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Overview of Solution

The Dell Hybrid Cloud System for Microsoft is the world’s first integrated hybrid cloud solution validated with Microsoft Cloud Platform System Standard that can go from zero to an operational hybrid cloud in a short period of time. Create an agile cloud system with integrated cloud management for private and public clouds that integrates:

- Scale-Ready Payment Solutions that allow you to tailor your cloud usage to your business needs with consumption-based pricing
- Azure and Azure Services for Backup, Site Recovery and Operational Insights to protect and control your cloud
- Automated, non-disruptive and dependency-aware updates that save time and improve IT responsiveness

DHCS, is an engineered solution from Dell and Microsoft providing Microsoft’s CPS platform on Dell hardware. DHCS is designed around Dell’s 13th generation of servers utilizing optimized modular infrastructure to support modern cloud workloads and expansion. DHCS uses Dell’s PowerEdge c6320 with Intel® Xeon® E5-2600 V4 processors paired with Dell’s Microsoft Storage Spaces solution and Dell Networking S4048-ON switches.

What is Cloud

Remember cloud is not just virtualisation, NIST define the difference between virtualisation and cloud as:

“On-premises Private Cloud has specific attributes that separate it from simple virtualized infrastructure and applications. That is the implementation of automation to enable Self-Service, Chargeback/Show-back (metering) and Elasticity”
What is Hybrid Cloud?

Hybrid cloud is a cloud computing environment which uses a mix of on-premises, private cloud and third-party, public cloud services with orchestration between the two platforms.

The Dell Hybrid Cloud Solution (DHCS) uses Windows Azure Pack to make it possible to very easily extend your data center functionality with Azure Services for Backup, Site Recovery, and Operational Insights. Control and management of Azure Services is fully supported in the Dell deployment and configuration console to streamline operations and administration.

Azure Site Recovery protects applications running in your datacenter with flexible recovery plans. Azure Backup is a scalable solution that protects application data and can retain your data for up to 99 years.
Types of Cloud Computing

Based upon the services offered, clouds are classified in the following ways:

<table>
<thead>
<tr>
<th>IaaS</th>
<th>PaaS</th>
<th>SaaS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applications</td>
<td>Applications</td>
<td>Applications</td>
</tr>
<tr>
<td>Data</td>
<td>Data</td>
<td>Data</td>
</tr>
<tr>
<td>Runtime</td>
<td>Runtime</td>
<td>Runtime</td>
</tr>
<tr>
<td>Middleware</td>
<td>Middleware</td>
<td>Middleware</td>
</tr>
<tr>
<td>OS</td>
<td>OS</td>
<td>OS</td>
</tr>
<tr>
<td>Virtualization</td>
<td>Virtualization</td>
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</tr>
<tr>
<td>Network</td>
<td>Network</td>
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</tr>
<tr>
<td>Server</td>
<td>Server</td>
<td>Server</td>
</tr>
<tr>
<td>Storage</td>
<td>Storage</td>
<td>Storage</td>
</tr>
</tbody>
</table>

Software as a Service (SaaS)

SaaS uses the web to deliver applications that are managed by a third-party vendor and whose interface is accessed on the clients’ side. Most SaaS applications can be run directly from a web browser without any downloads or installations required, although some require plugins.

Because of the web delivery model, SaaS eliminates the need to install and run applications on individual computers. With SaaS, it’s easy for enterprises to streamline their maintenance and support, because everything can be managed by vendors: applications, runtime, data, middleware, OSes, virtualization, servers, storage and networking.

Popular SaaS offering types include email and collaboration, customer relationship management, and healthcare-related applications.
Platform as a Service (PaaS)

PaaS is used for applications, and other development that provides cloud components to software. What developers gain with PaaS is a framework they can build upon to develop or customize applications. PaaS makes the development, testing, and deployment of applications quick, simple, and cost-effective. With this technology, enterprise operations, or a third-party provider, can manage OSes, virtualization, servers, storage, networking, and the PaaS software itself. Developers, however, manage the applications.

IaaS: Infrastructure as a Service

Cloud infrastructure services, known as Infrastructure as a Service (IaaS), are self-service models for accessing, monitoring, and managing remote datacenter infrastructures, such as compute (virtualized or bare metal), storage, networking, and networking services (e.g. firewalls). Instead of having to purchase hardware outright, users can purchase IaaS based on consumption, similar to electricity or other utility billing.

Compared to SaaS and PaaS, IaaS users are responsible for managing applications, data, runtime, middleware, and OSes. Providers still manage virtualization, servers, hard drives, storage, and networking.

Use Cases

DHCS is primarily aimed customer who require IaaS or simple PaaS based on for example Database as a service.

Enterprise IT

- IaaS: VM or Application delivery as a Service
- PaaS\Applications : SQL\MySQL, Websites
- Departmental Clouds
- Dev-Test
- Multi-Cloud Integration metering and governance

Service Providers

- Hybrid Cloud : Azure integration
- Hosted Private Cloud : IaaS, PaaS (SQL\MySQL)
- Hosted Applications : DBaaS (SQL, MYSQL)
**System components of DHCS and scaling**

Compute Scale Unit (4-16 x Hyper-V hosts)
- Dell PowerEdge C6320 - 4 Compute Nodes per 2U
  - Dual socket Intel Haswell (2x E5-2630 v4 8C) or (2 x2660 v4 10C)
  - 128 or 256 GB memory
  - 2 x Intel 82599ES (Niantic), dual port, 10GbE, SFP+
  - 2 x 600GB 10k SAS HDD (boot/paging)
  - Maximum of 320 core in a 4 block/16 server DHCS solution

2,3 or 4 JBOD options
- HDDs - 1.2TB ,2TB, 4TB
- SSD’s - 400GB or 800GB

Tiering options (SSD:HDD ratio)
- 4:8 or 2:10 for the MD1400
- 8:16 or 4:20 for the MD1420

2 file servers
- 96GB memory
- 1 storage pool and 1 file share for management

Virtual Machines
- 100-400 Virtual Machines based on (2vCPU, 1.75GB Ram, 50Gb Disk)
Maximum Storage configuration

Maximum Storage configuration (2:10 ration 800 GB SSD : 4TB HDD):

4xMD1400

Maximum IOPS configuration

Maximum IOPS configuration (8:16 ration 800 GB SSD : 1.2GB HDD):

3xMD1420
Software Components of DHCS

Microsoft Azure Nomenclature

Lots of customers when scoping Microsoft Cloud solutions are talking about their requirements in terms of the standard Azure VM templates (A, D, DS, F, Fs, G, and GS).

The majority of VM sizing requests for the DHCS solution will be based on the Azure A or D templates. But remember the A0 size is over-subscribed on the physical hardware in Azure by about 15%.
D-series VMs are designed to run applications that demand higher compute power and temporary disk performance. D-series VMs provide faster processors, a higher memory-to-core ratio, and a solid-state drive (SSD) for the temporary disk.

<table>
<thead>
<tr>
<th>Size</th>
<th>CPU cores</th>
<th>Memory</th>
<th>NICs (Max)</th>
<th>Max. disk size</th>
<th>Max. data disks (1023 GB each)</th>
<th>Max. IOPS (500 per disk)</th>
<th>Max network bandwidth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard_A0</td>
<td>1</td>
<td>768 MB</td>
<td>1</td>
<td>Temporary = 20 GB</td>
<td>1</td>
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<td>Standard_A1</td>
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<td>1</td>
<td>Temporary = 70 GB</td>
<td>2</td>
<td>2x500</td>
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<td>Standard_A2</td>
<td>2</td>
<td>3.5 GB</td>
<td>1</td>
<td>Temporary = 135 GB</td>
<td>4</td>
<td>4x500</td>
<td>moderate</td>
</tr>
<tr>
<td>Standard_A3</td>
<td>4</td>
<td>7 GB</td>
<td>2</td>
<td>Temporary = 285 GB</td>
<td>8</td>
<td>8x500</td>
<td>high</td>
</tr>
<tr>
<td>Standard_A4</td>
<td>8</td>
<td>14 GB</td>
<td>4</td>
<td>Temporary = 605 GB</td>
<td>16</td>
<td>16x500</td>
<td>high</td>
</tr>
<tr>
<td>Standard_A5</td>
<td>2</td>
<td>14 GB</td>
<td>1</td>
<td>Temporary = 135 GB</td>
<td>4</td>
<td>4X500</td>
<td>moderate</td>
</tr>
<tr>
<td>Standard_A6</td>
<td>4</td>
<td>28 GB</td>
<td>2</td>
<td>Temporary = 285 GB</td>
<td>8</td>
<td>8x500</td>
<td>high</td>
</tr>
<tr>
<td>Standard_A7</td>
<td>8</td>
<td>56 GB</td>
<td>4</td>
<td>Temporary = 605 GB</td>
<td>16</td>
<td>16x500</td>
<td>high</td>
</tr>
<tr>
<td>Standard_A8</td>
<td>8</td>
<td>56 GB</td>
<td>2</td>
<td>Temporary = 382 GB</td>
<td>16</td>
<td>16x500</td>
<td>high</td>
</tr>
<tr>
<td>Standard_A9</td>
<td>16</td>
<td>112 GB</td>
<td>4</td>
<td>Temporary = 382 GB</td>
<td>16</td>
<td>16x500</td>
<td>very high</td>
</tr>
<tr>
<td>Standard_A10</td>
<td>8</td>
<td>56 GB</td>
<td>2</td>
<td>Temporary = 382 GB</td>
<td>16</td>
<td>16x500</td>
<td>High</td>
</tr>
<tr>
<td>Standard_A11</td>
<td>16</td>
<td>112 GB</td>
<td>4</td>
<td>Temporary = 382 GB</td>
<td>16</td>
<td>16x500</td>
<td>very high</td>
</tr>
<tr>
<td>Size</td>
<td>CPU cores</td>
<td>Memory</td>
<td>NICs</td>
<td>Max. disk size</td>
<td>Max. data disks (1023 GB each)</td>
<td>Max. IOPS (500 per disk)</td>
<td>Max network bandwidth</td>
</tr>
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<td>------</td>
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<td>--------------------------------</td>
<td>--------------------------</td>
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<td>7 GB</td>
<td>2</td>
<td>Temporary(SSD)=100 GB</td>
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<td>high</td>
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<td>14 GB</td>
<td>4</td>
<td>Temporary(SSD)=200 GB</td>
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<td>Temporary(SSD)=400 GB</td>
<td>16</td>
<td>16x500</td>
<td>high</td>
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<tr>
<td>Standard_D11</td>
<td>2</td>
<td>14 GB</td>
<td>2</td>
<td>Temporary(SSD)=100 GB</td>
<td>4</td>
<td>4x500</td>
<td>high</td>
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<tr>
<td>Standard_D12</td>
<td>4</td>
<td>28 GB</td>
<td>4</td>
<td>Temporary(SSD)=200 GB</td>
<td>8</td>
<td>8x500</td>
<td>high</td>
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<td>Standard_D13</td>
<td>8</td>
<td>56 GB</td>
<td>8</td>
<td>Temporary(SSD)=400 GB</td>
<td>16</td>
<td>16x500</td>
<td>high</td>
</tr>
<tr>
<td>Standard_D14</td>
<td>16</td>
<td>112 GB</td>
<td>8</td>
<td>Temporary(SSD)=800 GB</td>
<td>32</td>
<td>32x500</td>
<td>very high</td>
</tr>
</tbody>
</table>

https://azure.microsoft.com/en-gb/documentation/articles/virtual-machines-windows-sizes/

**Customer Order Flow**

The DHCS solution is shipped to the customer’s site pre-racked, cabled and pre-configured with all the software require for the automated installation. The goal is to minimise the amount of time required to get the customer up and running.
Demonstration Labs

1.0.1 - Introduction

Overview of Solution

Dell Hybrid Cloud System, DHCS, is an engineered solution from Dell and Microsoft providing Microsoft’s CPS platform on Dell hardware. DHCS is designed around Dell’s 13th generation of servers utilizing optimized modular infrastructure to support modern cloud workloads and expansion. DHCS uses Dell’s PowerEdge c6320 with Intel® Xeon® E5-2600 V4 processors paired with Dell’s Microsoft Storage Spaces solution and Dell Networking S4048-ON switches.

Overview of Demo

This document provides details on HOW to deliver an effective live demonstration of DHCS to customers.

In this demo you will perform the following tasks;

- Review Windows Azure Pack Tenant Portal (Ease of Use and Navigation)
- Deploy a virtual machine from the tenant portal gallery
- Review Windows Azure Pack Admin Portal (Ease of Use and Navigation)
- Add additional resources to a tenant plan
- Launch an App (IIS webpage)
- Verify deployment by logging in to the deployed virtual machine

Additional Notes

If you are using the simulator to complete this guide, you may have different content in menus and some limited functionality; however, it should be possible to complete all of the steps in this guide.

It is not necessary to complete 1.2.0, Clean Up, if you are using the simulator.
1.0.2 - Preparing the Demo Environment

It is in your best interests to ensure the demo environment you will be demonstrating is clean & tidy before you begin. For this reason we would recommend, where possible, you log in to your demo at least 15mins prior to delivery and check the following:

- Familiarise yourself with the environment during this time and check any specific features you are expecting to demo.
- Most importantly, be crystal clear with yourself on what it is you plan to show. A full demo of every feature described below (with questions) can take several hours. If you only have a short time slot be sure to focus on the key points that address the customer’s pain points and will drive value home to them.
- Ensure that you have booked the demo for sufficient time so as not to have the demo end before you are finished with the customer.

- Log in to the admin portal to verify the demo user, demouser@demos.dell.com, is created and subscribed to the plan, TenantPlan.

- Log in to the tenant portal to verify that the tenant portal contains the correct templates, and the username and password are correct. Use credentials:
  - Username: demouser@demos.dell.com
  - Password: Password01
• The standalone virtual machine gallery should contain at least A2_Full
- Verify that there is no **Web Resource (IIS) Virtual Machine Role gallery item:**
- Check to ensure that the tenant login has no resources created.

**5.0.3 - Preparing your agenda for the demonstration**

You should have an understanding of the customer’s anticipated business need and their growth expectations prior to scheduling a demo. You should also tailor each demo to illustrate the deployment, configuration and/or reconfiguration of the type of workload the customer intends to use.

Before scheduling a demo, you must decide how you will articulate the product features, workloads and business and technical value. Work with your customer through question and answer sessions to decide which features and capabilities you will focus on to be most effective.

The idea is not to present a “How-To” session, but to focus on the value of the product and/or solution. Even if the customer representative is not overly technical, you can demonstrate what the product does and how that can benefit the customer.

**You should have a good understanding of the customer’s current infrastructure:**

- Datacenter/Remote office needs
- Operating Systems & Key Applications (Database types etc.)
- Server, Network and Storage Platforms
- Reporting/Management Tools
1.0.4 - Pre-Demo - Introducing the customer to the demo

Your introduction will be based on what you know of the customer, their infrastructure, needs, and plans for development. The following is a suggested set of items to cover before you demonstrate the features and benefits of DHCS:

- **Understand Customer’s Desired infrastructure ‘Wins’**
  - Ease of management
  - Automation and orchestration of workload provisioning
  - Virtual infrastructure deployment
  - Hybrid cloud capabilities

- **Review Assessment data**
  - Discuss customer’s requirements
  - Application and Storage requirements
  - Demonstrate understanding of customer’s business as it relates to their data requirements
  - …add relevant areas of interest to the customer or based on the demo solution

- **Dell Hybrid Cloud System Overview**
  - Explain the key features and benefits of the DHCS Solution
  - Give an overview of deployment options
  - Discuss Dell’s POV

- **Services - Consulting, Delivery & Technical Support**
  - Explain the roles of Consulting, Service Delivery/Deployment & Technical Support in successful deployments of the DHCS.

- **Pre-Demo points to cover**
  - Ensure that you understand who you are presenting to and how the benefits of the system will enable them to ‘win’ in their roles.
1.0.5 - Set the Scene

It can be easy to forget that the customer has no idea what it is they are looking at, so take some time emphasizing the following;

- Explain that the purpose is to demonstrate the benefits and key features, not to provide a “How To” session
- Explain that the demo will be either a simulation or a connection to a remote lab, where a combination of virtual machines and physical hardware will be used to provide a live demonstration of the features and capabilities that will be covered
- Set up and current configuration information
- Connectivity methods that you will be using (HTTP)
- Introduce the web portal interfaces you plan to use (Windows Azure Pack Web UI)

1.1 - Introduction/Customer Challenge

This demonstration is primarily aimed at the CIO/CFO level and IT management staff, it also provides a useful quick introduction for staff who are not familiar with DHCS.

**Duration: Estimated 5-10 minutes**

Provisioning any production IT infrastructure from bare-metal to fully-functional infrastructure is a complex task that typically requires a high-level technical resource operating full-time for an extended period of time.

This is a technical demo (but not a technically-detailed installation) that illustrates how DHCS can significantly reduce the workload on this type of technical IT resource. The demo is compelling in terms of demonstrating the productivity and management benefits of the DHCS.

In this demo you will be performing the following tasks:

- Setting the scene for the customer
- Overview or list the tasks performed within this lab
- Logon to the Windows Azure Pack tenant portal
- Review the available resource providers
- Launch a standalone virtual machine
1.1.2 - Business Talking Points:

- Explain the current system configuration in terms of:
  - Compute and Storage capabilities
  - Web portal and API resource management
- Explain the value of self service, including faster turnaround on IT request. Possibly moving from days to hours to stand up infrastructure for business units.
- Talk about the value of using tenant plans with security policies to define resource allocation ahead of time.
- Explain the value of using Virtual Machine Gallery items to deploy workloads instead of raw infrastructure.

1.1.3 - Technical Selling Points:

- Ease of use is the key point here with the Web portal and API for administration and usage of resources.

Gotchas:

- Actual virtual machine deployment may take an extended amount of time. In order to allow the virtual machine to fully deploy please do the labs in order and complete Vlab #4, Verifying the Virtual Machine Deployment, as the last step. If your customer does not have time for the complete lab, you may opt to utilize a Linux gallery item if one is available. These should be smaller and deploy quickly.
- Virtual Machine Role Gallery Items are not made available by default in DHCS. Roles such as “Web Resource (IIS)” must be imported from the Web Platform Installer or created by the customer.

1.1.5 - LAB 1 - DHCS Windows Azure Pack Tenant Portal

You can, and should, give this level of demo in 5 to 10 minutes. You want the customer to think “Wow that was easy”! If you frame the discussion correctly during the demo, you will get the desired reaction.

Once you have successfully started your scheduled demonstration within the environment please conduct the following:

On the taskbar double click the Internet Explorer icon, and go to the Azure Pack Tenant bookmark and use the following credentials to log in as a tenant:

- User Name: demouser@demos.dell.com
- Password: Password01
This will bring up the Azure Pack Tenant Web Portal:
This screen will show what has been created by the current user under this plan. For this guide, there shouldn’t be any resources shown. However, this is where deployed virtual machines, gallery items, databases, etc. would be listed.

The pane on the left shows the resource providers that are a part of this plan. As deployed DHCS only enables Infrastructure as a Service, or IaaS, resource providers such as the Virtual Machine Cloud that we see in this demo.

Talking Points:

- Explain how the Windows Azure Pack web portal has two facades, admin and tenant. Show them that this tenant portal is what a consumer of resources will see when they log in.
- Talk with the customer about resource providers and explain what is possible with DHCS.
- Explain IaaS and how DHCS is primarily an IaaS platform to support the automated creation of virtual resources.
Click on **New** on the bottom left of the menu to open the resource creation menu.

Here you will see options to create resources from the resource providers associated with this plan.
Select **Standalone Virtual Machine** to bring up the virtual machine deployment menu and then select **From Gallery**

![Virtual Machine Deployment Menu](image1)

This will bring up the standalone virtual machine gallery:

![Virtual Machine Gallery](image2)

Scroll through and observe the available templates.
Talking Points:

- Point out the similarity in naming and sizing vs. public azure.
- These are traditional templates from System Center Virtual Machine Manager. You can create new ones, or import existing templates you may already have.
- All applications and updates are embedded in the template to create a “Golden Image” This is different than Gallery Items.

Select A2_Full and click the next arrow to start the deployment wizard:

The wizard will walk you through the required information to deploy this Windows Server 2012 R2Datacenter virtual machine. On the first page, create a name for the instance and a password for the Administrator account. We will leave the Product Key blank, but we could inject it here for production deployments.
For this demo use:

- Name: Demo
- Password: Password01
Click the next arrow to continue through the wizard. On the next screen we will select the **Tenant - VLAN 80** network to deploy this on:

Talking Points:

- Tenant VLANs are created by the administrator by a runbook and on the switch. The administrator can pick which VLANs are available in a plan.
- Customers looking for multi-tenancy often are looking for the ability to isolate a plan or user to specific VLAN, and this is possible with DHCS.

Gotchas:

- Network virtualization via NVGRE is not available with DHCS as deployed. This is a major difference in CPS-P vs. CPS-S. Although enabling it is possible it creates many difficulties with solution management, such as maintaining consistency for patch and update.
Next click the checkmark to start the deployment:

![Deployment Checkmark]

Notes:

- Clean-up should be completed after the entire demo has been completed and is described in Vlab #4. If you intend to complete Vlab #4, Verifying the Virtual Machine Deployment, do not stop or delete the virtual machine at this point.

1.1.6 - LAB 2 - DHCS Windows Azure Pack Admin Portal

You can, and should, give this level of demo in 10 to 15 minutes. You want the customer to think “Wow that was easy”! If you frame the discussion correctly during the demo, you will get the desired reaction.

Once you have successfully started your scheduled demonstration within the environment please conduct the following;

In this lab we will examine the Admin Portal by adding a resource to an existing tenant plan. This will show one aspect of administration for DHCS.

On the taskbar double click the Internet Explorer icon, go to the Azure Pack Admin bookmark, and open up the admin portal:

If prompted use credentials:
  - Username: demouser
  - Password: Password
This will bring up the Azure Pack Admin Portal.

The pane on the left shows all available resource providers in this environment with the recent items listed in the main pane.

Talking Points:

- DHCS is deployed with Windows Azure Pack on top of a System Center Virtual Machine Manager Cloud, however, Windows Azure Pack can be utilized to interface with other resources and applications either inside of the DHCS stamp or external via resource providers.

- Resource providers can manage IaaS resources, such as the virtual machine cloud with DHCS, or can manage Platform as a Service, PaaS, resources such as “SQL Servers” and MySQL Server”

- Windows Azure Pack is both the web portal shown and a Restful API to allow integration within scripts and applications for infrastructure as code deployments.
Click on **PLANS** on the left menu to show all current plans:

For this demo there will at least be **TenantPlan**. We will add a Virtual Machine Role Gallery item to this plan.

Talking Points:

- Tenant Plans define what resources a tenant will have access to. This is how resource usage is managed in DHCS.
- An example usage of a tenant plan would be to create a tenant plan for a line of business such as Marketing, giving them access to a web resource to host a web site they own.
Next we will click on the **TenantPlan** name:
This will bring up the plan properties:

![Image of plan properties](image)

Scroll through the plan properties and notice the graph displaying number of subscriptions as well as the plan services and add-ons:

### plan services

<table>
<thead>
<tr>
<th>NAME</th>
<th>STATUS</th>
<th>STATE</th>
<th>INSTANCE NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virtual Machine Clouds</td>
<td>✓ Active</td>
<td>Configured</td>
<td>Virtual Machine Clouds</td>
</tr>
</tbody>
</table>

### add-ons

<table>
<thead>
<tr>
<th>NAME</th>
<th>STATUS</th>
<th>STATE</th>
<th>SUBSCRIPTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRAddOn</td>
<td>✓ Public</td>
<td>Configured</td>
<td>0</td>
</tr>
</tbody>
</table>

For this plan we will only have the Virtual Machine Cloud service added.
Talking Points:

- This service is deployed with DHCS and is available from day 1. Other examples of services include database as a service and website clouds.
- If DPM is included in the solution there will be an add-on available to enable DR for the tenant virtual machines.

Next click on the **Virtual Machine Clouds** service:

This will bring up the configuration page, for this plan, associated with the resources in the virtual machine cloud:

Observe the connection to the vmm management server provided by DHCS as well as the limits and control available through the plan.
Scroll down and note the different areas; usage limits, networks, hardware profiles, templates, gallery, additional settings, and custom settings.

Talking Points:

- Describe how tenants can create resources on demand with self-service, but the tenant plan will define what they have access to.

In the **gallery** section select **Add gallery items**

This will bring up the list of all gallery items that have been imported into DHCS. This will at least contain **Web Server (IIS)** for this demo.

Talking Points:

- Gallery Items are different than templates in that they are configured at deployment instead of at creation. Applications and updates are installed based on a defined configuration.
- Gallery Items can be either created or downloaded from Windows Platform Installer, WPI.
WPI contains many popular workloads on both Windows and Linux. In addition to the Web Server (IIS) item we will add here, other examples include SQLServer 2014, MySQL, LAMP, Lync, and WordPress.

Select Web Server (IIS) and click the checkmark to add this item to the plan:
This will add it to the configuration. Click **SAVE** to save the plan:

![Save button](image)

This will update the plan, and any users signed up for this plan will now have access to deploy a web server from this gallery item.

**Gotchas:**

- It may take a second to update the plan, and you may have to log out and back in to any existing tenant session to see the changes take effect.

### 1.1.7 - LAB 3 - Deploying a Workload from a Gallery Item

You can, and should, give this level of demo in 5 to 10 minutes. You want the customer to think “Wow that was easy”! If you frame the discussion correctly during the demo, you will get the desired reaction.

Once you have successfully started your scheduled demonstration within the environment please conduct the following;

In this lab we will deploy the Web Server (IIS) gallery item we added to the plan in the last lab.
Log back in to the Tenant Portal with the credentials:

- User Name: demouser@demos.dell.com
- Password: Password01

If you completed VLab #1, at this time you should see the Demo virtual machine listed in the main pane. We will now deploy another virtual machine, this time with the Web Server workload.
Click on **New** to bring up the **Virtual Machine Role** menu, and click **From Gallery** to bring up the gallery:

![Virtual Machine Role Menu](image)

This should bring up the **Web Server (IIS)** role configuration. Select it, and click the next arrow:

![Web Server Role Configuration](image)

Name the Web Server **WebDemo** and click next:
Most of the fields will have correct default values like below:
Add a password, Password01, confirm, and change the “IP Address Allocation Method” to “Static”. Click the next arrow:

Finally name the website, DemoWebSite, and click the checkmark to deploy the application:
The website is now deploying:

Talking Points:

- Virtual Machine Role Gallery Items will deploy applications on top of existing virtual machine templates.
- These applications can be customized or downloaded from the Windows Platform Installer.
- Deploying workloads through from the virtual machine role gallery is still a use of IaaS. The tenant in this case is still responsible for all layers of the application.
1.1.8 - LAB 4 - Verifying the Virtual Machine Deployment

You can, and should, give this level of demo in 5 to 10 minutes. You want the customer to think “Wow that was easy”! If you frame the discussion correctly during the demo, you will get the desired reaction.

Once you have successfully started your scheduled demonstration within the environment please conduct the following;

In this lab we will verify the virtual machine deployment we did in Lab #1 by connecting through RDP. Alternatively, if the IIS virtual machine role has been deployed, you could log into that instance to show the deployment was completed successfully.
Log back in to the Tenant Portal with the credentials:

- **User Name:** demouser@demos.dell.com
- **Password:** Password01

This will bring back up the tenant portal showing the Demo vm as well as the WebDemo web server:

Click on the Demo name to bring up the quick start screen, then click on **Dashboard:**
This will bring up the dashboard for the demo vm. Observe the virtual machine properties displayed here, including resources used such as cores, ram, storage, and ips:
Write down the IP address that has been allocated to your new Web server as you will need this for the next exercise.
Minimise the Service management portal, then open a new web page in Internet Explore from the task bar.

Enter the IP address of the web server into address bar of internet explorer
You should now see the default web page of the new web server you have just deployed.

Talking Points:

- This virtual machine was provisioned as a user without the requirement for IT to run scripts.
- The tenant owns this virtual machine and can create and delete it as needed.
1.2.0 - Clean Up

In order to leave this environment ready for the next Demo please clean-up by removing all the resources we added.

Log back in to the Tenant Portal with the credentials:
- User Name: demouser@demos.dell.com
- Password: Password01

Delete the virtual machine Demo by clicking Virtual Machines, Demo, Stop, and then Delete:
Next remove the WebDemo role by clicking Delete:
The tenant portal should now be ready for the next demo.

Log back into the admin portal by clicking the Azure Pack Admin bookmark:
Now select **PLANS** then **Tenant Plan** then **Virtual Machine Clouds**:
Scroll down to the gallery section and select **Remove gallery items**:

<table>
<thead>
<tr>
<th>NAME</th>
<th>VERSION</th>
<th>PUBLISHER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Web Server (IIS)</td>
<td>1.0.0.0</td>
<td>Microsoft</td>
</tr>
</tbody>
</table>

Select **Web Server (IIS)** and click the check mark to remove the gallery item:
Now save the plan:

The admin portal is now ready for the next demo.