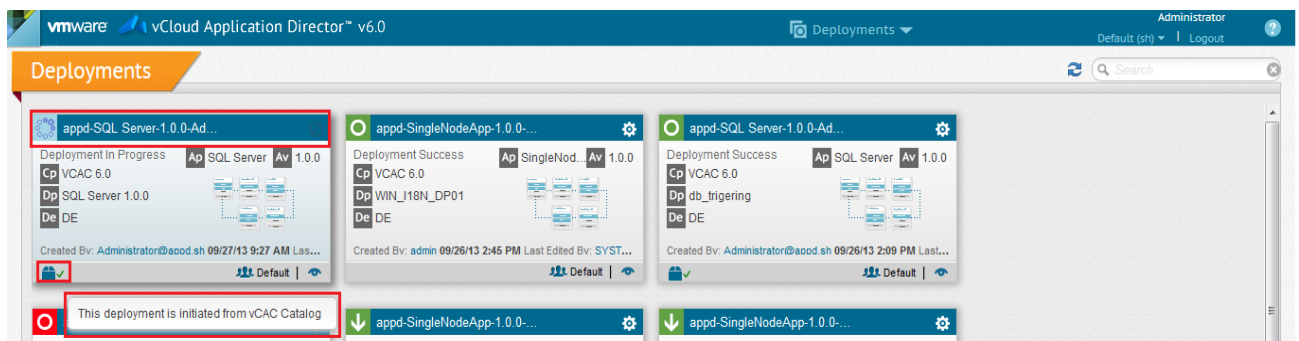
4. Check the success/failure of the deployment
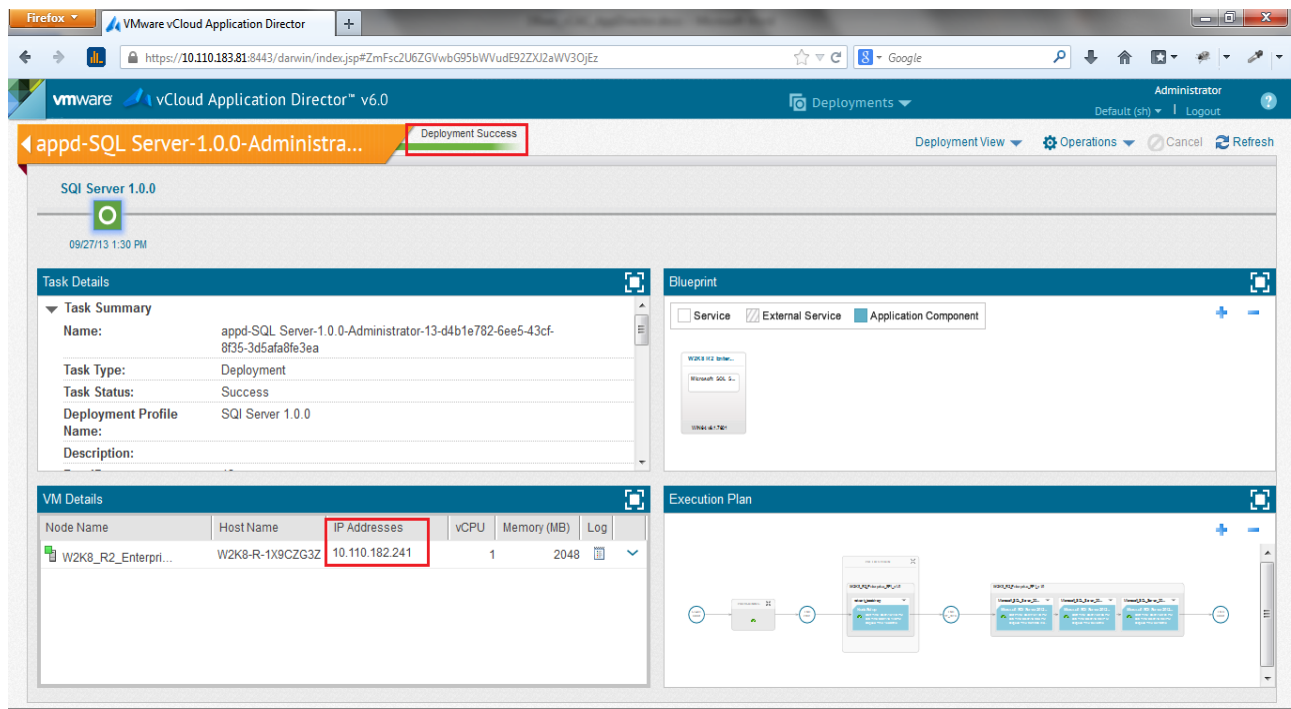
Method -2: From vCAC

1. Log into vCAC Service Catalog using SSO as a Catalog Consumer

2. Click on the **Items** tab

3. Select **the appd-SQL_Server** item

4. Check the success/failure of the deployment.

5. Check the machine IP by clicking on the **VM Details** tab.

3.6 Launching the Application

1. Click on the **VM Details** Page to get the IPs of the machines. We will need these IPs to launch the application
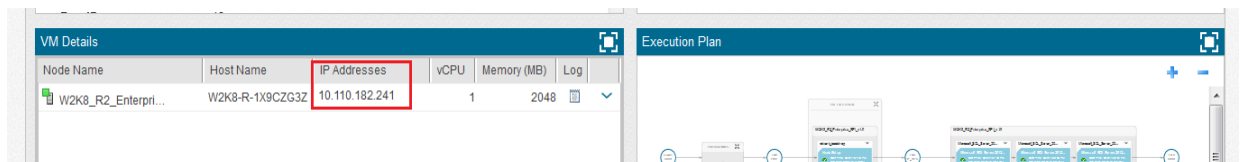
2. RDP into the created machine "10.110.182.241" as Start Menu -> Type mstsc.exe in the "*Search programs and files*" text box. Press ENTER key
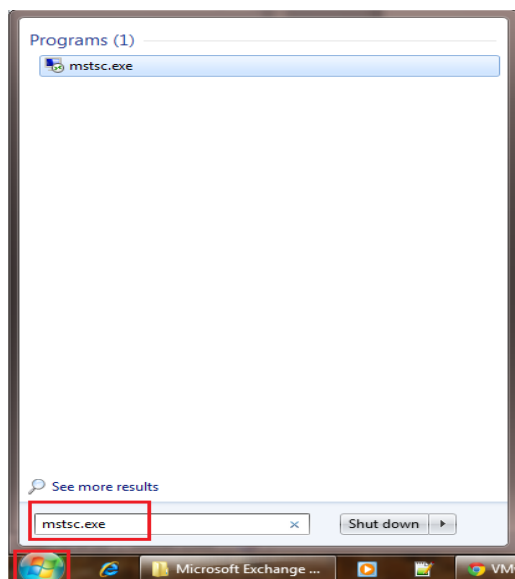
3. Now type machine's IP in the **Computer** Filed and click **Connect**
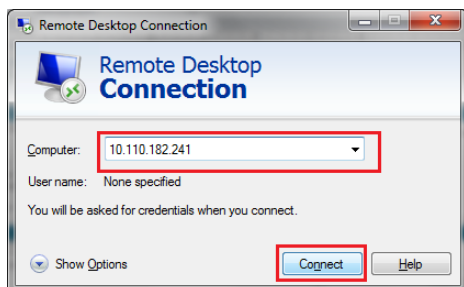
4. Now enter the system account credential
   After entering the credential click OK button
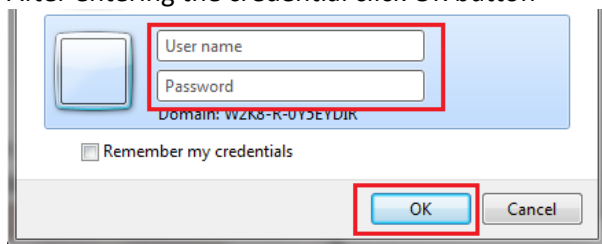
5. Now we are successfully logged into the machine

6. Click on Start Menu → All Programs → Microsoft SQL Server 2012 → Configuration Tools → SQL Server Installation Center (64-bit). Click yes if prompted.
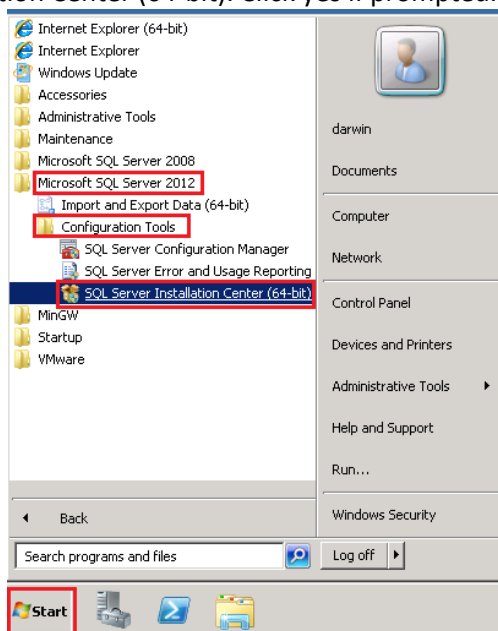
7. To run the SQL Server features discovery report, click **Tools** in the left-hand navigation area of **SQL Server Installation Center**, and then click **Installed SQL Server features discovery report**
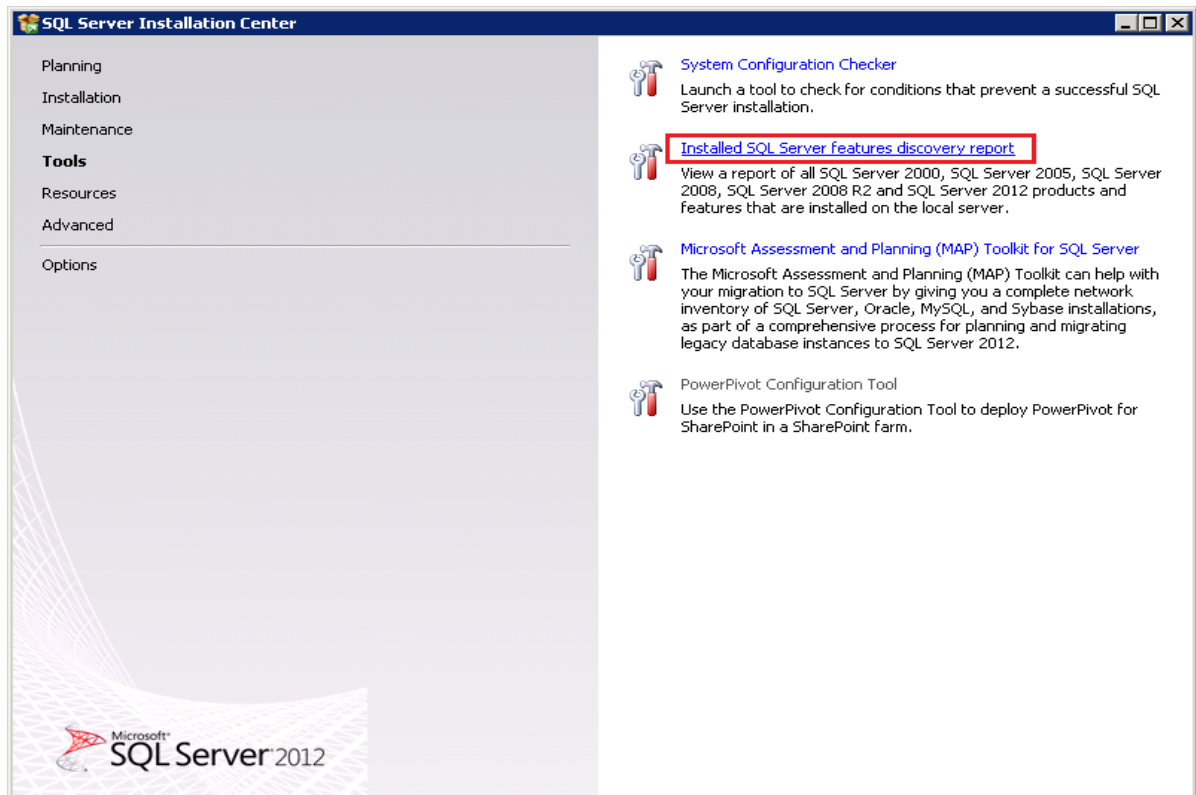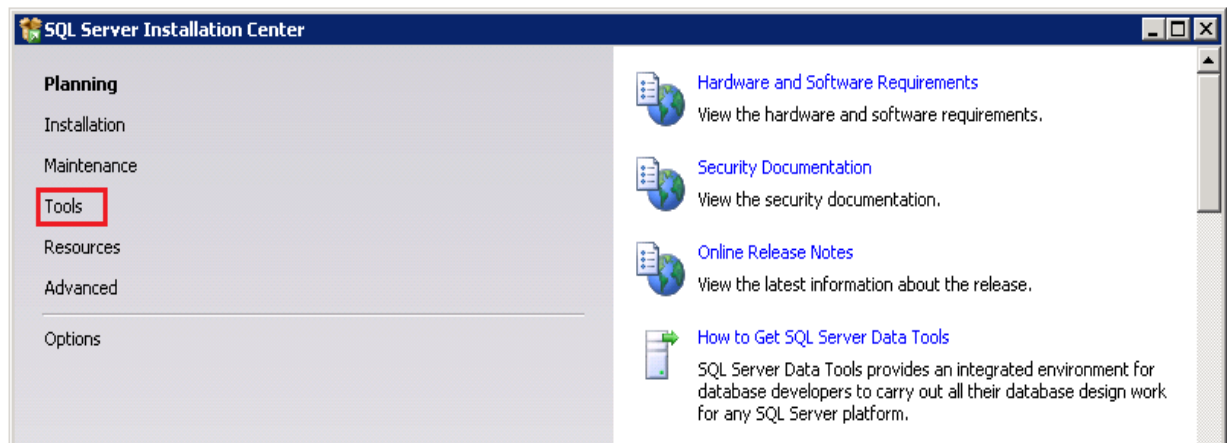
8. The SQL Server discovery report can be used to verify the version of SQL Server and the SQL Server features installed on the computer. The **Installed SQL Server features discovery report** displays a report of all SQL Server 2000, SQL Server 2005, SQL Server 2008, SQL Server 2008 R2 and SQL Server 2012 products and features that are installed on the local server

4. Summary

This solution provides automated installation and configuration for SQL Server 2012 service as a DB service and utilizes industry's leading Cloud-enabled self-service provisioning solution, VMware vCloud Automation Center 6.0

5. Benefits

DB as a Service can accelerate application development. DB as a Service provisions database resources automatically based on available system resources, allowing application developers, architects, testers, and other consumers of databases to store and retrieve data without having to deal with lower-level database administration functionality.

The key DB as a Service characteristics include:

- **Enables on-demand, self-service-based database provisioning.** DB as a Service allows database consumers such as application developers, testers, and architects to provision databases easily using an on-demand, self-service platform. It allows provisioning databases using an easy-to-use platform that even nontechnical users can securely leverage while being compliant with all corporate IT policies.
- **Delivers an elastic and multitenant database platform.** DB as a Service delivers an elastic database platform that can expand and contract its compute and storage resources dynamically based on resources available, repurposing them as required.
- **Leverages existing servers and storage.** Unlike other clustered platforms, DB as a Service everages existing servers and storage. It delivers an automated resource management across standalone, clustered, virtualized, and nonvirtualized servers and storage.
- **Supports common security and administration policies across databases.** DB as a Service leverages common policies that can be deployed across a farm of databases running a variety of operating systems and hardware platforms. The policies can enforce uniformity of frequent administration tasks across databases, ensuring compliance, consistency, and security — all at a lower cost.

- **Automates database administration and monitoring**. A key feature of DB as a Service is the ability to automate the administration and monitoring of databases such as backup, recovery, tuning, optimization, patching, upgrading, and creation. Based on the policies that are defined by Database Administrators, database administration tasks can be automated — scheduled or proactively initiated to support various database activities.
- **Meters database usage for chargeback.** DB as a Service platforms offer granular metering of database usage that can be used for chargeback to various consumers. They typically track based on time, space, table, availability, and resource usage and provide an aggregated view per department, group, or individual user.