

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.

VMware Application Director 6.0 Tech Preview (Beta) introduces new features in Service Catalog Support, Application Updates, External Services, and Policy-Based Provisioning. The new features will reinforce and enhance the product's capabilities in application modeling, deployment, and update lifecycle management, allowing the product to continue to be a comprehensive application provisioning & update lifecycle management solution for cloud-ready applications on hybrid clouds.

2. System Pre-requisites

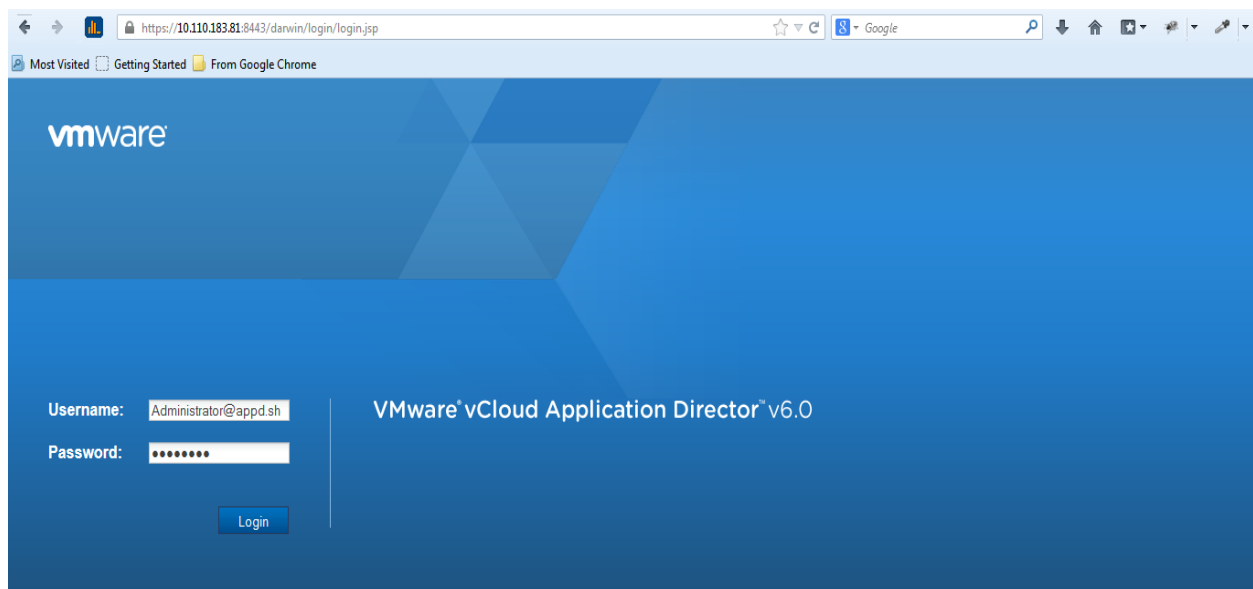
1. Install and configure VMware vFabric Application Director 6.0 with vCloud automation center (vCAC) 6.0. Refer to the [product documentation](#) for information about installing and configuring Application Director.
2. Add **SQL Server 2012** as an application in the Application Director Applications.

3. Set up

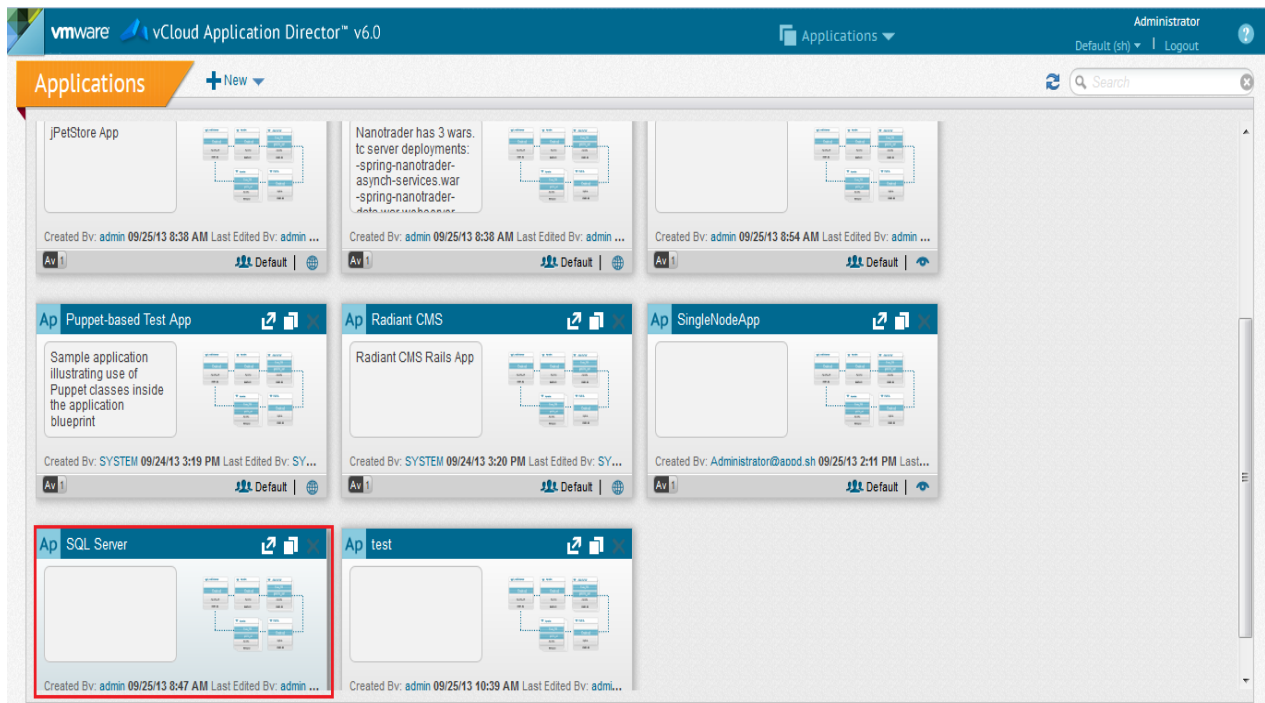
Follow the below steps to publish SQL server as a DBaaS in vCAC 6.0:

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

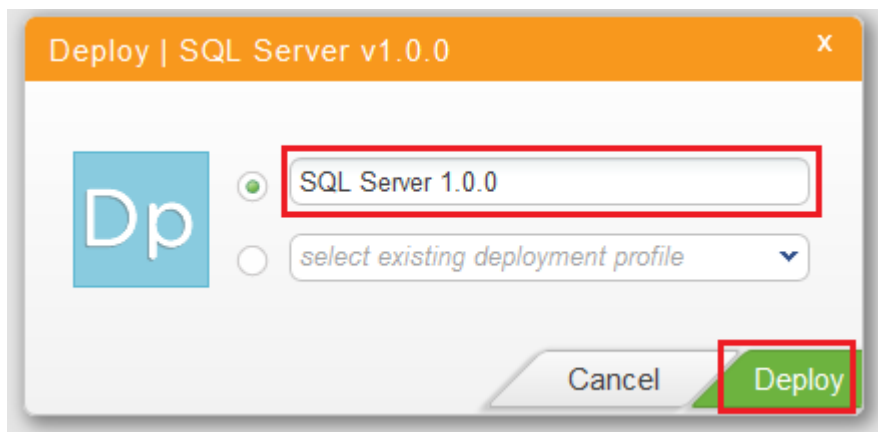
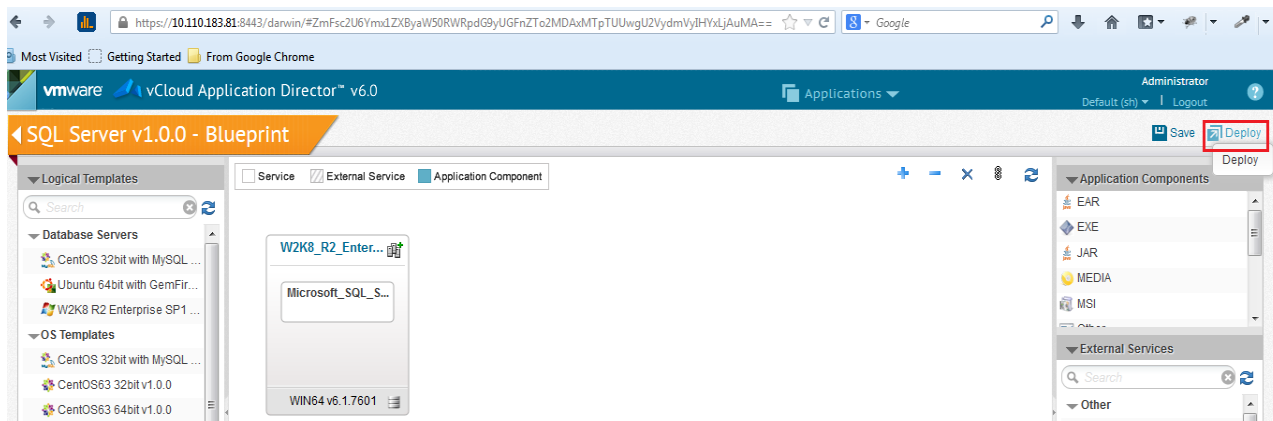
1. Login to the Application Director v6.0 <https://10.110.183.81:8443/darwin/> as Administrator@appd.sh as [Administrator@appd.sh/ca\\$hc0w1](#).



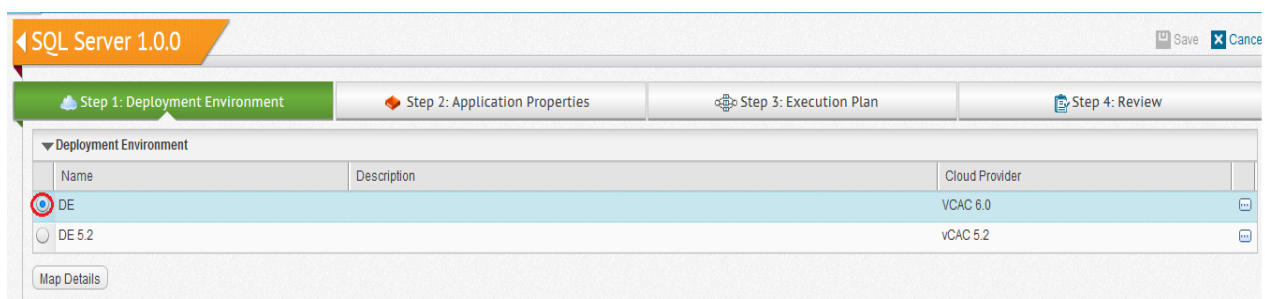
- Now navigate to **Applications** from the main menu and select **SQL Server** App and then select view blueprint. This will navigate to the blueprint canvas and click **view blueprint** as shown



- 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**



- This will bring up the deployment wizard. Select the only available Deployment Environment



- Click on the **“Map Details”** button and select the appropriate **Cloud & Storage template** from the drop down list

vmware vCloud Application Director™ v6.0

Applications ▼ Administrator Default (sh) | Logout

SQL Server 1.0.0 Save Cancel

Step 1: Deployment Environment Step 2: Application Properties Step 3: Execution Plan Step 4: Review

▼ Deployment Environment

Name	Description	Cloud Provider
DE		VCAC 6.0
DE 5.2		VCAC 5.2

Map Details

▼ VM Templates

Node Name		Cloud
W2K8_R2_Enterprise_SP1_v1.0	W2K8 R2 Enterprise SP1	win2k8

▼ Disks

Node Name	Disk Name	Tags	Storage
W2K8_R2_Enterprise_SP1_v1.0	Disk1	Data Log	Auto
W2K8_R2_Enterprise_SP1_v1.0	Disk0	Binary Archive	Auto

<< Previous Next >> Publish Deploy

- 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.

SQL Server 1.0.0 Save Cancel

Step 1: Deployment Environment Step 2: Application Properties Step 3: Execution Plan Step 4: Review

▼ Deployment Environment

Name	Description	Cloud Provider
DE		VCAC 6.0
DE 5.2		VCAC 5.2

Map Details

▼ VM Templates

Node Name		Cloud
W2K8_R2_Enterprise_SP1_v1.0	W2K8 R2 Enterprise SP1	win2k8

▼ Disks

Node Name	Disk Name	Tags	Storage
W2K8_R2_Enterprise_SP1_v1.0	Disk1	Data Log	Auto
W2K8_R2_Enterprise_SP1_v1.0	Disk0	Binary Archive	Auto

<< Previous Next >> Publish Deploy

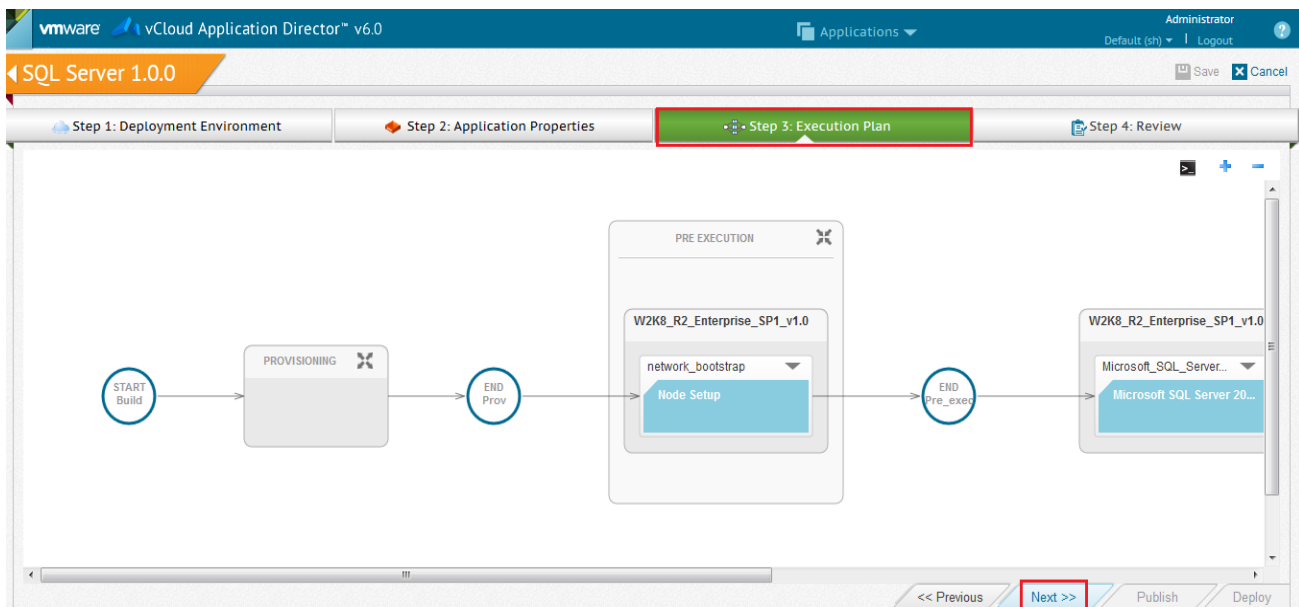
7. Review the Application Properties and then click Next to review the execution Plan

The screenshot shows the 'Step 2: Application Properties' window in VMware vCloud Application Director v6.0. The window title is 'SQL Server 1.0.0'. The breadcrumb navigation shows 'Step 1: Deployment Environment', 'Step 2: Application Properties' (highlighted), 'Step 3: Execution Plan', and 'Step 4: Review'. The main content area is divided into 'Node', 'Service', and 'Application Component' tabs. Under the 'Node' tab, the node name is 'W2K8_R2_Enterprise_SP1_v1.0'. Below this, there are two sections: 'Properties' and 'Disk Mappings'. The 'Properties' section contains a table with columns: Property Name, Description, Type, Value, New value, and Required. The 'Disk Mappings' section contains a table with columns: Disk Name, Tags, Storage, and Disk Size (GB). At the bottom right, there are navigation buttons: '<< Previous', 'Next >>' (highlighted), 'Publish', and 'Deploy'.

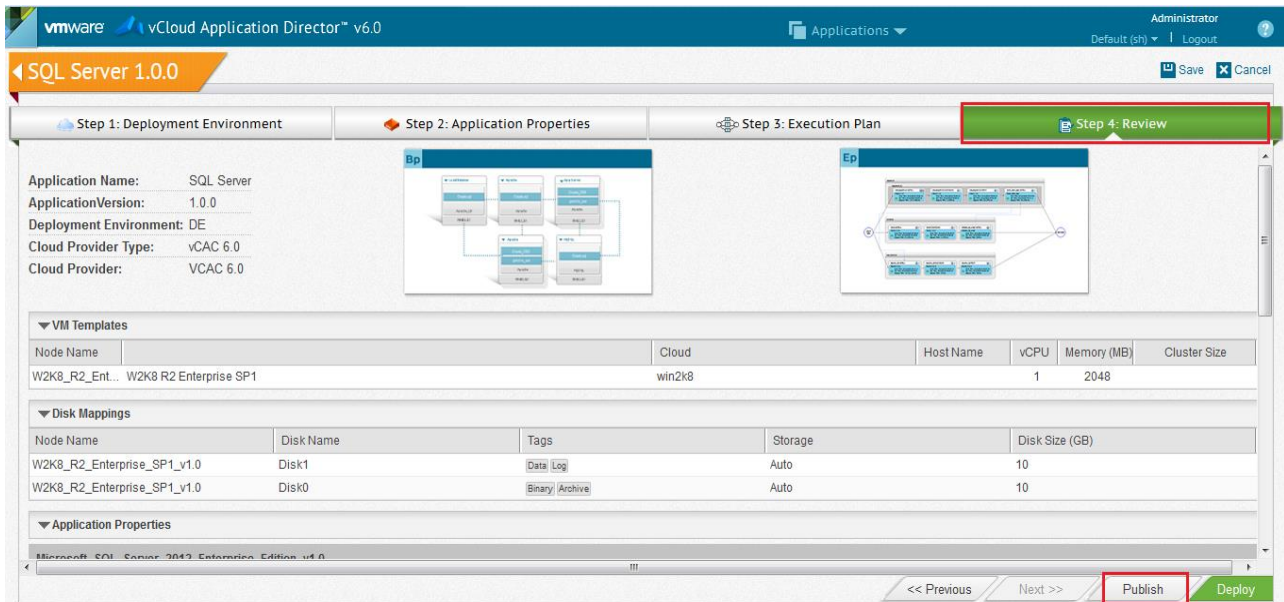
Property Name	Description	Type	Value	New value	Required
Memory(MB)	Virtual Memory in MB	String	2048	use deployment environment value	✓
vCPU	vCPU size	String	1	use deployment environment value	✓
Hostname	Add host name or computer name. U...	String		use deployment environment value	

Disk Name	Tags	Storage	Disk Size (GB)
Disk1	Data Log	Auto	10
Disk0	Binary Archive	Auto	10

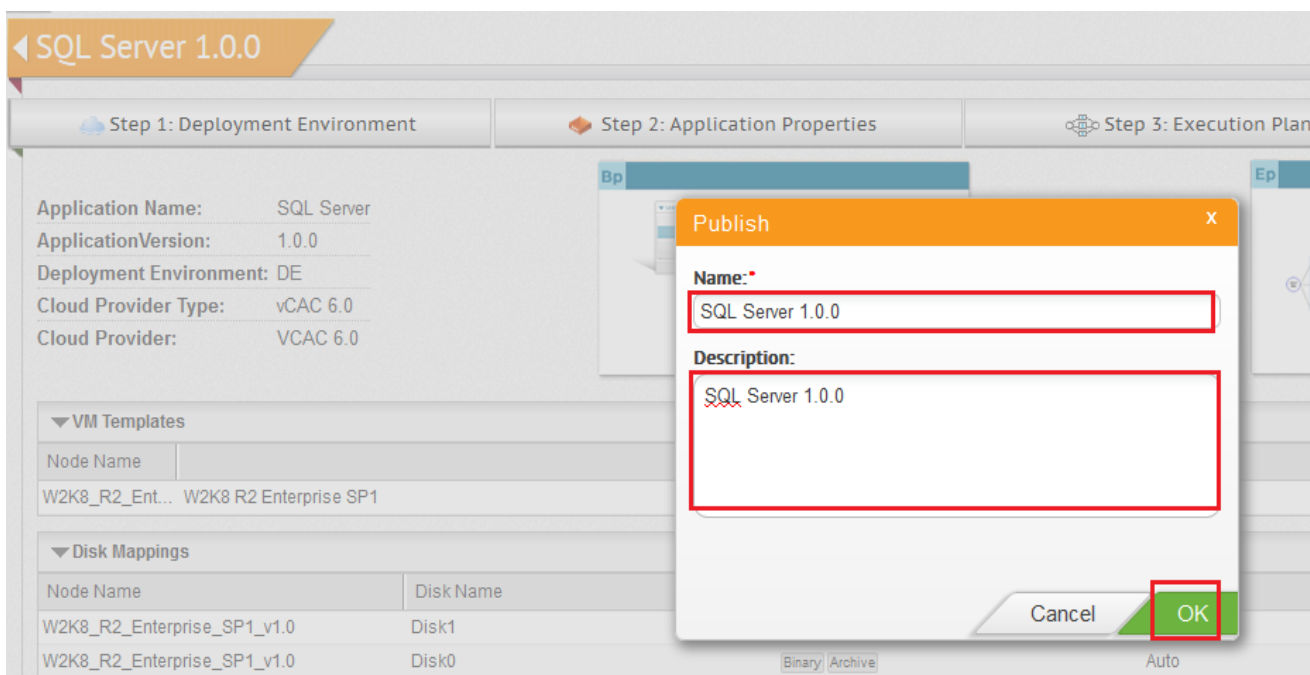
8. Review the **Execution Plan**, which provides you with a visualization of all the steps involved in provisioning the VM's as well as installing, configuring, and starting the software services. You can add custom Tasks on this view as well. Click **Next**.



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

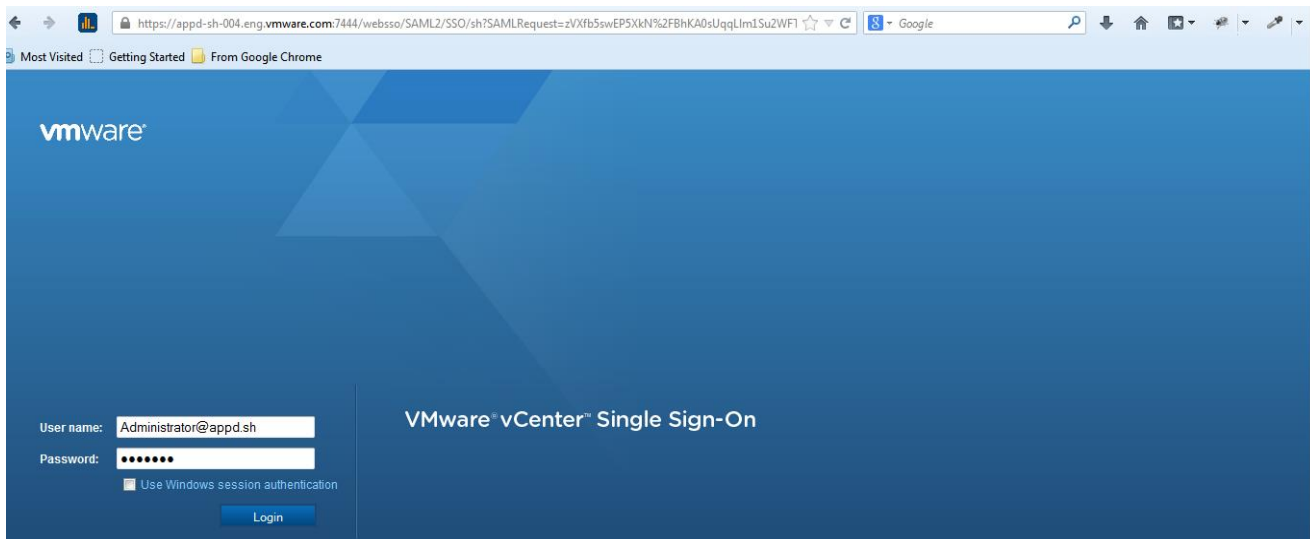


10. Provide a name and description and then click **OK** to publish

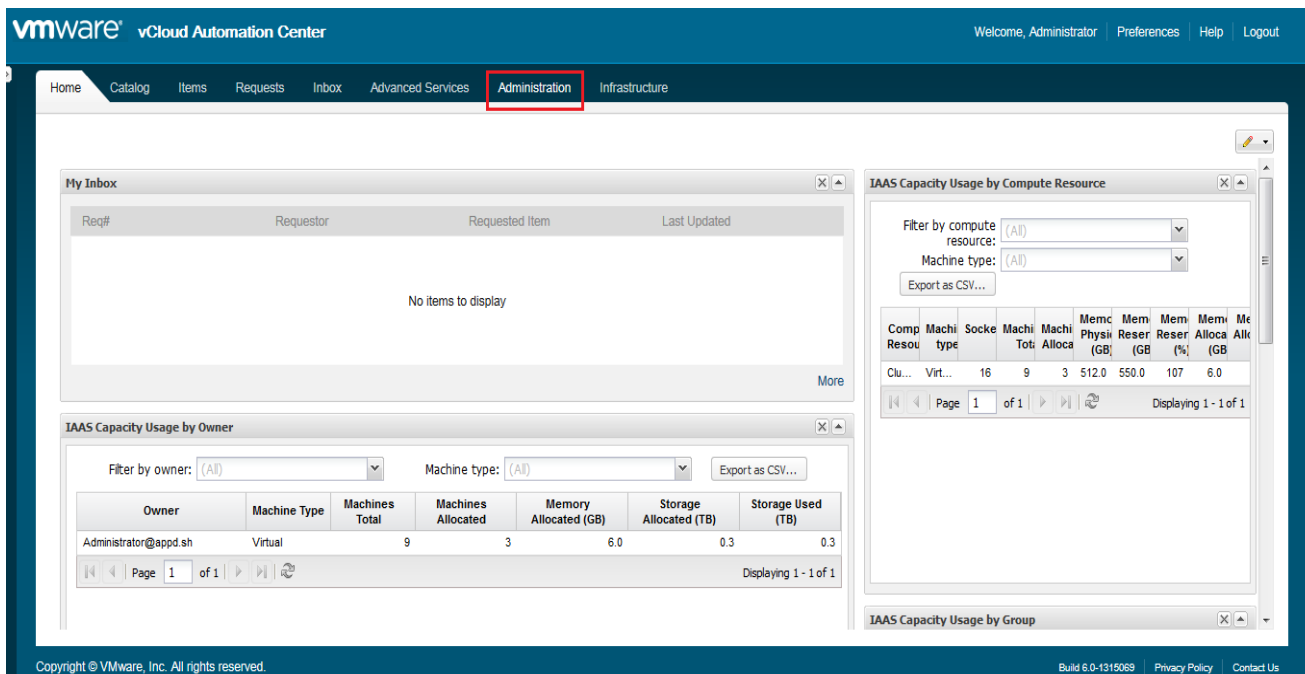


3.2 Managing Entitlements of the Newly Published Application

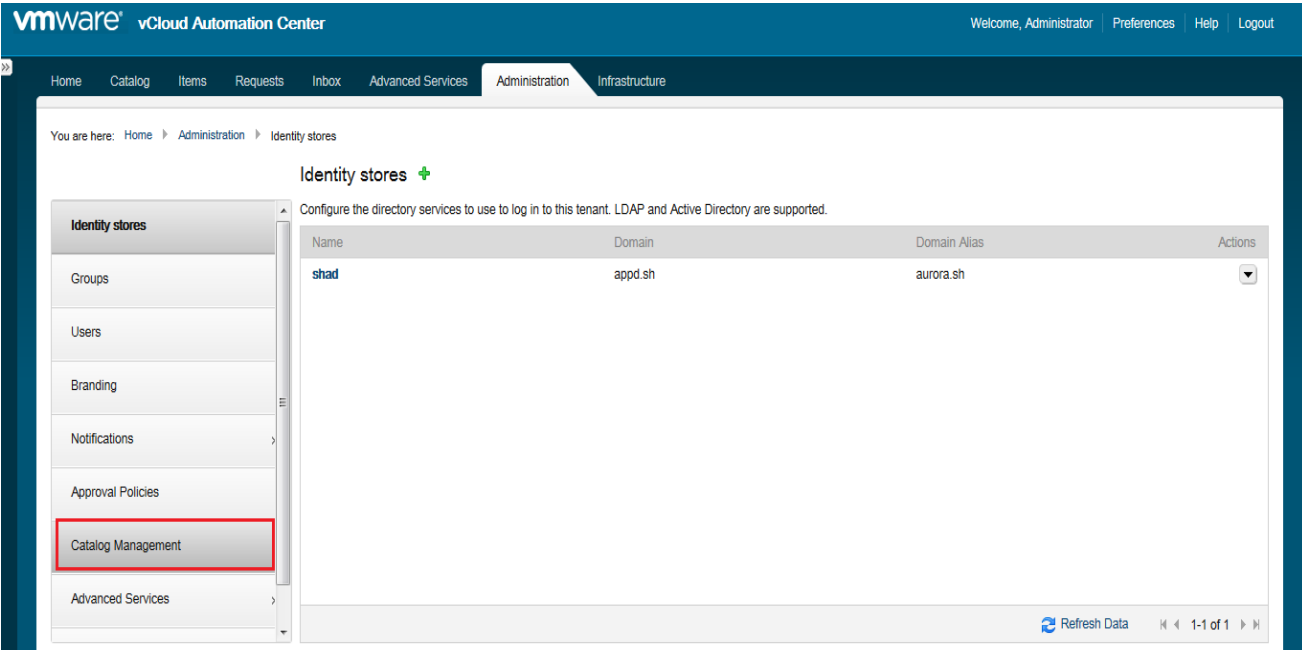
1. Login to the vCAC v6.0 <https://appd-sh-006.eng.vmware.com/shell-ui-app/org/sh> as Administrator@appd.sh using SSO



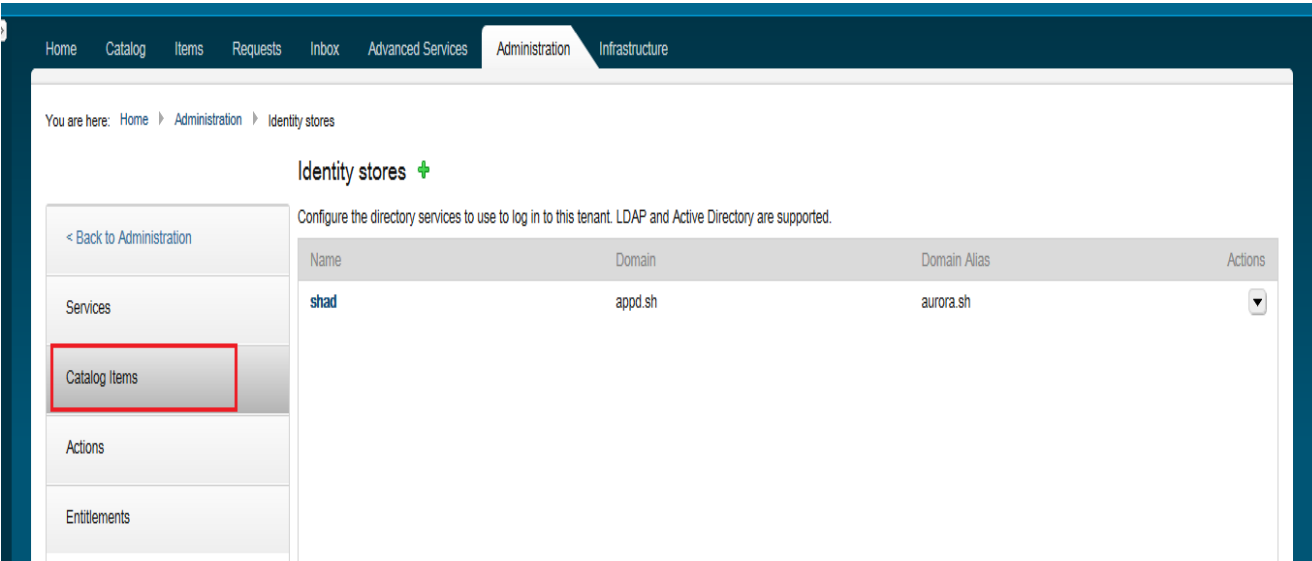
2. Click on the **Administration** tab



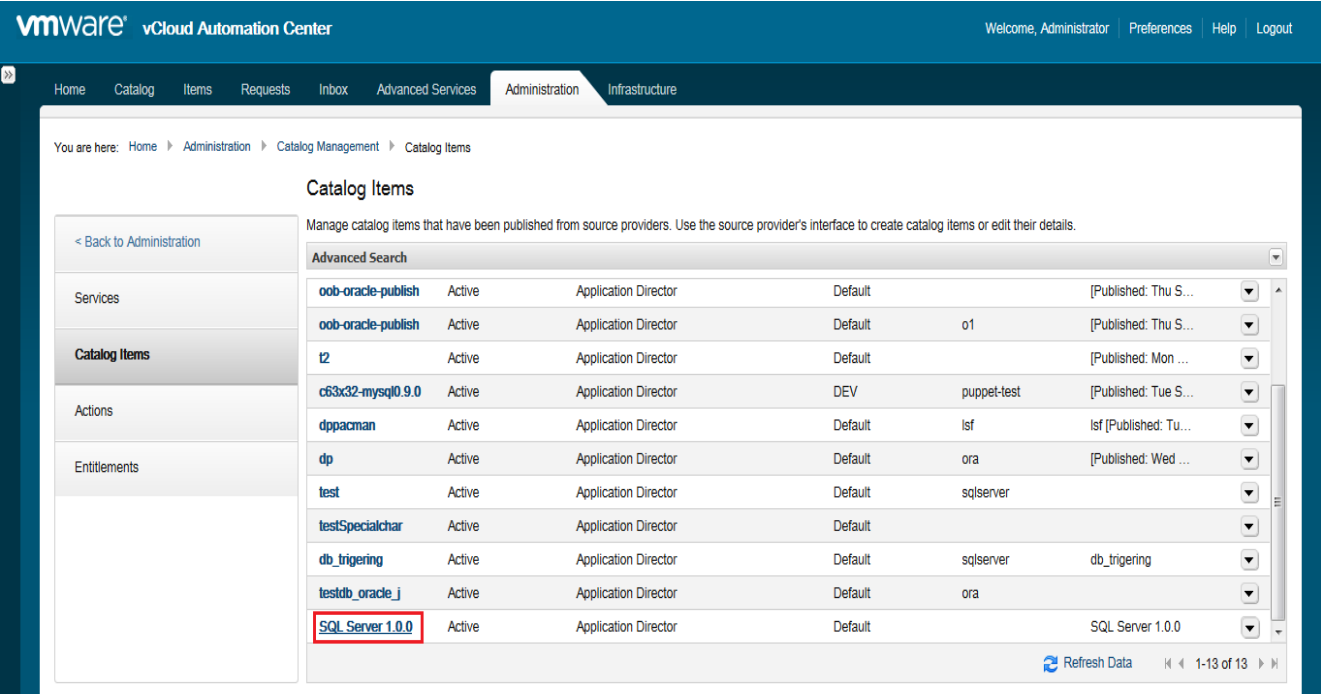
3. Select **Catalog Management**



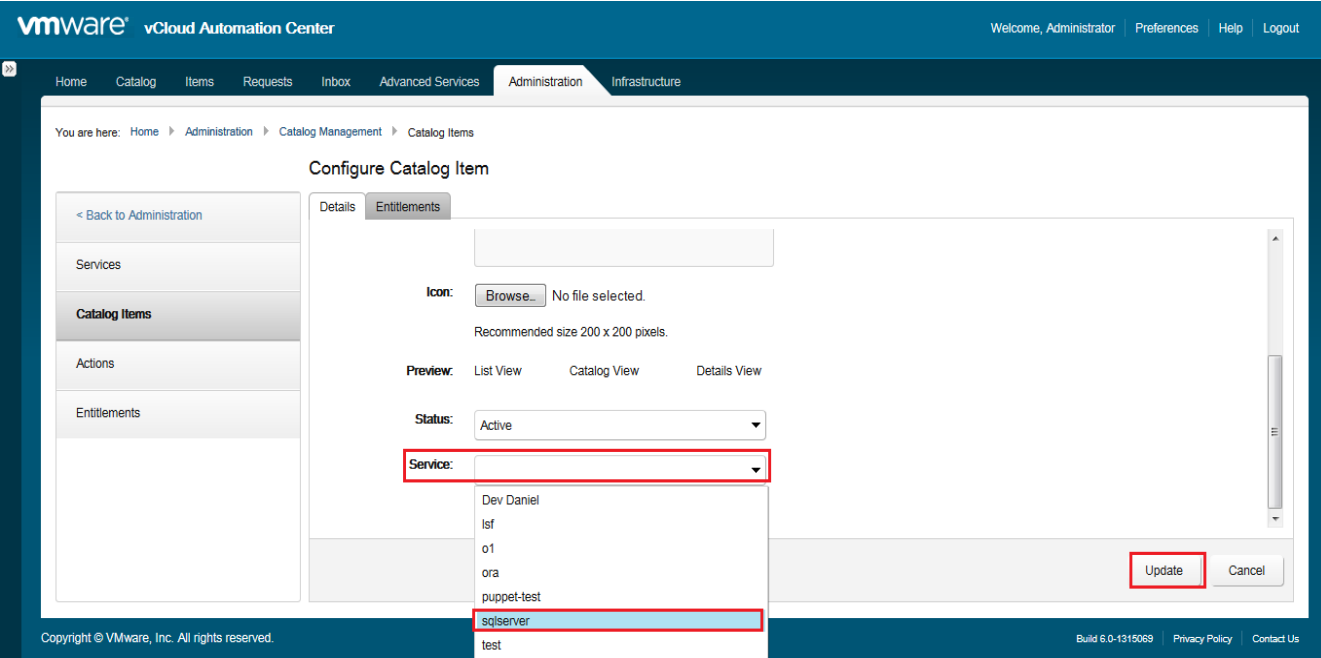
4. Click on to **Catalog Items**



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

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Welcome, Administrator | Preferences | Help | Logout

Home Catalog Items Requests Inbox Advanced Services Administration Infrastructure

You are here: Home > Administration > Catalog Management > Catalog Items

Catalog Items

Manage catalog items that have been published from source providers. Use the source provider's interface to create catalog items or edit their details.

Advanced Search

Name	Status	Source	Resource Type	Scope	Service	Description	Actions
test	Active	Application Director		Default	test	[Published: Thu S...	
Dev Profile	Active	Application Director		Default	Dev Daniel	Dev Profile Conte...	
oob-oracle-publish	Active	Application Director		Default		[Published: Thu S...	
oob-oracle-publish	Active	Application Director		Default	o1	[Published: Thu S...	
t2	Active	Application Director		Default		[Published: Mon ...	
c63c32-mysql0.9.0	Active	Application Director		DEV	puppet-test	[Published: Tue S...	
dppacman	Active	Application Director		Default	lsf	lsf [Published: Tu...	
dp	Active	Application Director		Default	ora	[Published: Wed ...	
test	Active	Application Director		Default	sqlserver		
testSpecialchar	Active	Application Director		Default			

Refresh Data | 1-13 of 13

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Home Catalog Items Requests Inbox Advanced Services Administration Infrastructure

You are here: Home > Administration > Catalog Management > Entitlements

Entitlements

Create and manage entitlements that control access to catalog items and actions and specify the approval policies to apply to catalog requests. Update the priority of entitlements to determine which approval policy applies to a particular request.

Name	Provisioning Group	Order	Description	Status	Expires On	Last Updated By	Last Updated	Actions
test	Default	1		Active		Administrator@ap...	09/12/2013 08:53...	
daniel	Default	2		Active		Administrator@ap...	09/12/2013 09:04...	
o1	Default	3		Active		Administrator@ap...	09/12/2013 12:42...	
lsf	Default	4		Active		Administrator@ap...	09/17/2013 02:45...	
ora	Default	5		Active		Administrator@ap...	09/26/2013 02:32...	
sqlserver	Default	6		Active		Administrator@ap...	09/26/2013 02:07...	
puppet-test	DEV	1		Active		Administrator@ap...	09/17/2013 01:09...	

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

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Home Catalog Items Requests Inbox Advanced Services Administration Infrastructure

You are here: Home > Administration > Catalog Management > Entitlements

Edit Entitlement

Details **Items & Approvals**

*Name: sqlserver

Description:

Expiration Date:

*Status: Active

Last Updated By: Administrator@apdd.sh

Last Updated On: 09/26/2013 02:07 PM

*Users & Groups:

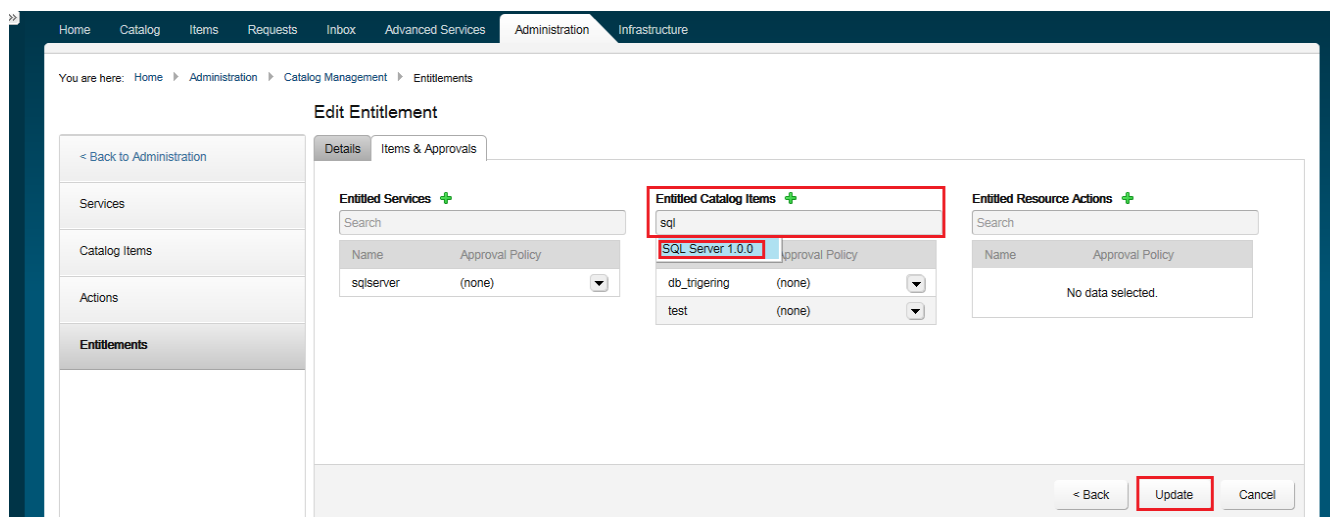
Search

Name

Administrator@apdd.sh

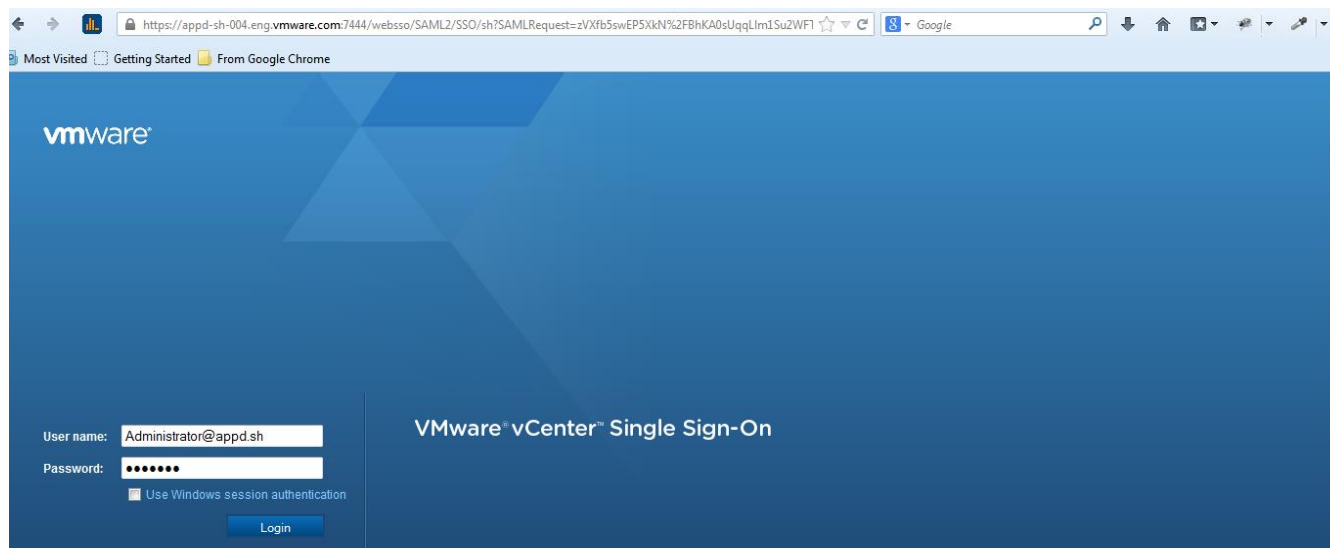
< Back Next > Update Cancel

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

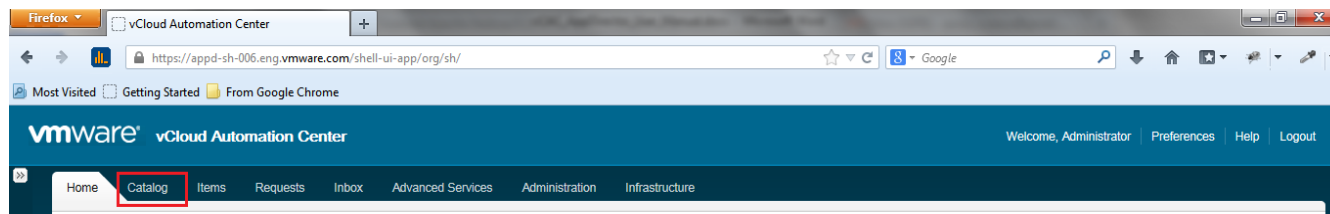


3.4 Request the Application as a Catalog Consumer

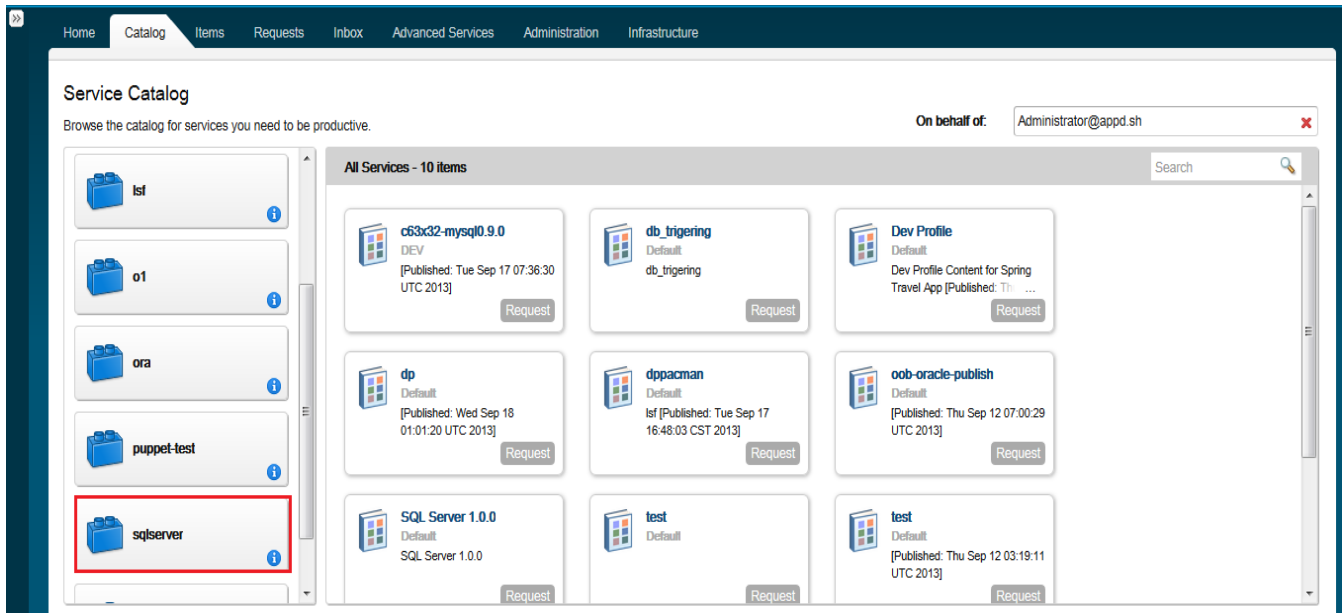
1. Log into vCAC Service Catalog (<https://appd-sh-006.eng.vmware.com/shell-ui-app/org/sh>) using SSO as a Catalog Consumer(Administrator@appd.sh/[ca\\$h0w1](#)



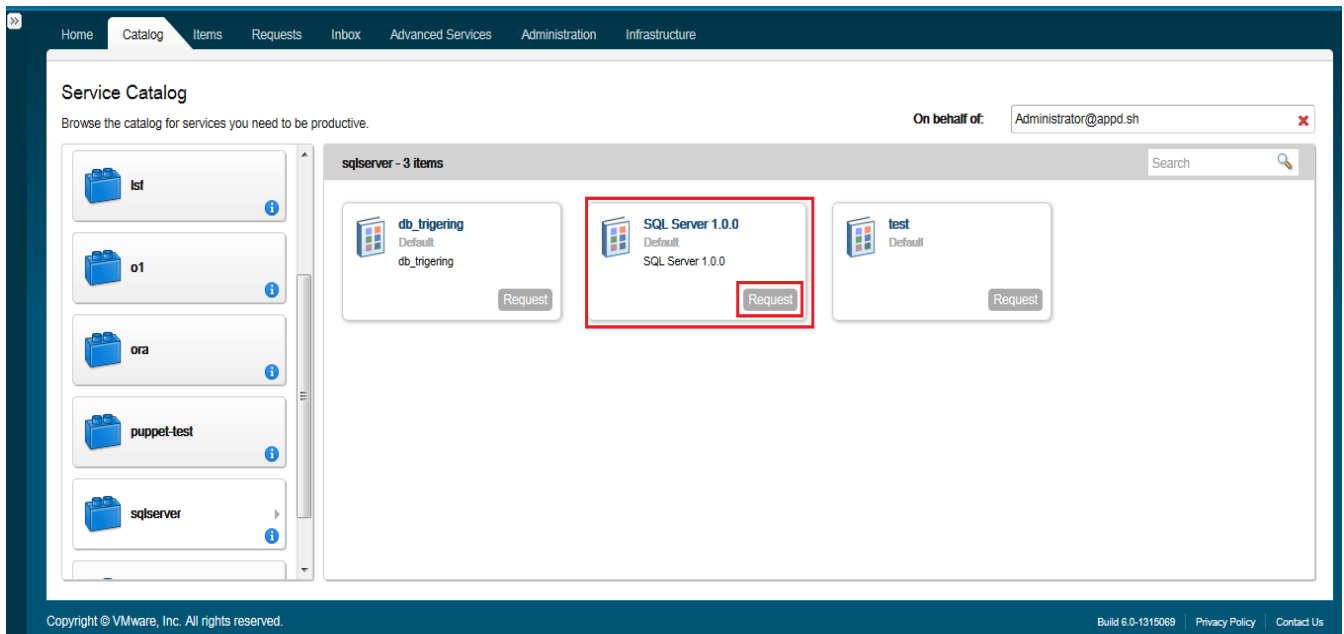
2. Click on the **Catalog** tab



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**.

Home Catalog Items Requests Inbox Advanced Services Administration Infrastructure

New Request

SQL Server 1.0.0
SQL Server 1.0.0

Request Information Properties

* Description: SQL Server 1.0.0

* Reasons: SQL Server 1.0.0

< Back Next > Save Cancel

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

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Home Catalog Items Requests Inbox Advanced Services Administration Infrastructure

New Request

SQL Server 1.0.0
SQL Server 1.0.0

Request Information Properties

Microsoft_SQL_Server_2012_Enterprise_Edition_v1.0

* MSSQL_SETUP_LOCATION: \\10.110.173.66\exchange\binary\sqlserver\2012\en_sql_server_2012_en

* MSSQL_SETUP_LOCATION_ACCESS_USER: csp

* MSSQL_SETUP_LOCATION_ACCESS_PASSWORD:

* INSTANCE_NAME: mssqldb

* SQL_SYSADMIN_ACCOUNTS: Administrator

* SA_PWD:

* RECOVERY_INTERVAL: 0

* USER_CONNECTIONS: 0

< Back Submit Save Cancel

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Home Catalog Items Requests Inbox Advanced Services Administration Infrastructure

Request

✓ The request has been submitted successfully.

OK

3.5 View the status of the application deployment

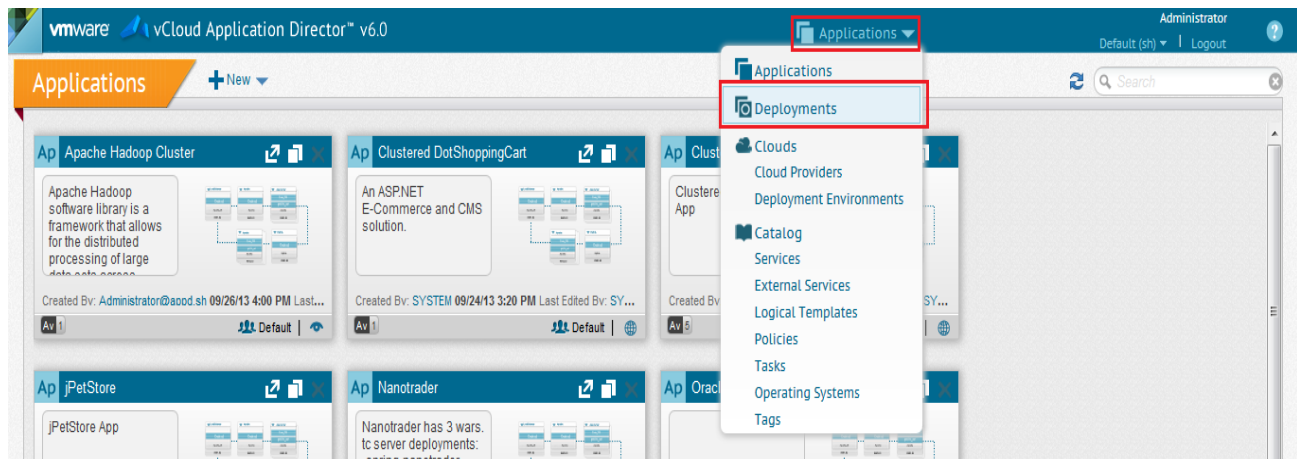
After completion of the deployment, we can check the status by following two methods

Method -1: From Application Director

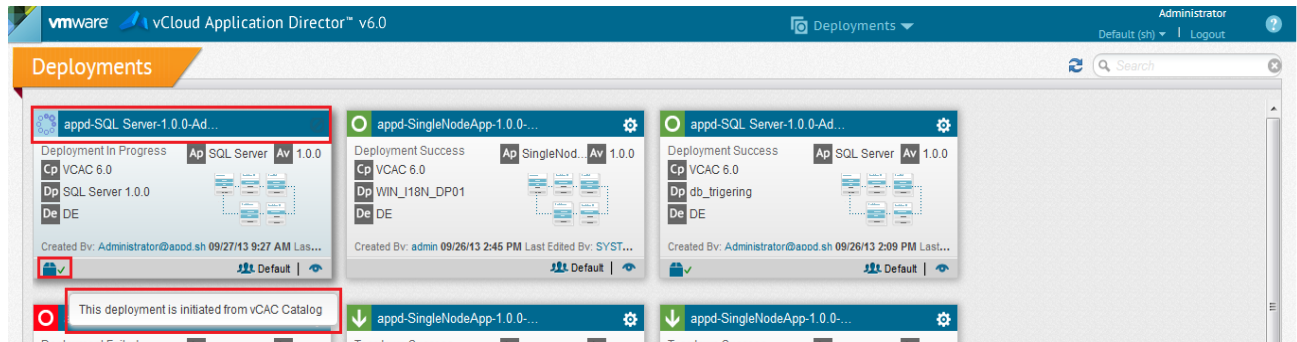
1. Login to the Application Director v6.0 <https://10.110.183.81:8443/darwin/> as [Administrator@appd.sh/ca\\$hc0w1](mailto:Administrator@appd.sh/ca$hc0w1).



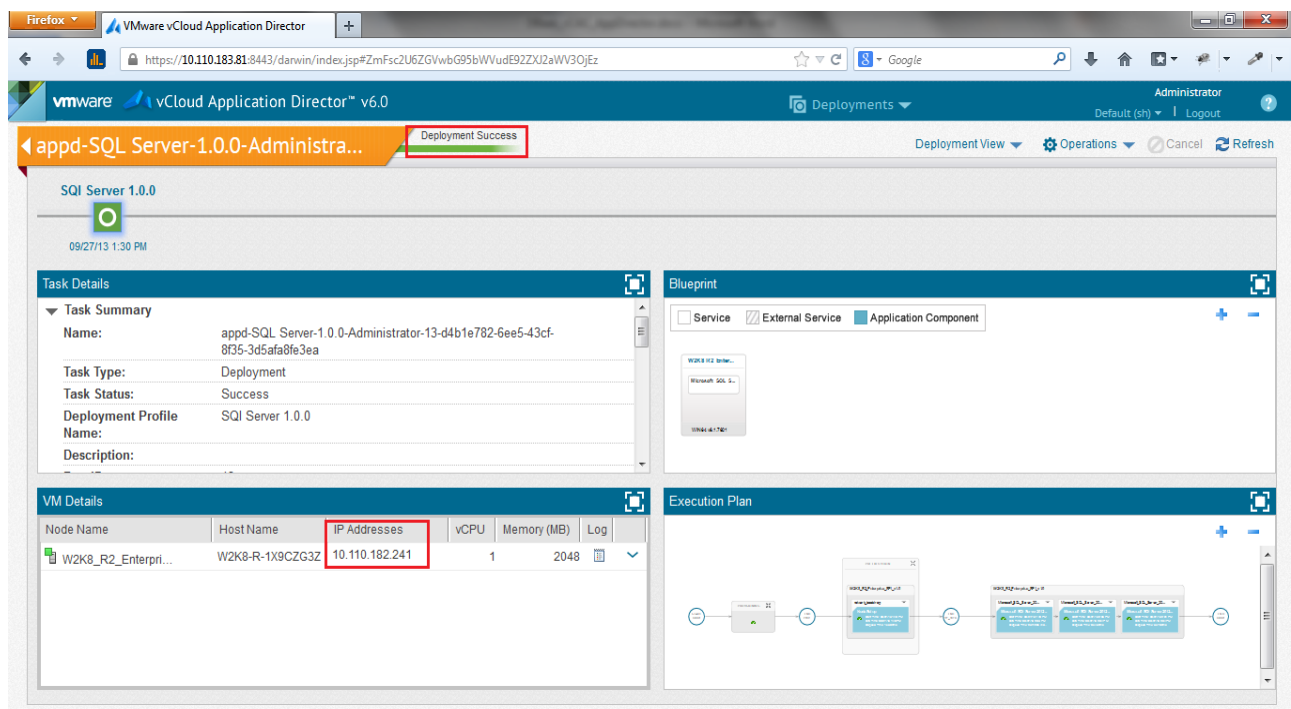
2. Review the deployment status from the Deployments page by selecting **Deployments** from the main menu.



3. Hover mouse on the below box to see where this deployment is initiated from. Click on this deployment

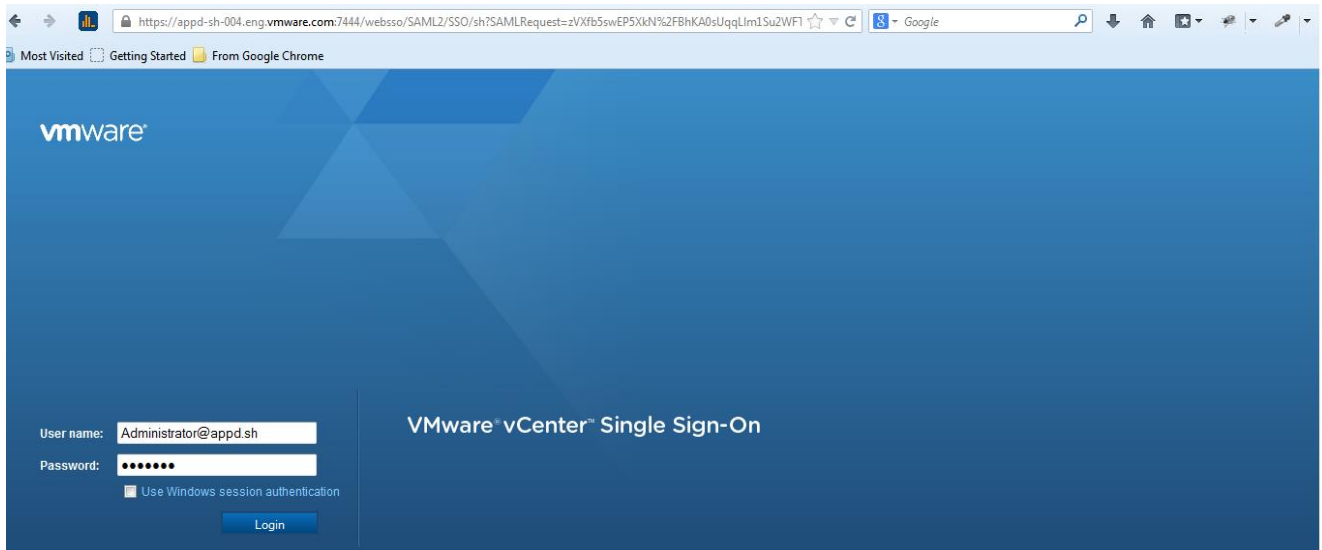


4. Check the success/failure of the deployment

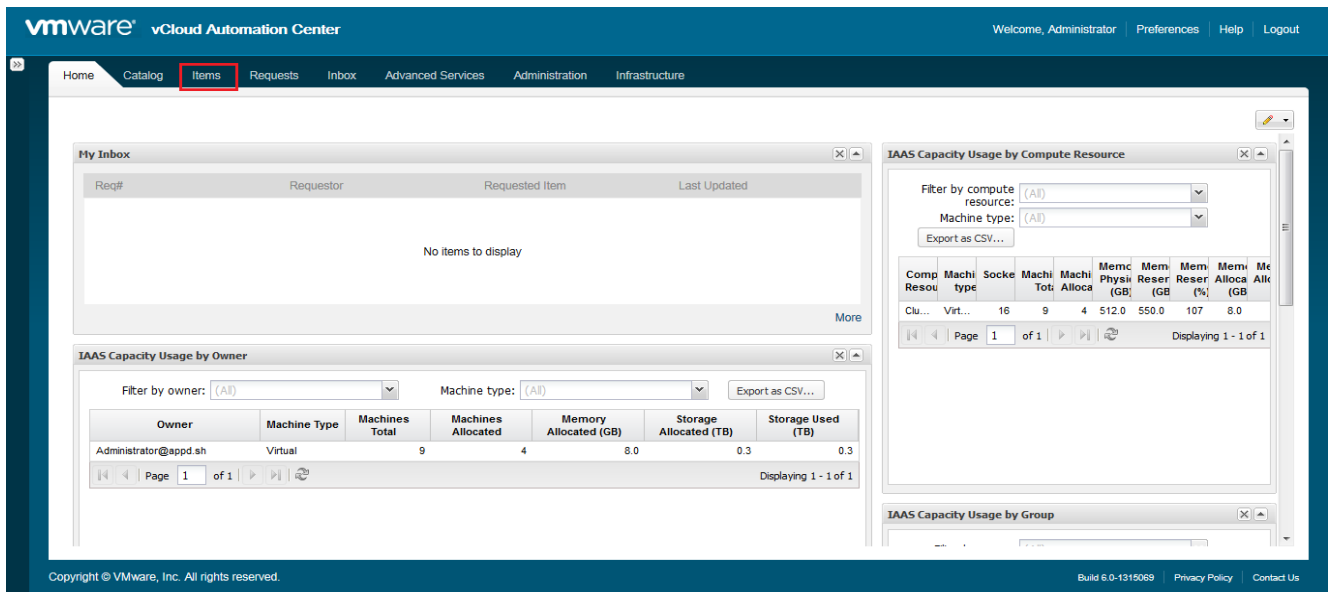


Method -2: From vCAC

1. Log into vCAC Service Catalog (<https://appd-sh-006.eng.vmware.com/shell-ui-app/org/sh>) using SSO as a Catalog Consumer([Administrator@appd.sh/ca\\$hc0w1](mailto:Administrator@appd.sh/ca$hc0w1))



2. Click on the **Items** tab



3. Select the appd-SQL_Server item

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Home Catalog Items Requests Inbox Advanced Services Administration Infrastructure

You are here: Home > Items > My Items

Owned by: Me

My Items

Select an item type from the menu on the left to view your provisioned items. Use the Actions menu to manage your items.

Item ID	Name	Created	Actions
appd-oob-oracle-publish-1.0.0-Administrator-13-925eac87-bf46-46ec-90df-ec430ea3425	oob-oracle-publish-oob-oracle-publish	09/12/2013 01:02 PM	
appd-oob-oracle-publish-1.0.0-Administrator-15-c9b2d8e9-37f6-471d-	oob-oracle-publish-oob-oracle-publish	09/12/2013 01:19 PM	
appd-oob-oracle-publish-1.0.0-Administrator-17-da38c18f-6865-4242-8288-62b20ff5e60c	oob-oracle-publish-oob-oracle-publish	09/12/2013 01:38 PM	
appd-oob-oracle-publish-1.0.0-Administrator-19-19861641-b334-427c-baf4-01495edf07f3	oob-oracle-publish-oob-oracle-publish	09/12/2013 02:01 PM	
appd-SH vCAC 6.0 Puppet Open Source-1.0.0-Administrator-9-fe08970b-16ff-495d-	SH vCAC 6.0 Puppet Open Source-c63x32-mysq...	09/17/2013 01:22 PM	
appd-pacmantest-1.0.0-Administrator-2-a706ee2b-67b6-4f8d-9b48-facd90098fda	pacmantest-dp	09/17/2013 02:57 PM	
appd-Oracle Test-1.0.0-Administrator-16-b5bba83-fb0a-4697-893c-7fde46c189f6	Oracle Test-dp	09/18/2013 07:01 AM	
appd-Oracle-1.0.0-Administrator-10-a4c59e1f-66ee-4fc2-8185-0e5742b7d78f	Oracle-testdb_oracle	09/26/2013 02:41 PM	
appd-SQL_Server-1.0.0-Administrator-13-d4b1e782-6ee5-43cf-8f35-3d5afa8fe3ea	SQL Server-SQL Server 1.0.0	09/27/2013 02:04 PM	

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4. Check the success/failure of the deployment.

vmware vCloud Automation Center

Welcome, Administrator | Preferences | Help | Logout

Home Catalog Items Requests Inbox Advanced Services Administration Infrastructure

You are here: Home > Items > Item Details

Item Details: appd-SQL Server-1.0.0-Administrator-13-d4b1e782-6ee5-43cf-8f35-3d5afa8fe3ea

Summary

Deployment Status: Deployment Success

Start Time: 09/27/2013 08:00 AM UTC

End Time: 09/27/2013 08:34 AM UTC

Application Details

Application Name: SQL Server

Description: / Insanifast

Owner: Administrator@appd.sh

Provisioned: 09/27/2013 02:04 PM

Type: Application

Actions: No actions available

< Back Next >

Close

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


vmware vCloud Automation Center

Welcome, Administrator | Preferences | Help | Logout

Home | Catalog | **Items** | Requests | Inbox | Advanced Services | Administration | Infrastructure

You are here: Home > Items > Item Details

Item Details: appd-SQL Server-1.0.0-Administrator-13-d4b1e782-6ee5-43cf-8f35-3d5afa8fe3ea



appd-SQL Server-1.0.0-Administrator-13-d4b1e782-6ee5-43cf-8f35-3d5afa8fe3ea
SQL Server-SQL Server 1.0.0

Owner
Administrator@appd.sh

Provisioned
09/27/2013 02:04 PM

Type
Application

Deployment Details | **VM Details**

Summary

Deployment Status: Deployment Success

Start Time: 09/27/2013 08:00 AM UTC

End Time: 09/27/2013 08:34 AM UTC

Application Details

Application Name: SQL Server

Description: *Unspecified*

< Back | Next >

Actions: No actions available

Close


vmware vCloud Automation Center

Welcome, Administrator | Preferences | Help | Logout

Home | Catalog | **Items** | Requests | Inbox | Advanced Services | Administration | Infrastructure

You are here: Home > Items > Item Details

Item Details: appd-SQL Server-1.0.0-Administrator-13-d4b1e782-6ee5-43cf-8f35-3d5afa8fe3ea



appd-SQL Server-1.0.0-Administrator-13-d4b1e782-6ee5-43cf-8f35-3d5afa8fe3ea
SQL Server-SQL Server 1.0.0

Owner
Administrator@appd.sh

Provisioned
09/27/2013 02:04 PM

Type
Application

Deployment Details | **VM Details**

Node Name	vCPU	Memory(MB)	Hostname	IP Address
W2K8_R2_Enterprise_SP1_v1.0	2048		W2K8-R-1X9CZG3Z	10.110.182.241

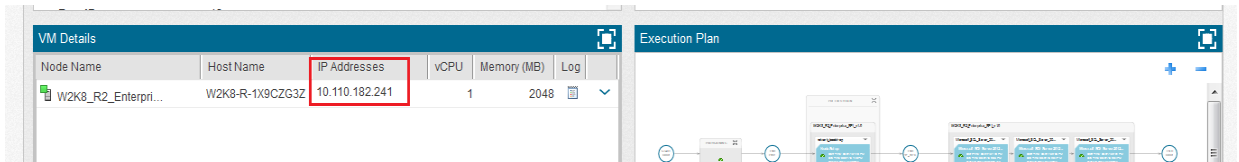
< Back

Actions: No actions available

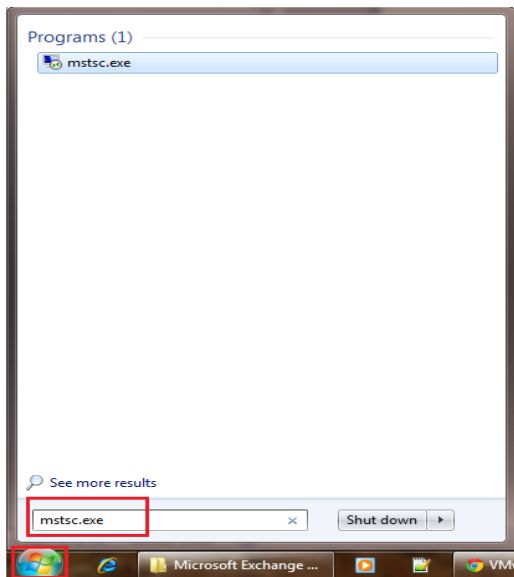
Close

3.6 Launching the Application

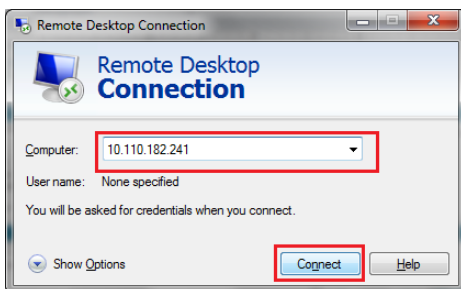
1. Click on the **VM Details** Page to get the IPs of the machines. We will need these IPs to launch the application



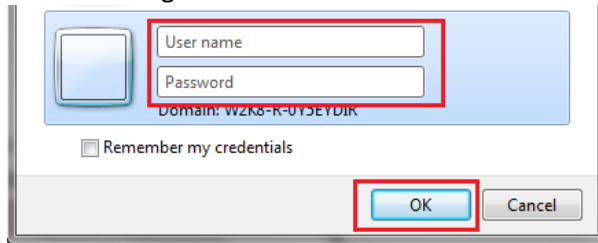
2. RDP into the created machine "10.110.182.241" as Start Menu -> Type mstsc.exe in the "Search programs and files" text box. Press ENTER key



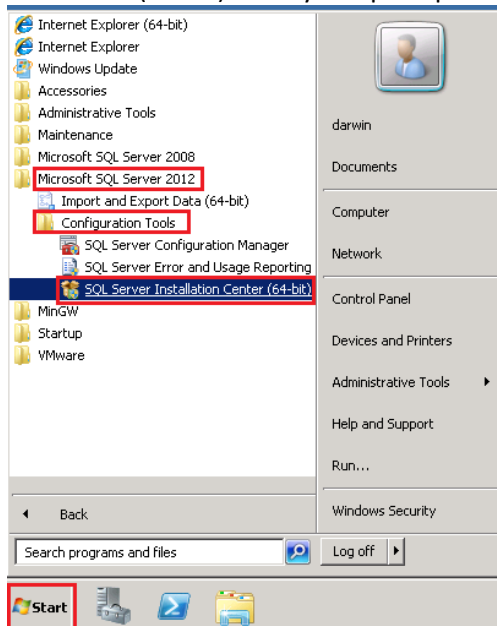
3. Now type machine's IP in the **Computer** Filed and click **Connect**



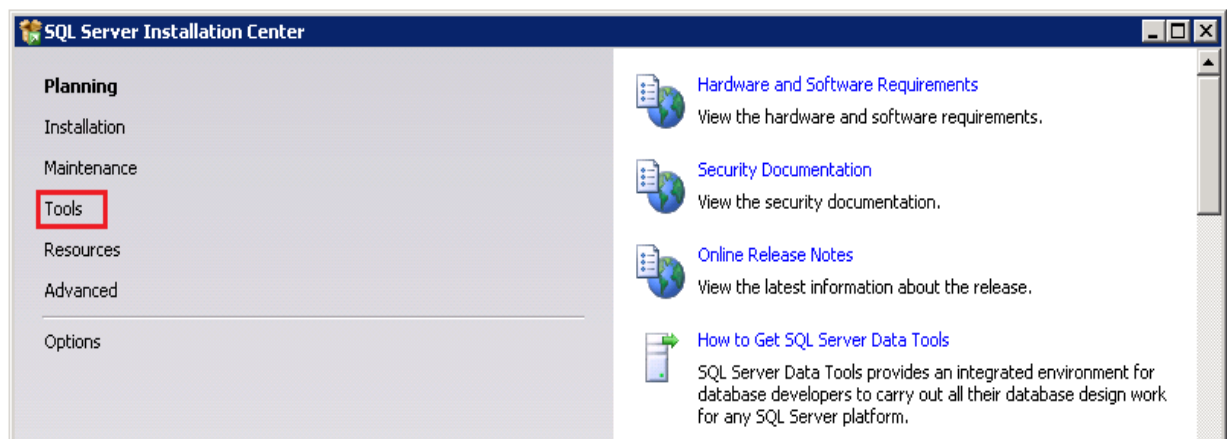
4. Now enter the system account credential
After entering the credential click OK button

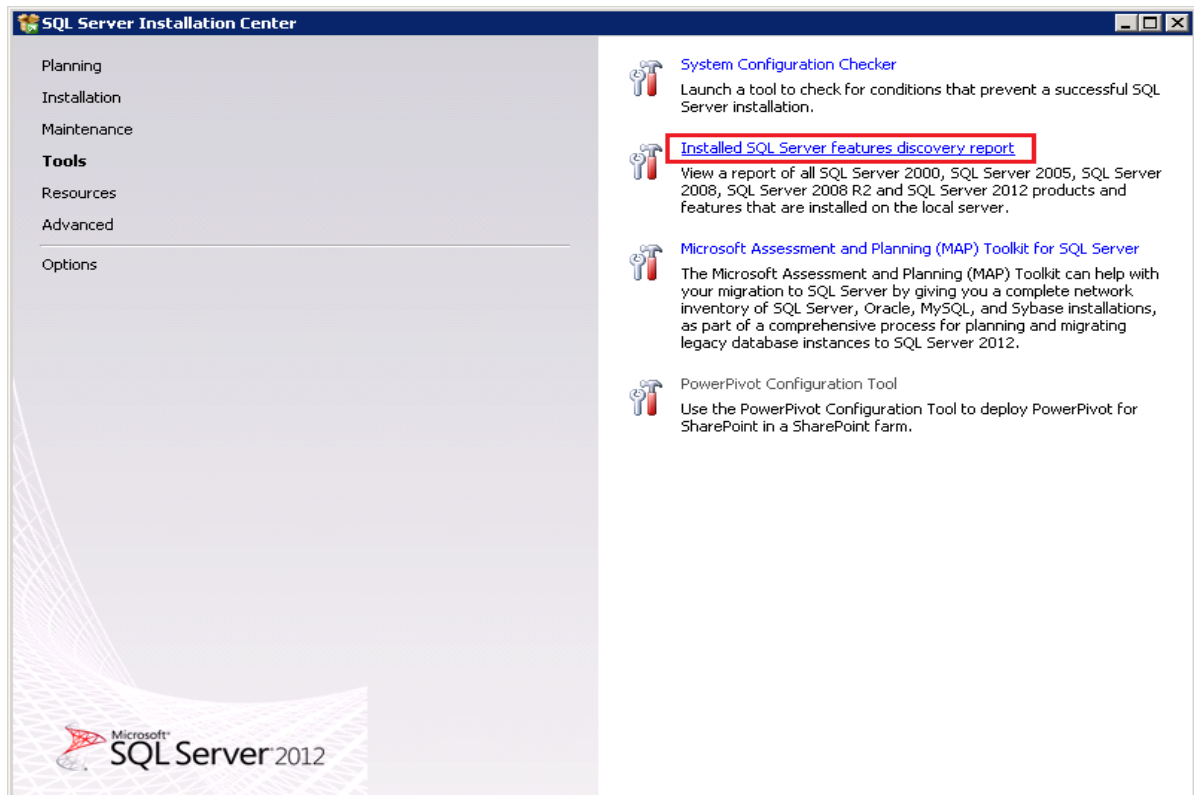


5. Now we are successfully logged into the machine
6. Click on Start Menu → All Programs → Microsoft SQL Server 2012 → Configuration Tools → SQL Server Installation Center (64-bit). Click yes if prompted.



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

Discovery Report for Microsoft SQL Server 2012 Setup - Windows Internet Explorer

C:\Program Files\Microsoft SQL Server\110\Setup Bootstrap\Log\20131001_

Discovery Report for Microsoft SQL Server 2012 Setup

Microsoft SQL Server 2012 Setup Discovery Report

Product	Instance	Instance ID	Feature	Language	Edition	Version	Clustered
Microsoft SQL Server 2012	MSSQLDB	MSSQL11.MSSQLDB	Database Engine Services	1033	Enterprise Edition	11.0.2100.60	No
Microsoft SQL Server 2012	MSSQLDB	MSSQL11.MSSQLDB	SQL Server Replication	1033	Enterprise Edition	11.0.2100.60	No
Microsoft SQL Server 2012	MSSQLDB	MSSQL11.MSSQLDB	Full-Text and Semantic Extractions for Search	1033	Enterprise Edition	11.0.2100.60	No

4. Summary

SQL Server service as a DB service utilizes industry's leading Cloud-enabled application provisioning solution, VMware vFabric Application Director 6.0 and Cloud-enabled self-service provisioning solution with integration of the VMware vCloud Automation Center 6.0.

5. Benefits

5.1 Single User Experience for Infrastructure, Desktop and Application Services

In addition to support for heterogeneous infrastructure, vCAC have now offered a single catalog for publishing and consuming application services. Users can now browse the same catalog to request and provision single or multi-node applications, just like they have for infrastructure and desktop services.

5.2 Application Deployment & Updates (formerly "Application Director")

1. **Request applications** from the Service Catalog and then the view overall deployment status
2. **Application Updates:** Ability to **rollback** failed updates to restore the business and to reduce the time to update an application, re-use of **update profiles** that store frequently used update scripts & properties, **promotion** of changes across Deployment Environments to facilitate Release Automation, and **scale-in** of clustered applications to save unused resources
3. **External Services:** Reduce time to deliver workload by connecting to an external or existing service such as a load balancer, an existing database with pre-configured schema, SaaS applications such as Salesforce, an LDAP server, an SSO server, etc.
4. **Policy-based Provisioning:** Enforce policies across the different deployment environments by blacklisting application services or enforcing mandatory services, facilitate policy-based provisioning by setting # of Total Instances (VM's) limits across all nodes in a deployment, Compliance View is showing policy violations against currently active and effective policies on deployments & application updates.

5.3 Extensible to any IT Service

In addition to out-of-the-box services, customers can now more easily extend vCAC to publish any kind of IT service to the common service catalog. Whether its **Storage-as-a-Service**, **Backup-as-a-Service**, or something as simple as letting users add capacity to their e-mail account, the new Advanced Service Designer lets service architects design rich user forms and provisioning workflows in a matter of minutes. And like pre-built services, custom services leverage the same entitlement and approval policy engines, enabling organizations to use a consistent governance layer.

5.4 Business Management for the Cloud

1. Provides visibility into the cost and usage of on-premise virtual infrastructure and public cloud infrastructure, including benchmarking capabilities
2. Supports "what-if" cost analysis to determine the best infrastructure type and placement options
3. Includes capacity, cost, and budget analysis capabilities for proactive planning

5.5 Improvements in Infrastructure as a Service

1. Support for OpenStack: in addition to vSphere, vCloud Director, Amazon, Hyper-V and various physical machines, vCAC now provides support for provisioning and post-provisioning operations on machines managed by OpenStack.
2. Log into vSphere machines from the service catalog: once a vSphere virtual machine is provisioned, a user can now access it via the VMware Remote Console.
3. Integration with vCloud Networking & Security (vCNS)

5.6 Improved Administration Capabilities

1. Support for LDAP services: in addition to Microsoft Active Directory, vCAC now provides support for LDAP based directory services.
2. Improvements in multi-tenancy: vCAC administrators can easily create multiple tenants with dedicated directory service(s), service catalog, portal branding, and approval policies
3. Improved compatibility with VMware Site Recovery Manager