

# Windows Azure Pack – Installation and Initial Configuration

Windows Server  
2012 R2



Hands-on lab

In this lab, you will learn how to install and configure the components of the Windows Azure Pack. To complete this lab, you are provided with a partially pre-configured environment with all required prerequisites met and many of the time-consuming installation processes completed. You will proceed to review the installation procedure for Windows Azure Pack using the Web Platform Installer. You will then configure the Service Management Portal to create Web Site clouds, Virtual Machine clouds, Service Bus clouds, both SQL Server and MySQL databases, as well as connect it to a Service Management Automation server, which provides an automated workflow management solution.

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## Introduction

### Estimated time to complete this lab

60 minutes

### Objectives

After completing this lab, you will be able to:

- Install the Windows Azure Pack roles.
- Perform Windows Azure Pack initial configuration.
- Create cloud objects including tenants and users.
- Create subscriptions and create cloud resources.

### Prerequisites

Before working on this lab, you must have:

- An understanding of cloud technologies especially Windows Azure.
- An understanding of basic database and website creation concepts.

### Overview of the lab

In this lab, you will learn how to install and configure the components of the Windows Azure Pack. To complete this lab, you are provided with a partially pre-configured environment with all required prerequisites met and many of the time-consuming installation processes completed. You will proceed to review the installation procedure for Windows Azure Pack using the Web Platform Installer. You will then configure the Service Management Portal to create Web Site clouds, Virtual Machine clouds, Service Bus clouds, both SQL Server and MySQL databases, as well as connect it to a Service Management Automation server, which provides an automated workflow management solution.

### Virtual machine technology

This lab is completed using virtual machines that run on Windows Server 2012 Hyper-V technology. To log on to the virtual machines, press CTRL+ALT+END and enter your logon credentials.

### Computers in this lab

This lab uses computers as described in the following table. Before you begin the lab, you must ensure that the virtual machines are started and then log on to the computers.

Virtual Machine	Role
WAPSQL	SQL Server database and Active Directory domain controller for WAP.Local domain
WAPPortal	Express installation of Windows Azure Pack Portal and Web App Gallery. Configured as an access point for service and tenant admin websites.
WAP SMA	Service Management Automation and Service Bus
WAPSPF	Service Provider Foundation
WAPVMM	System Center Virtual Machine Manager 2012 R2 server
WAPHVS	Hyper-V server (virtualized), file server, and MySQL server

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Virtual Machine	Role
SitesCN	Web Sites Controller
SitesFE	Web Sites Front End
SitesMN	Web Sites Management
SitesPB	Web Sites Publisher
SitesWWR	Web Sites Reserved
SitesWWS	Web Sites Shared

◇ All user accounts in this lab use the password **Passw0rd!**

## Navigation

Windows Azure Pack uses icons instead of labeled buttons for many tasks. While most are obvious, this document refers to them by action names. Below is a quick reference of action names and corresponding icons.

- Done or Finished – Check Mark
- Next – Right Arrow
- Previous – Left Arrow
- Close or Exit – X

### Note regarding pre-release software

Portions of this lab may include software that is not yet released, and as such may still contain active or known issues. While every effort has been made to ensure this lab functions as written, unknown or unanticipated results may be encountered as a result of using pre-release software.

### Note regarding user account control

Some steps in this lab may be subject to user account control. User account control is a technology which provides additional security to computers by requesting that users confirm actions that require administrative rights. Tasks that generate a user account control confirmation are denoted using a shield icon. If you encounter a shield icon, confirm your action by selecting the appropriate button in the dialog box that is presented.

### Note on activation

The virtual machines for these labs may have been built by using software that has not been activated. This is by design in the lab to prevent the redistribution of activated software. The unactivated state of software has been taken into account in the design of the lab. Consequently, the lab is in no way affected by this state. For operating systems other than Windows 8, please press Cancel or Close if prompted by an activation dialog box. If you are prompted by an Activate screen for Windows 8.1, press the Windows key to display the Start screen.

## Exercise 1: Understanding Windows Azure Pack Components and Architecture

In this exercise, you will not perform any tasks. You will be provided with an overview of the Windows Azure Pack and how it is deployed in this lab environment. Understanding this environment and deployment is the key to understanding the steps performed in the lab exercises.

- ◆ **Important:** If you already have a good understanding of the Windows Azure Pack and this environment, proceed to Exercise 2.

This lab initially configures the following components:

- Web Sites
- Infrastructure as a Service (IaaS)
- Service Bus
- Automation
- Databases

### Windows Azure Pack components: Web Sites

The Windows Azure Pack: Web Sites service uses a minimum of 6 server roles: Controller, Management Server, Front End, Web Worker, File Server, and Publisher. Also required is a server running SQL Server for the Web Sites runtime database. These roles are separate from, and in addition to, the servers that form an express or distributed installation of the Service Management API. The roles can be installed on physical servers or virtual machines.

1. **Web Sites Controller** - The controller provisions and manages the other Web Sites roles. This role is installed first. This role is installed on the SitesCN virtual machine.
2. **Management Server** - This server exposes a REST endpoint that handles management traffic to the Windows Azure Pack Web Sites Management API. This role is installed on the SitesMN virtual machine.
3. **Web Workers** - These are web servers that process client web requests. Web workers are either Shared or Reserved (at minimum, one of each is required) to provide differentiated levels of service to customers. Reserved workers are categorized into small, medium, and large sizes. The SitesWWR is the reserved worker server, and SitesWWS is the shared worker server.

- ◆ **Important:** Because web workers run customer code, they represent a potential risk to the Web Sites infrastructure. After installation, you should configure IP filtering from the Management Portal for Administrators to reduce the risk. For more information, see [Configure IP filtering](#).

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4. **Front End** - Accepts web requests from clients, routes requests to web workers, and returns web worker responses to clients. Front end servers are responsible for load balancing and SSL termination. This role is provided by the SitesFE server.
5. **File Server** - Provides file services for hosting web site content. The file server houses all of the application files for every web site that runs on the Web Sites cloud. The file server in this environment is WAPHVS. This is a general purpose server that provides several roles.
6. **Publisher** - Provides content publishing to the Web Sites farm for FTP clients, Visual Studio, and WebMatrix through the Web Deploy and FTP protocols. The publishing server is SitesPB.

In addition, up to three database servers are required. Note that in this environment, all SQL Server databases are located on WAPSQL. There is also a MySQL database instance on WAPHVS.

1. **Service Management API database** - The core installation of the Windows Azure Pack Service Management API uses a SQL Server server to store its configuration data. This database is configured as part of the overall Windows Azure Pack installation and is not specific to web sites.
2. **Web Sites runtime database** - Prior to installing Windows Azure Pack: Web Sites, you will need to prepare a SQL Server server to contain the runtime database that Web Sites uses for its operations.
3. **Application databases** - If your usage scenario includes providing database functionality for the tenant web sites, you will need to install separate SQL server and/or MySQL databases to provide this service.

## Windows Azure Pack components: Virtual Machines

Virtual Machines leverage several components to provide tenant based access to virtual machines hosted in a System Center Virtual Machine Manager (VMM) infrastructure.

1. **Service Provider Foundation** - Service Provider Foundation is provided with System Center 2012 R2 Orchestrator (and System Center 2012 SP1 - Orchestrator). Service Provider Foundation exposes an extensible OData web service that interacts with Virtual Machine Manager (VMM). This enables service providers and hosters to design and implement multi-tenant self-service portals that integrate IaaS capabilities available on System Center 2012 R2. Service Provider Foundation is installed on WAPSPF.
2. **Virtual Machine Manager** – VMM-specific objects such as clouds, virtual machine templates, hardware profiles, networks, and gallery items are exposed as artifacts which can be used to

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create virtual machine services. In this environment VMM is deployed on WAPVMM and the VMM environment has been populated with objects.

### Windows Azure Pack components: Databases

You can add one or more Microsoft SQL Server or MySQL server instances for tenants to deploy and use. Tenants also use these databases with the Web Sites service.

Microsoft SQL Server databases can range from simple stand-alone databases to highly available, always-on databases. You should rely on your SQL Server database administrator to install and configure SQL Server for you, ensuring that both Windows and SQL Server authentication are available.

In this environment, SQL Server is deployed on WAPSQL. MySQL is deployed on WAPHVS. Both are very simple installations. The complexity of the SQL implementation is hidden by Windows Azure Pack, so you manage all types the same way, regardless of the underlying infrastructure.

### Windows Azure Pack components: Service Bus

Service Bus for Windows Server is a set of installable components that provides the messaging capabilities of Windows Azure Service Bus on Windows Server. Service Bus for Windows Server enables you to build, test, and run loosely-coupled, message-driven applications in self-managed environments and on developer computers.

The purpose of Service Bus for Windows Server is to provide similar capabilities across Windows Azure and Windows Server, and to enable flexibility in developing and deploying applications. It is built on the same architecture as the Service Bus cloud service and provides scale and resiliency capabilities. The programming model, Visual Studio support, and APIs exposed for developing applications are symmetric to that for the cloud service making it easier to develop applications for either, and switch between the two. Going forward, the experience for managing entities on the Windows Azure Management Portal will be consistent across the on-premises and cloud versions.

Service Bus is installed on WAPSPF.

### Windows Azure Pack components: Service Management Automation

Service Management Automation is a workflow management solution for Windows Azure Pack for Windows Server. It enables you to automate the creation, monitoring, and deployment of resources in your environment.

Service Management Automation can be used to leverage existing System Center infrastructure and automation, including System Center Orchestrator runbooks.

Service Management Automation is installed on WAPSMA.





## Exercise 2: Installing Windows Azure Pack: Portal and API Express

In this exercise, you will review the installation process for Windows Azure Pack: Portal and API Express. You will then complete the initial configuration and connect to the management database.

### Install Windows Azure Pack

In this task, you will complete the installation process for the Windows Azure Pack using the Web Platform Installer. You will configure the installation but to save time, ~~you will cancel before actually performing the installation.~~ The installation has been performed for you. A typical installation takes between 10 and 15 minutes depending on hardware.

 Begin this task logged on to **WAPPortal** as **WAP\Administrator** using the password **Passw0rd!**

1. On WAPPortal, open Internet Explorer and navigate to **https://localhost:30101**.
  -  To save time in the lab, the Windows Azure Pack: Platform and API Express has been installed, but not configured on the server.
2. Click **Continue to this website (not recommended)**.
  -  Windows Azure Pack uses a self-signed certificate by default. This is adjustable by modifying the SSL bindings in Internet Information Services on any Windows Azure Pack server.
3. In SERVER NAME, type **WAPSQL**.
4. In DATABASE SERVER ADMIN USERNAME, type **SA**, and then in DATABASE SERVER ADMIN PASSWORD, type **Passw0rd!**
  -  You will see a green check if the password is correct.
5. In Configuration Store, in PASSPHRASE, type **Passw0rd!**
6. In CONFIRM PASSPHRASE, type **Passw0rd!**
7. Click the **Next** icon.
8. In Customer Experience Improvement Program, select **Yes**, and then click the **Next** icon.
9. In Features Setup, click the **Done** icon.
  -  All features will be installed on WAPPortal. This will take several minutes. When each feature has a green check mark, it is installed.
10. Click the **Done** icon, and then click **Yes**.






## Exercise 3: Configuring the Windows Azure Pack Web Sites Service

In this exercise, you will configure the Windows Azure Pack Web Sites service. In the first task, you will configure a number of components required for the service, such as the file server, front end server and others. In the second task, you will complete the configuration of the service using previously installed roles.

### Perform a web site component deployment

In this task, you will perform the steps required to deploy web site roles, including front end servers, Web Worker role servers, management servers, and file servers.

 Begin this task on **WAPPortal** logged on as **WAP\Administrator** using the password **Passw0rd!**


1. On the desktop, double-click **WAP – Admin**.
  -  You will see two certificate errors. On each one, click **Continue**. It may take a few minutes for the errors to appear. You can observe the icon next to the web site name to determine when the second has appeared.
2. When prompted, log on as **WAP\Administrator** using the password **Passw0rd!**
3. In the Welcome wizard, click the **Next** icon on each page, and then click the **Done** icon.
  -  The welcome wizard explains the elements of the UI.
4. In the New pane, click the **Close** icon.
  -  The service management portal page provides an administrator's view of all objects available to tenants as part of the Windows Azure Pack.

~~5. Close the Internet Explorer.~~

~~6.5.~~ Switch to the **WAPHVS** virtual machine, and ensure you are logged on as **WAP\Administrator** using the password **Passw0rd!**

~~7.6.~~ Open an administrative command prompt and change to the **C:\labfiles** folder.

~~8.7.~~ At the command prompt, type **ConfigFolderShares.cmd**, and press ENTER.

-  This batch file creates two folders, one for certificates and another for the web sites. It then shares the folders and configures the appropriate permissions.

~~9.8.~~ Switch to the **SitesCN** virtual machine, and ensure you are logged on as **WAP\Administrator** using the password **Passw0rd!**

~~10.9.~~ Using Internet Explorer, navigate to **https://localhost:30101**.

-  For your convenience and to save time, the virtual machine is pre-configured with the web site.

~~11.10.~~ Click **Continue to this website (not recommended)**.

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~~12~~.11. In the Database Server Setup page, in SERVER NAME, type **WAPSQL**.

~~13~~.12. In DATABASE SERVER ADMIN USERNAME, type **SA**, and then in DATABASE SERVER ADMIN PASSWORD, type **Passw0rd!**

~~14~~.13. In DNS SUFFIX, type **wap.com**, and then click the **Next** icon.

✦ The DNS Suffix indicates the suffix of user defined web sites.

~~15~~.14. In Web Sites Role Setup, in MANAGEMENT SERVER NAME, type **SitesMN**.

~~16~~.15. Under MACHINE CREDENTIALS TO INSTALL MANAGEMENT ROLES, in ADMIN USERNAME, type **WAP\Administrator**, and then in ADMIN PASSWORD, type **Passw0rd!**

~~17~~.16. Under MACHINE CREDENTIALS TO INSTALL WORKER ROLES, in ADMIN USERNAME, type **WAP\Administrator**, and then in ADMIN PASSWORD, type **Passw0rd!**

~~18~~.17. In Service Endpoint Credentials, in both PASSWORD and PASSWORD CONFIRMATION, type **Passw0rd!**

✦ TIP: If you need to scroll down to this field and find that you can't scroll down, click the Previous icon and then click the Next icon to place you back on the configuration page.

~~19~~.18. Click the **Next** icon.

~~20~~.19. In File Server Setup, click **USE A PRE-CONFIGURED WINDOWS FILE SERVER**.

✦ The file server will be used for storing web site content and shared SSL certificates.

~~21~~.20. In CONTENT SHARE NETWORK PATH, type **\\WAPHVS\WebSites**.

✦ You configured this share and the WAPHVS\Certificates share in a previous step.

~~22~~.21. In FILE SHARE OWNER USERNAME, type **WAP\FileShareOwner**.

~~23~~.22. In FILE SHARE OWNER PASSWORD and FILE SHARE OWNER PASSWORD CONFIRMATION, type **Passw0rd!**

~~24~~.23. In FILE SHARE USER USERNAME, type **WAP\FileShareUser**.

~~25~~.24. In FILE SHARE USER PASSWORD and FILE SHARE USER PASSWORD CONFIRMATION, type **Passw0rd!**

~~26~~.25. In the CERTIFICATE SHARE NETWORK PATH, type **\\WAPHVS\Certificates**.

~~27~~.26. Under Certificate Store Account, in USERNAME, type **WAP\CertificateShareUser**.

~~28~~.27. Under Certificate Store Account, in PASSWORD and PASSWORD CONFIRMATION, type **Passw0rd!**

~~29~~.28. Click the **Next** icon.

~~30~~.29. Under Customer Experience Improvement Program, click **NO, I AM NOT WILLING TO PARTICPATE**.

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~~31~~.30. Under Microsoft Update, click **OFF**.

~~32~~.31. Click the **Next** icon.

~~33~~.32. On the Features Setup page, click the **Done** icon.

✦ The setup will take a few minutes to complete. Wait until you see the green check marks before proceeding.

~~34~~.33. When complete, click the **Done** icon, and then click **Yes**.

## Complete the configuration of the Web Sites service using previously deployed roles

In this task, you will complete the configuration of the Web Sites service using a set of servers which have had roles previously deployed. This was done to save time in this lab.

✎ Begin this task logged on to **WAPPortal** as **WAP\Administrator** using the password **Passw0rd!**

1. If the WAP Admin portal is still open from a previous task, close it.
2. On the Desktop, double-click **WAP-Admin**.
3. In the Windows Security dialog box, log on as **WAP\Administrator** using **Passw0rd!** as the password.

4. Click **WEB SITE CLOUDS**.

5. Click **Register your existing website cloud REST endpoint**.

✦ This was deployed on the management server you specified in the previous task.

✦ **TIP:** If you do not see the link above, click the cloud icon to the next of **CLOUDS** on the web sites clouds page.

6. In the New pane, in DISPLAY NAME, type **WAP Websites Cloud**.

7. In WEB SITE CLOUD REST ENDPOINT, type **https://sitesmn**.

8. In USERNAME, type **CloudAdmin**.

9. In PASSWORD, type **Passw0rd!**

✦ Wait for the green check to appear next to the password after you type it to indicate the connection succeeded.

10. Click **Connect**.

11. Under web site clouds, click **CLOUDS**, and then click **WAP Websites Cloud**.

✦ You can review the configuration and recent performance of this website cloud in the **DASHBOARD**.

12. Click **ROLES**.

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- ✦ The controller, file server, and management server are ready. You must now deploy additional roles, including the Front End server, the Web Worker, and the Publishing Server roles.

13. On the portal taskbar, click **ADD ROLE**.

14. Click **ADD NEW FRONTEND**.

15. In ENTER THE HOSTNAME OR IP ADDRESS OF YOUR MACHINE, type **SitesFE**, and then click the **Done** icon.

16. Click **ADD ROLE**.

17. Click **ADD NEW PUBLISHER**.

18. In ENTER THE HOSTNAME OR IP ADDRESS OF YOUR MACHINE, type **SitesPB**, and then click the **Done** icon.

19. Click **ADD ROLE**.

20. Click **ADD NEW WEB WORKER**.

21. In ENTER THE HOSTNAME OR IP ADDRESS OF YOUR MACHINE, type **SitesWWR**.

22. In WORKER TYPE, select **Reserved – Small**, and then click the **Done** icon.

23. Click **ADD ROLE**.

24. Click **ADD NEW WEB WORKER**.

25. In ENTER THE HOSTNAME OR IP ADDRESS OF YOUR MACHINE, type **SitesWWS**.

26. In WORKER TYPE, select **Shared**, and then click the **Done** icon.

- ◇ **Important:** Wait for the status on each component to be listed as Ready

27. Click **DASHBOARD**.

- ✦ There are now two web workers listed, one SitesWWS and another on SitesWWR.

28. Click the **Back** icon.

29. Click **SETTINGS**.

- ✦ The URL provided is the default web gallery which is available to tenants who wish to deploy new web sites.

30. Click **SOURCE CONTROL**.

- ✦ You can configure source control information for the four supported source control providers. To gather the required information, follow the steps at <http://technet.microsoft.com/en-us/library/dn469322.aspx>.

## Exercise 4: Configure Virtual Machine Clouds

In this exercise, you create and configure Virtual Machine Clouds by integrating Windows Azure Pack and the System Center Service Provider Foundation. Service Provider Foundation provides an integration path between Windows Azure Pack and System Center Virtual Machine Manager, allowing Windows Azure Pack to request and then deploy new virtual machines based on System Center Virtual Machine Manager library objects.

### Register the Service Provider Foundation provider

In this task, you will register the pre-deployed Service Provider Foundation role.

- ✎ Begin this task logged on to **WAPPortal** as **WAP\Administrator** using the password **Passw0rd!**
  1. In Service Management Portal, click **VM CLOUDS**.
  2. Click **First you must register your System Center Service Provider Foundation**.
  3. In SERVICE URL, type **https://wapspf:8090**.
    - ✦ To save time, the Service Provider Foundation was pre-installed on WAPSPF using the default installation settings.
  4. In USERNAME, type **SPFLocal**.
  5. In PASSWORD, type **Passw0rd!**
  6. Click the **Done** icon.

### Connect Service Provider Foundation to the Virtual Machine Manager server

In this task, you will connect the Virtual Machine Manager server to your Service Provider Foundation role.

- ✎ Begin this task logged on to **WAPPortal** as **WAP\Administrator** using the password **Passw0rd!**
  1. In Service Management Portal, in VM CLOUDS, click **CLOUDS**.
  2. Click **USE AN EXISTING VIRTUAL MACHINE CLOUD PROVIDER TO PROVISION VIRTUAL MACHINES**.
  3. In VIRTUAL MACHINE MANAGER SERVER FQDN, type **wapvmm.wap.local**.
    - ✦ Leave the port and gateway information empty.
  4. Click **REGISTER**.
    - ◇ **Important:** Wait for the registration activity to complete. You will see a status of Ready when this has completed.
  5. Expand **wapvmm.wap.local**.

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- ✦ You will see two clouds. The clouds are defined using Virtual Machine Manager and were imported during registration.
6. Click **VIRTUAL MACHINES**.
    - ✦ Any tenant-defined virtual machines will be listed here.
  7. Click **NETWORKS**.
    - ✦ Any tenant-defined networks will be listed here.
  8. On the taskbar, click **GALLERY**.
  9. Click **IMPORT**.
  10. In IMPORT TO GALLERY, click **BROWSE FOR FILE**.
  11. Navigate to `\\wapvmm\c$\GalleryResources\Sharepoint_FoundationBasic_VMRole_Pkg\`, and then click **SharepointFoundation2010WG.resdefpkg**.
    - ✦ Importing the resource definition package to WAP is one of the steps you need to take to enable virtual machine roles, which is part of the Infrastructure as a Service (IaaS) that WAP provides. Other steps you need to take include importing a resource package definition to VMM and configuring VMM.
  12. Click **Open**, and then click the **Done** icon.
    - ⚠ **Important:** Wait for the gallery object to import.
  13. In GALLERY, click **SharePoint Foundation 2010 SP2– Workgroup**, and then on the taskbar click **Make Public**.
  14. Click **Yes**, and then click **OK**.
    - ✦ Making a gallery item public makes it available for use by tenants.
  15. Click the **Back** icon to return to the main view.



## Exercise 5: Configure Service Bus Clouds

In this exercise, you will configure Service Bus Clouds.

### Connect to the existing Service Bus role

In this task, you will configure the Windows Azure Pack to connect to the already deployed Service Bus role.

 Begin this task logged on to **WAPPortal** as **WAP\Administrator** using the password **Passw0rd!**

1. Click **SERVICE BUS CLOUDS**.
2. Click **Connect to an existing Service Bus cloud**.
  -  To save time, Windows Server Service Bus is pre-installed on WAPSMA.
3. In FRIENDLY NAME, type **WAP Service Bus**.
4. In SERVICE BUS CLOUD ENDPOINT, type **https://wapsma:9359**.
5. In ADMIN USERNAME, type **AdminUser**, and then in ADMIN PASSWORD, type **Passw0rd!**
6. In TENANT USERNAME, type **TenantUser**, and then in TENANT PASSWORD, type **Passw0rd!**
7. Click **Connect**.
8. Click **CLOUDS**.
  -  The Service Bus Cloud service is enabled.

## Exercise 6: Configure SQL Server and MySQL Clouds

In this exercise, you will configure a new SQL Server and MySQL cloud service. For this exercise, SQL Server is installed on WAPSQL and MySQL is installed on WAPHVS.

### Create a SQL Server cloud service

In this task, you will register a pre-deployed SQL Server for use in a cloud service.

 Begin this task logged on to **WAPPortal** as **WAP\Administrator** using the password **Passw0rd!**

1. Click **SQL SERVERS**.
2. Click **Add an existing server to the hosting server group**.
3. Click **CREATE A GROUP**.
4. Click the **GROUP TYPE** drop-down to display the options.
  - ✦ There are two groups, standalone servers and high availability groups. High availability groups configure SQL Server Always-on configurations using a file share as shared storage. We will not be creating an Always-on group in the lab; instead we will connect to a pre-installed standalone SQL server.
5. Click **CONNECT TO**.
  - ✦ You will add a server running SQL Server to the default group.
6. In SQL SERVER GROUP, leave **Default** selected.
7. In SQL SERVER NAME, type **WAPSQL**.
8. In USERNAME, type **SA**.
9. In PASSSSWORD, type **Passw0rd!**
10. In SIZE OF HOSTING SERVER IN GB, type **1000**.
11. Click **CONNECT**.

### Create a MySQL cloud service

In this task, you will register your existing MySQL server and use it to provide cloud-hosted databases.

 Begin this task logged on to **WAPPortal** as **WAP\Administrator** using the password **Passw0rd!**

1. Click **MYSQL SERVERS**.
2. Click **Add an existing server to the hosting server group**.
3. In MYSQL SERVER NAME, type **WAPHVS**.
  - ✦ We are adding a pre-installed instance of MySQL running on WAPHVS. Note that MySQL running on Linux is also supported.
4. In USERNAME, type **root**.



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❖ **IMPORTANT:** MySQL is case sensitive. If you encounter an error, ensure that 'root' is all in lower case.

✦ **NOTE:** If you get an error indicating that there are too many connections and need to run the flush-hosts command, switch to WAPHVS, open an administrative command prompt, and execute the following command: **mysqladmin -u root -pPassw0rd! flush-hosts**.

5. In PASSWORD, type **Passw0rd!**
6. In SIZE OF HOSTING SERVER IN GB, type **1000**.
7. Click **CONNECT**.

## Exercise 7: Configure the Automation Cloud Service

In this exercise, you will connect your Windows Azure Pack deployment to a Service Management Automation endpoint to provide overall automation services to your cloud infrastructure.

### Connect to the Service Management Automation endpoint

In this task, you will register the automation endpoint.

- ✎ Begin this task logged on to **WAPPortal** as **WAP\Administrator** using the password **Passw0rd!**
  1. Click **AUTOMATION**.
  2. Click **Register the service management automation endpoint**.
  3. In SERVICE URL, type <https://wapsma:9090>.
    - ✦ To save time, you will connect to a pre-installed [Service Management Automation endpoint](#)
  4. In USER NAME type **WAP\WAPSA**.
  5. In PASSWORD, type **Passw0rd!**
  6. Click the **Done** icon.

### Review Service Management Automation

In this task, you will review the automation service.

- ✎ Begin this task logged on to **WAPPortal** as **WAP\Administrator** using the password **Passw0rd!**
  1. In AUTOMATION, click **RUNBOOKS**.
    - ✦ There are a large number of runbooks included by default that can be used as starting point to introduce additional automation into your environment. Also note that you can select and, from the taskbar, start runbooks.
  2. Click **sample-using-vmcloud-automation**.
  3. Click **DASHBOARD**.
    - ✦ This shows you the run history of the job.
  4. On the sample-using-vmcloud-automation page, note the menu options, and then click **AUTHOR**.
    - ✦ **NOTE:** A Windows PowerShell script that provides instructions for use appears.
  5. Click **DRAFT**.
    - ✦ **NOTE:** This action allows you to edit the runbook.
  6. Click **EDIT RUNBOOK**.

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- ✦ **NOTE:** The color changes to indicate you are in editing mode. A number of additional administrative options appear on the taskbar.
- 7. On the taskbar, click **DISCARD DRAFT**, and then click **YES**.
- 8. Minimize the activities notice that appears.
- 9. Click **SCHEDULE**.
  - ✦ Here you can schedule the runbook to run at specific times.
- 10. Click **CONFIGURE**.
  - ✦ Here you can configure a description and tags, as well as logging options.
- 11. Click **Previous** (left arrow)
- 12. On the automation page, click **ASSETS**.
  - ✦ **NOTE:** A number of Windows PowerShell modules are listed. On the taskbar, you have the option to import modules.
- 13. Click **iSCSI** and scroll down the page to examine the module details.
- 14. Click **Previous**.

This is the end of the lab.