

Module 6

Deploying and Configuring Access
to a Private Cloud

Module Overview

- Understanding Private Cloud Computing
- Installing and Configuring App Controller
- Creating and Managing Service Templates

Lesson 1: Understanding Private Cloud Computing

- Configuring Pooled Resources
- Configuring Cloud Capacity
- Configuring Cloud Capabilities
- Demonstration: Creating a Private Cloud in VMM

Configuring Pooled Resources

Characteristics of private cloud resources:

- Allocate physical resources from the host group or from the VMware resource pool
- Logical resources are built into the private cloud infrastructure
- each private cloud is dependent on hardware and software resources

Private cloud resources:

- Logical networks
- Load balancers
- VIP profiles
- Storage
- Library
- Capacity
- Capability profiles
- Locations for stored virtual machines

Configuring Cloud Capacity

By specifying private cloud capacity, you limit the resources that private cloud users can create or consume.

Quota types:

- Virtual CPUs
- Memory
- Storage
- Custom quota (points)
- Virtual machines

Configuring Cloud Capabilities

The capability profile defines which resources and which features are available to a virtual machine when you deploy it to a private cloud.

Capability profile properties:

- Hypervisor type
- Processor and memory range
- Microsoft Synthetic Video Adapter
- DVD drive range
- Shared image mode
- Bus configuration
- Network adapters
- Network optimization

Demonstration: Creating a Private Cloud in VMM

In this demonstration you will see how to create a private cloud in Virtual Machine Manager.

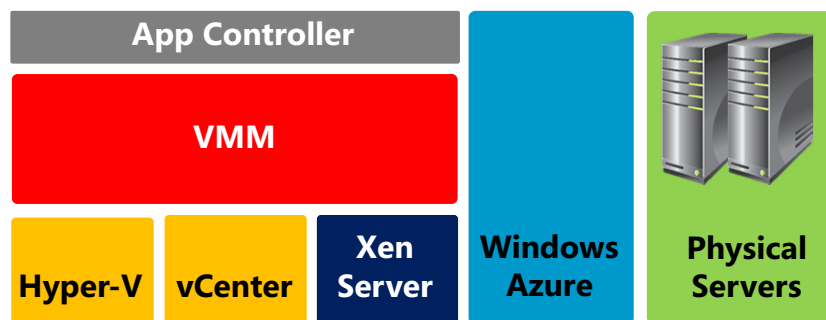
Lesson 2: Installing and Configuring App Controller

- Overview of App Controller
- Installing App Controller
- Connecting App Controller to VMM
- Connecting App Controller to Windows Azure and Hosting Service Providers
- Deploying and Managing Virtual Machines and Services with App Controller
- Configuring Hybrid Cloud Security

Overview of App Controller

App Controller is a self-service tool for end users that allows them to manage, deploy, and view both private and public cloud resources.

VMM application monitoring, management and automation.



Installing App Controller

App Controller is a web-based service with low hardware requirements

Software requirements:

- Windows Server 2008 R2 SP1 or Windows Server 2012
- .NET Framework 4.5
- SQL Server 2008 R2 or SQL Server 2012
- Web Server (IIS)
- VMM console

Considerations:

- Pay attention to configuring service accounts and SSL certificates
- Client needs Silverlight 5.0

Connecting App Controller to VMM

Considerations for connecting App Controller to VMM:

- App Controller must be connected to VMM or Windows Azure (or both)
- For VMM, you should provide the FQDN of VMM server
- For Windows Azure, you need a subscription ID and password
- Consider importing certificates from VMM
- Administrator privileges are required for establishing a connection

Connecting App Controller to Windows Azure and Hosting Service Providers

Once App Controller is connected to Windows Azure, you will be able to:

- Deploy a VM in Windows Azure to create a Cloud Service.
- Copy a VM from the VMM to Windows Azure.
- Start, Stop and Connect to a VM in Windows Azure.
- Add a VM to a Cloud Service in Windows Azure.
- Upload an Image or a VHD to Windows Azure from a network share or an SCVMM library.
- Use access-based user roles to comply with the IT Policies and Standards for Windows Azure resources.

Deploying and Managing Virtual Machines and Services with App Controller

- Add App Controller to intranet sites. App Controller is available at: <https://AppControllerServerFQDN/>

The screenshot displays the Microsoft System Center App Controller interface. The main view shows a list of Virtual Machines (4) with the following columns: Virtual Machine, Status, Cloud, Connection Name, CPU Usage, Memory, CPU Count, and Operating System. The table lists four VMs, all running on the 'Contoso Production' cloud and connected to 'Contoso Main VMM Server'. All are running 64-bit editions of Windows Server 2008 R2 Enterprise.

Virtual Machine	Status	Cloud	Connection Name	CPU Usage	Memory	CPU Count	Operating System
ConPSApp01.contoso.com	Running	Contoso Production	Contoso Main VMM Server	0 %	512	1	64-bit edition of Windows Server 2008 R2 Enterprise
ConPSQ01.contoso.com	Running	Contoso Production	Contoso Main VMM Server	0 %	512	1	64-bit edition of Windows Server 2008 R2 Enterprise
ConPSWeb01.contoso.com	Running	Contoso Production	Contoso Main VMM Server	0 %	512	1	64-bit edition of Windows Server 2008 R2 Enterprise
ConPSWeb02.contoso.com	Running	Contoso Production	Contoso Main VMM Server	0 %	512	1	64-bit edition of Windows Server 2008 R2 Enterprise

Below the table, the details for 'ConPSApp01.contoso.com' are shown:

- Status: Running
- Owner: CONTOSO\SAVAdmin
- Computer Name: ConPSApp01.contoso.com
- Operating system: 64-bit edition of Windows Server 2008 R2 Enterprise
- Processor: 3.60 GHz Xeon (2 MB L2 cache)
- CPU Count: 1
- Memory: 512 MB
- Dynamic Memory: False
- Logical Network: Contoso Prod Network

A network diagram on the right shows the VM connected to a 'Service Publishing Service' and other VMs in the network.

Configuring Hybrid Cloud Security

Configuring private cloud security considerations:

- User roles are key components for private cloud security
- Define the user roles scope
- Configure quotas on role or member level
- Use Actions to specify tasks that users can perform
- Each resource allows you to specify an owner

Lesson 3: Creating and Managing Service Templates

- What is a Service?
- What is a Service Template?
- Creating and Managing Services and Service Templates
- Creating a Deployment Configuration for Services
- Configuring Service Template Settings

What is a Service?

In terms of VMM clouds, a service is a set of one or more virtual machines that are deployed together and managed as a single entity

Service:

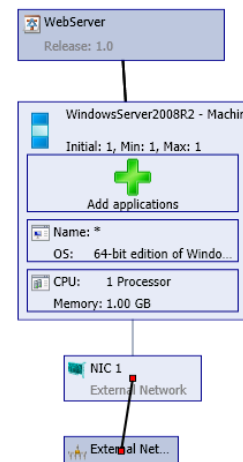
- Is deployed by an administrator or end-user
- Can contain several different components
- Can be deployed to a private cloud or to a host group

What is a Service Template?

A service template encapsulates all necessary components that are required to deploy and run a new instance of an application

Service template considerations:

- Administrator creates a service template in VMM
- Application owner deploys a service based on the service template
- App Controller or VMM Manager console can be used to deploy service based on template



Creating and Managing Services and Service Templates

Important things to know when creating service templates:

- Create service templates using Service Template Designer
- End users cannot create service templates
- Service templates can include one or more tiers
- Each tier can represent one or more virtual machines and applications
- Add network components such as load balancers and logical networks to service templates
- Use library resources to build service templates

Creating a Deployment Configuration for Services

When deploying a service, you must create service deployment configuration

Considerations for creating service deployment configuration:

- Deployment configuration validates a service template and chooses a host
- Deploy process is initiated from VMM console or App Controller (Self-Service Portal cannot be used)
- You can monitor service deployment progress from Jobs view and Event Viewer

Configuring Service Template Settings

Service template settings:

1. Name
2. Release
3. Dependencies
4. Access

The screenshot shows the 'WebServer Properties' dialog box with the 'General' tab selected. The left sidebar contains 'Service Settings', 'Dependencies', 'Custom Properties', and 'Access'. The main area displays the following information:

- Name: WebServer
- Description: Single Computer Tier Pattern
- Release: 1.0
- Status: OK
- Type: Service Template
- Priority: Normal
- Added: 1/19/2012 1:27 PM
- Modified: 1/19/2012 1:34 PM

A 'View Script' button is visible at the bottom left of the dialog.

Lab: Deploying and Configuring Accessing to a Hybrid Cloud

- Exercise 1: Creating and Configuring a Private Cloud
- Exercise 2: Configuring App Controller
- Exercise 3: Creating, Deploying and Managing Services

Logon Information

Virtual Machines: 20247D-LON-DC1, 20247D-LON-SQ1, 20247D-LON-VM1

User Name: Contoso\Administrator

Password: Pa\$\$w0rd

Estimated Time: 45 minutes

Lab Scenario

Contoso, Ltd requires that you are able to allocate various resources to users through a private cloud. Management wants users to be able to access this private cloud resource through a web console so that they can control specific services in the private cloud.

Lab Review

- What is the main purpose of App Controller?
- Can a user deploy new virtual machines by using App Controller?

Module Review and Takeaways

- Review Question(s)
- Real-world Issues and Scenarios
- Best Practice