

# Exam AZ-103: Microsoft Azure Administrator Crash Course



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## Tim Warner

- MCT since 1997
- MVP since 2017
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- Az Admin badge: [timw.info](#)



## Day 1 of 2 Agenda

- Introduction
- Module 1: Manage Azure Subscriptions and Resources
- Module 2 Implement and Manage Storage
- Module 3: Deploy and Manage Virtual Machines
- Synthesis and look ahead to Day 2

## Day 2 of 2 Agenda

- Module 3, Continued: Compute, Part 2
  - ~\*Diagnostics\*~
- Module 4: Configure and Manage Virtual Networks
- Module 5: Manage Identities
- Module 6: Exam AZ-103/104 Exam Strategy

## A Different Kind of Training

- Let's avoid slide show fatigue
- We'll learn by doing – at least 80 percent demo
- I'm here to answer your questions – take advantage of this!

## Course Materials

[timw.info/az103](http://timw.info/az103)

## AZ-103 2020 Changes

- Reference: <https://timw.info/az2020>
- Azure certifications reviewed every 1 year
- AZ-104 is currently in beta testing
  - 80 percent discount
- AZ-103 will retire on or around August 31, 2020



## AZ-103 2020 Changes

- Cert update goals:
  - Reduce redundancy between certs
  - Re-align with JTA / job role
- Both AZ-103 and AZ-104 grant the same badge
- I advise you to stay on track with the AZ-103
- Beta exam periods are of variable length
- It will take content creators months to "catch up" to cover AZ-104





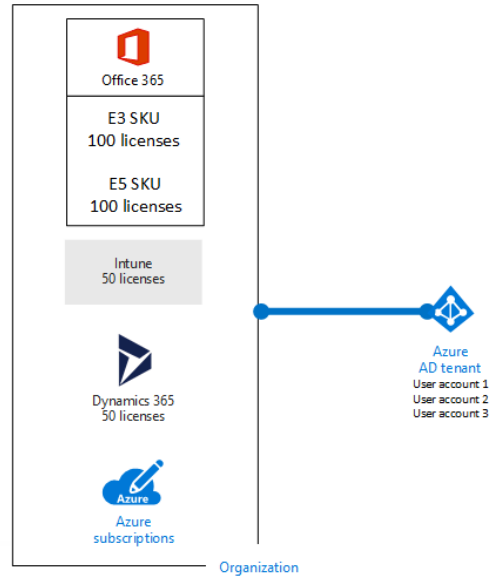


## Module 1: Manage Azure Subscriptions and Resources

## Module 1 Learning Objectives

- Manage Azure subscriptions
- Analyze resource utilization and consumption
- Manage resource groups
- Manage Role Based Access Control (RBAC)

# Azure Subscriptions



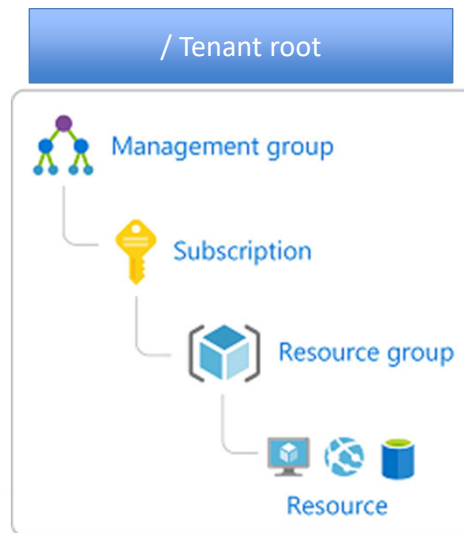
# Azure Management Scopes

## Inheritance:

- RBAC
- Policy

## No inheritance:

- Tags



## Module 1 Demo

- Make user Contributor at the subscription scope
- Log into Azure portal as the new Contributor
- Create a deployment:
  - Resource group
  - Storage account
- Grant another user read access to the resource group
  - Verify by attempting to delete the storage account

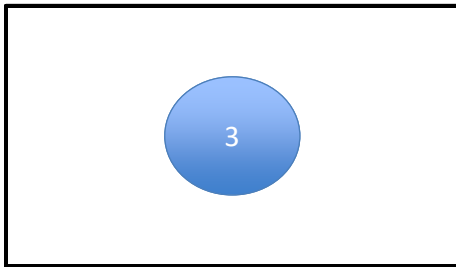


## Module 2: Implement and Manage Storage

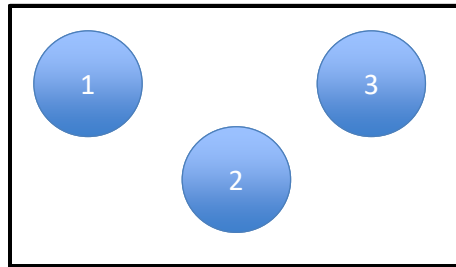
## Module 2 Learning Objectives

- Create and configure storage accounts
- Import and export data to Azure
- Configure Azure Files
- Implement Azure backup

## Storage Account Replication



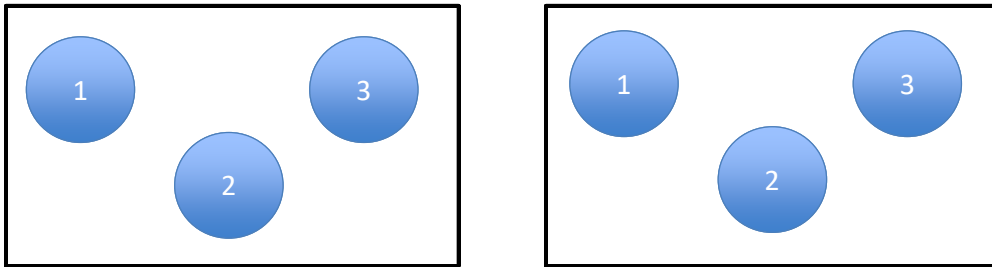
LRS



ZRS



## Storage Account Replication



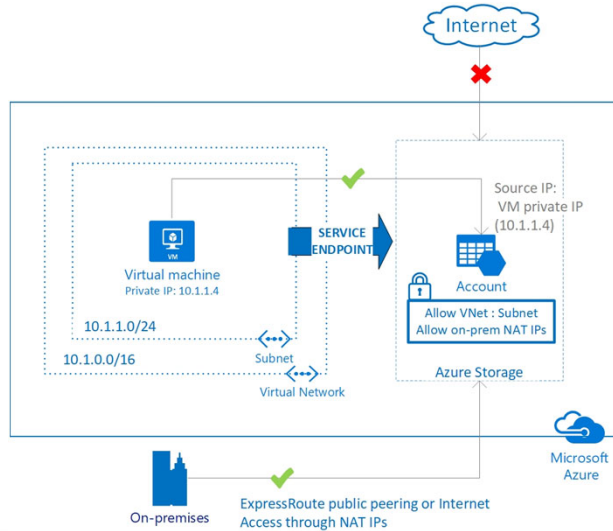
GRS – RA/GRS

## Shared Access Signature (SAS)

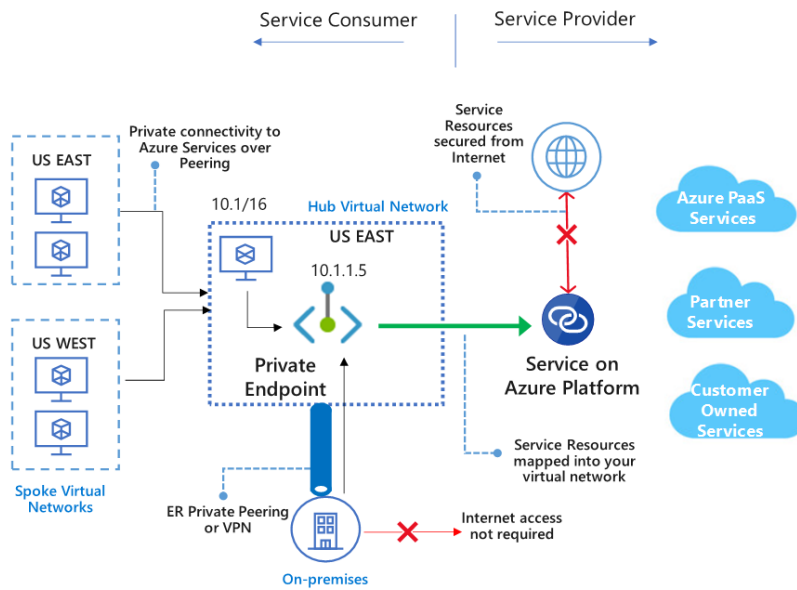
<https://cloudstg704.blob.core.windows.net/test/profile.ps1?st=2020-0114T14%3A34%3A12Z&se=2020-0115T15%3A34%3A00Z&sp=rl&sv=20180328&sr=b&sig=6g7u%2BYUYJ%2BRGtYGmSeh%2Fd7rRGLT9%2FjqO1%2BGDdVDT30o%3D>

[illegible]

# Service Endpoints



# Private Link



## Module 2 Demo

- Connect to storage account from Storage Explorer
  - Upload/download files
  - Create and used a shared access signature
- Connect Azure Cloud Shell
  - Create cloud shell
  - View file share in shell and in Azure portal
- Configure VM backup
  - Create Recovery Services vault



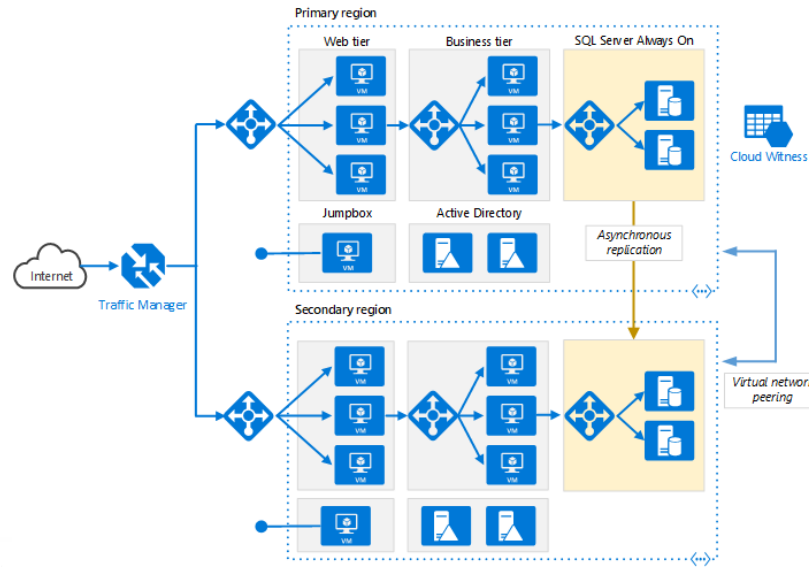
## Module 3: Deploy and Manage Virtual Machines

## Module 3 Learning Objectives

- Create and configure a VM for Windows and Linux
- Automate VM deployment
- Manage Azure VM configuration
- Manage Azure VM backups



# Virtual Machines



## Module 3 Demo

- Create a Linux VM with SSH authentication via Azure portal
  - Place on one VNet
- Create a Windows VM from an ARM template
  - Place on a second VNet
- Practice restores from previously backed-up VM
  - Full restore
  - File Recovery



## Module 4: Configure and Manage Virtual Networks

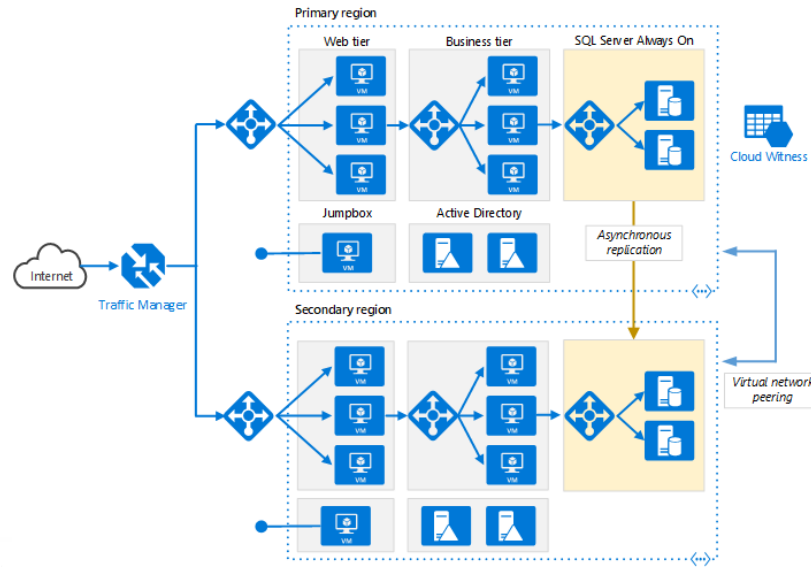
## Module 4 Learning Objectives

- Create connectivity between virtual networks
- Implement and manage virtual networking
- Configure name resolution
- Create and configure a Network Security Group (NSG)

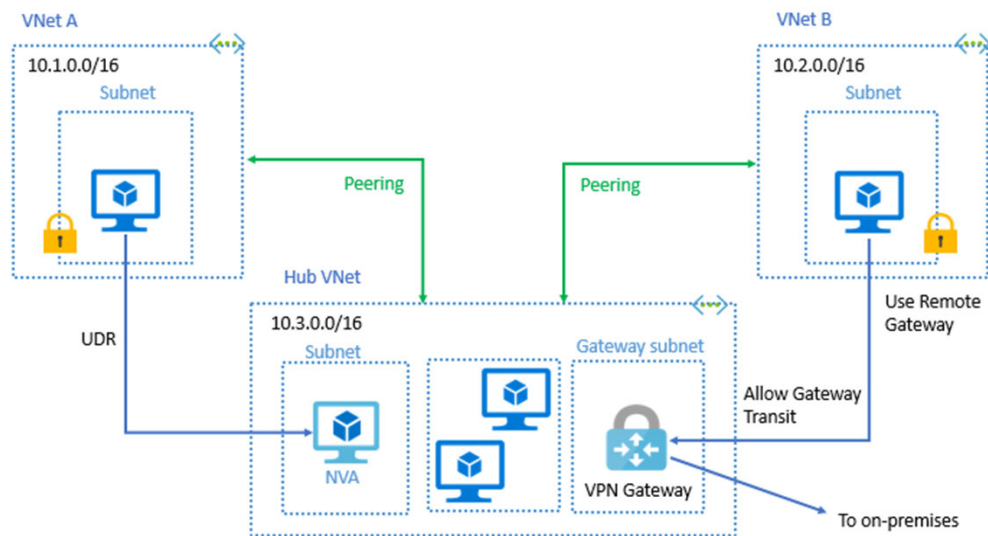
## Module 4 Learning Objectives (Cont'd)

- Implement Azure load balancer
- Monitor and troubleshoot virtual networking
- Integrate on-premises network with Azure virtual network

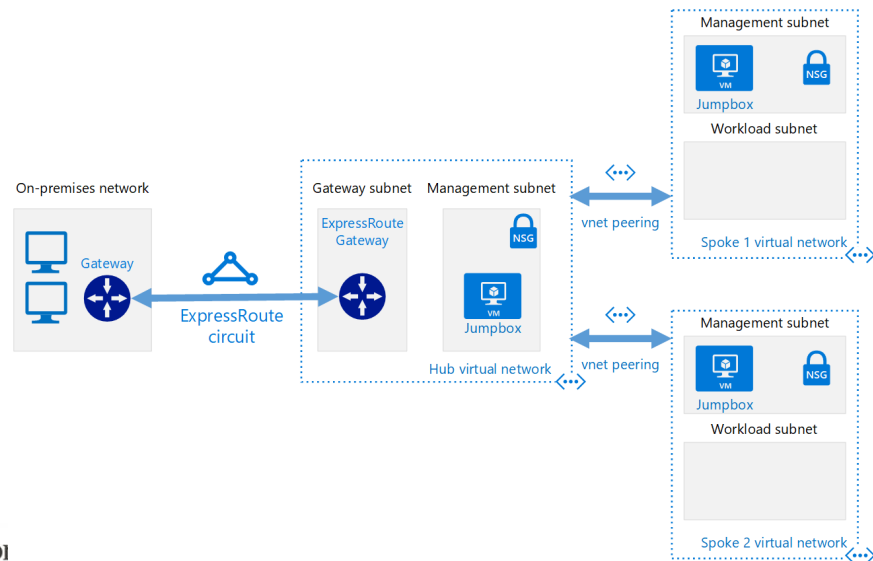
# Virtual Networks



# VNet Peering

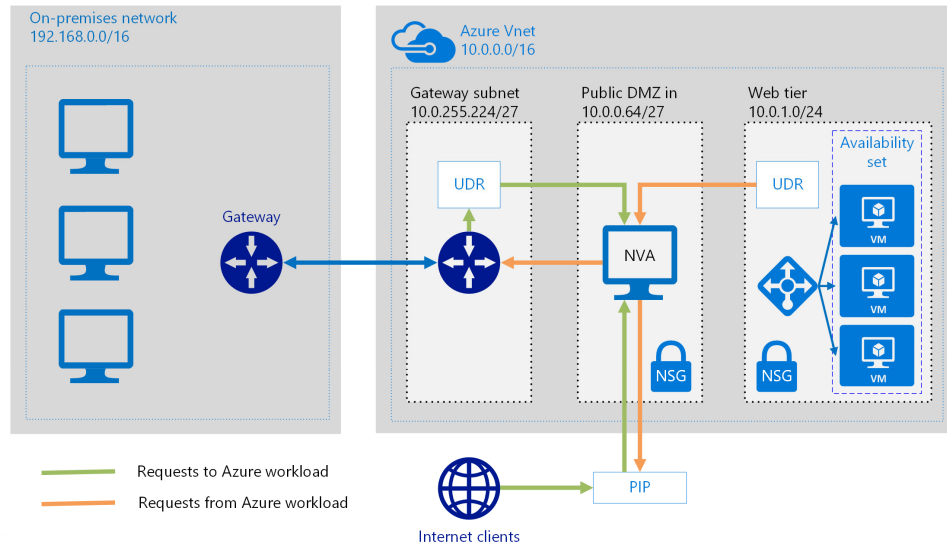


# Hybrid Cloud with Hub/Spoke





# Network Virtual Appliance



## Module 4 Demo

- Add a custom DNS server address
- Create a VNet peering between the two Vnets
- Use Network Watcher to test connectivity
  - Pay particular attention to NSGs
- Walk through S2S VPN configuration at a high level

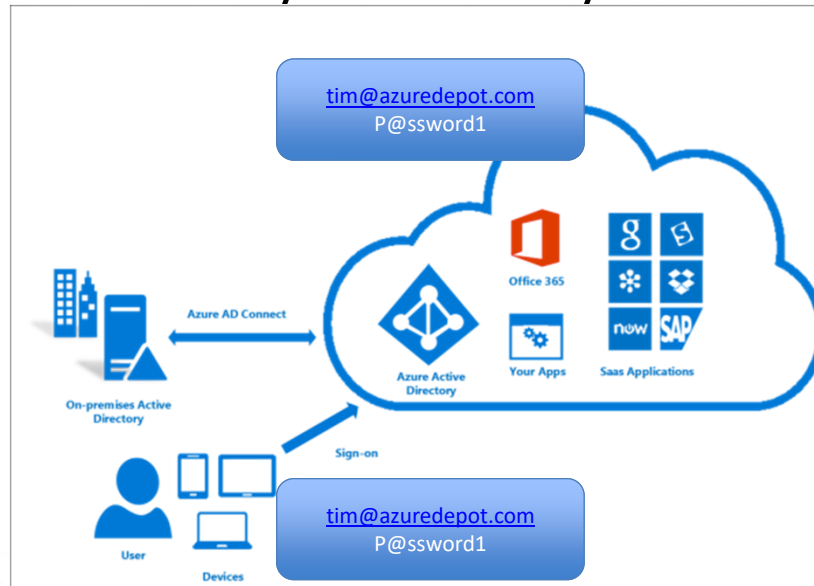


## Module 5: Manage Identities

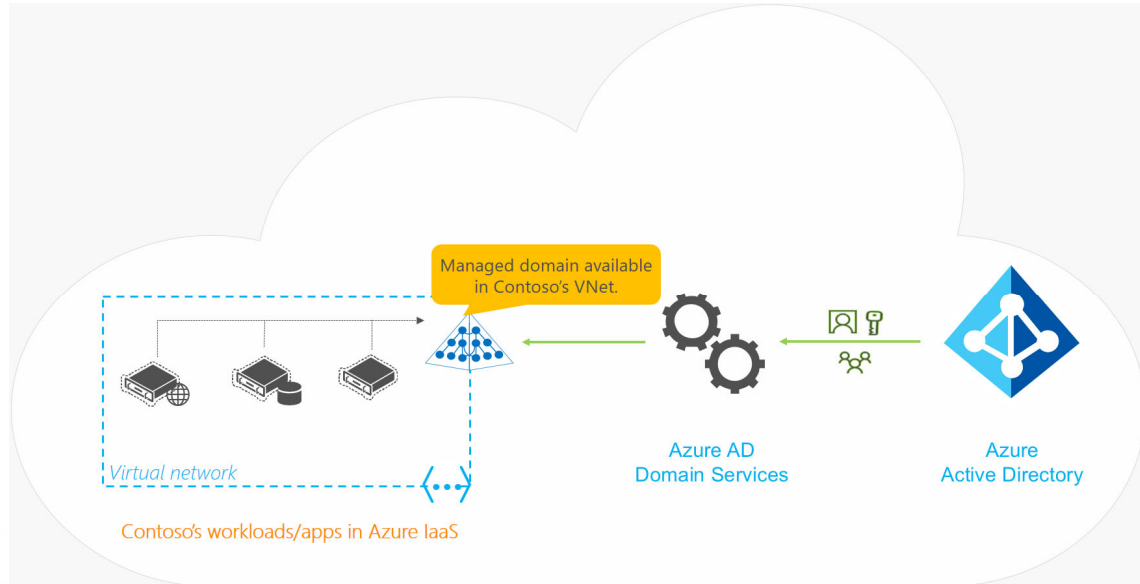
## Module 5 Learning Objectives

- Manage Azure Active Directory
- Manage Azure AD objects (users, groups, devices)
- Implement and manage hybrid identities
- Implement multi-factor authentication (MFA)

# Hybrid Identity



# Azure AD Domain Services



## Module 5 Demo

- Create an MFA Users group
- Create MFA conditional access policy
  - Based on Azure AD group membership
- Create an Azure AD user
  - Grant RBAC at resource group level
- Test access
  - MFA registration
  - Resource access



## Module 6: Exam AZ-103 Study Strategy



## Module 6 Learning Objectives

- Master the concepts
- Master the hands-on skills
- Master test-taking skills
- Know what to expect before, during, and after the exam

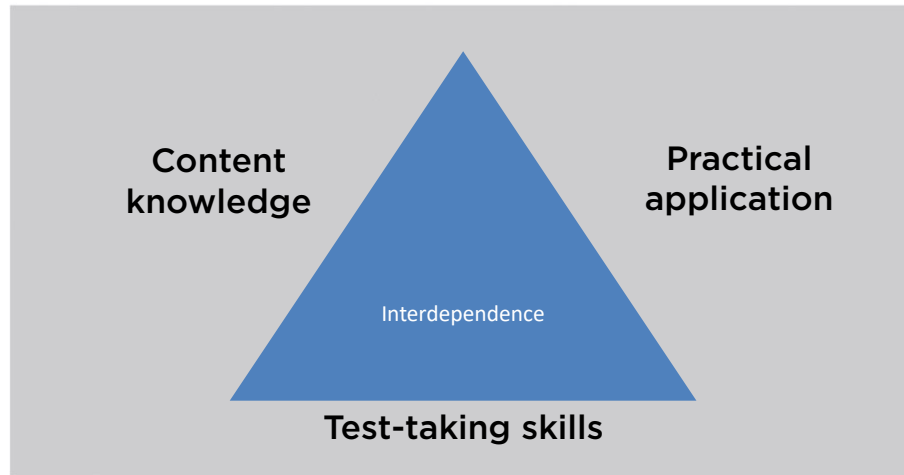
## Module 6 Demo

- Tour relevant websites:
  - Exam page(s) with registration workflow
  - Mindhub offers
  - MeasureUp.com
- Work through practice items
- Show MCP dashboard

## Microsoft Role-Based Certifications



## Tim's Cert Study Pyramid





## Exam AZ-103/104 Item Types

# Single-Answer Multiple Choice

⬆

Question 4 (of 5)

☐ Review later

☐ Comment later

Time remaining 01:58:22

Your network contains an Active Directory domain named contoso.com. The domain contains two servers named Server1 and Server2 that run Windows Server 2012 R2. Server1 has the Group Policy Management feature installed. Server2 has the Print and Document Services server role installed.

On Server2, you open **Print Management** and you deploy a printer named Printer1 by using a Group Policy object (GPO) named GPO1.

When you open GPO1 on Server1, you discover that the Deployed Printers node does not appear.

You need to view the Deployed Printers node in GPO1.

What should you do?

- ☐ A. On Server1, add and share a printer.
- ☐ B. On Server1, install the Print and Document Services Tools.
- ☐ C. On a domain controller, create a Group Policy central store.
- ☐ D. On Server1, modify the Group Policy filtering options of GPO1.

?

Help

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Calculator

🖨

Color scheme

↺

Reset

⬅

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## Multiple-Answer Multiple Choice

### Question 3 of 7

You have a computer that runs Windows 7.

You start the computer and receive the following error message:

BOOTMGR is missing  
Press Ctrl+Alt+Del to restart

You then start the computer from the Windows 7 installation media.

You need to ensure that the computer successfully starts Windows 7.

What are two possible ways to achieve this goal? ( Each correct answer presents a complete solution. Choose two.)

- ☐ A. Run Startup Repair.
- ☐ B. Run System Restore.
- ☐ C. Run **Bootrec /RebuildBcd**.
- ☐ D. Run **Bcdedit /createstore**.

Reset(T)

Instructions(I)

## Repeated Scenario

You need to move an Azure VM to another hardware host.

Solution: You redeploy the VM.

Does this solution meet the goal?

- a. Yes
- b. No



## Repeated Scenario


You need to move an Azure VM to another hardware host.

Solution: You restart the VM.

Does this solution meet the goal?

- a. Yes
- b. No

## Select and Place

 Question 5 (of 9)

Time remaining 01:38:28


☐ Review later  
☐ Comment later


You have a Microsoft SharePoint 2013 Service Pack 1 (SP1) server farm.


You need to recommend which tools should be used to recover deleted SharePoint site groups, deleted document libraries, and deleted SharePoint Designer 2010 workflows. The solution must use the minimum amount of administrative effort.


Which tool should you recommend for each type of content? To answer, drag the appropriate tool to the correct recovery task. Each tool may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.


| Tool                         | Recovery Task                 |
|------------------------------|-------------------------------|
| Microsoft SQL Server backups | Document libraries            |
| Recycle Bin                  | SharePoint Site groups        |
| Windows Server Backups       | SharePoint Designer workflows |
|                              | Resources                     |


 Help

 Calculator

 Color scheme

 Reset

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# Build List and Reorder

Question 4 (of 5)

Review later

Comment later

Time remaining 01:56:12

You have a Hyper-V host named Server1.

A technician creates a virtual machine named VM1 on Server1 by using the New Virtual Machine Wizard.

You start VM1 and you discover that there is no option to start by using PXE.

You need to ensure that you can start VM1 by using PXE.

Which three actions should you perform in sequence? (To answer, move the appropriate three actions from the list of actions to the answer area and arrange them in the correct order.)

Actions

Shut down VM1.

Modify the BIOS settings of VM1.

Enable DHCP guard on the legacy network adapter.

Answer Area

1 Modify the virtual switch settings of the legacy network adapter.

2 Add a legacy network adapter to VM1.

3 Install Integration Services on VM1.

Help


Calculator

Color scheme

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## Active Screen

### Question 18 of 32

You configure a SharePoint Server 2010 Service Pack 1 (SP1) server farm.

You need to enable the cache profile for anonymous users on internal collaboration sites for the site collection. You also need to allow administrators to choose a different page output cache profile for page layouts.

What should you do? (To answer, configure the appropriate option or options in the dialog box in the answer area.)

#### Answer Area

##### Libraries

Site Pages

Shared Documents

##### Lists

Calendar

Tasks

##### Discussions

Team Discussion

Recycle Bin

##### Output Cache

Select the **Enable output cache** check box to enable output caching in this site collection.

##### Default Page Output Cache Profile

A cache profile specifies how long items should be held in the cache. It also describes to the caching system how to determine whether a cached page element is in fact valid for other requests for the same element from different users.

You can specify different cache profiles to use for anonymous and authenticated users. This optimizes the use of the cache based on the authentication methods allowed on the site. Page output cache profiles specifically affect portal publishing pages. [Learn more about the default page output cache profile.](#)

☒ Enable output cache

##### Anonymous Cache Profile

Intranet (Collaboration Site)

Optimized for collaboration sites where authoring, web part customization, and minor version are enabled.

##### Authenticated Cache Profile

Disabled

Caching is not enabled

Reset(T)

Instructions(I)

# Case Study

Case Study

Time remaining 01:56:02

Question

Background

Existing Environment

Business Requirements

Technical Requirements

Problem Statements

Exhibits

This exam includes at least one case study. **Case studies are not timed separately. You can use as much exam time as you would like to complete each case.** However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.

**To start the case study**

To display the first question in this case study, click the **Next** button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an **All Information** tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the **Question** button to return to the question.

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Help

Calculator

Color scheme

Reset

Next

## Statement / Code Analysis

```
private void btnEquals_Click(object sender, EventArgs e)
{
    if (plusButtonClicked == true)
    {
        total2 = total1 + double.Parse(txtDisplay.Text);
    }
    else if (minusButtonClicked == true)
    {
        total2 = total1 - double.Parse(txtDisplay.Text);
    }

    txtDisplay.Text = total2.ToString();
    total1 = 0;
}
```

Blah blah blah.

☐ Yes

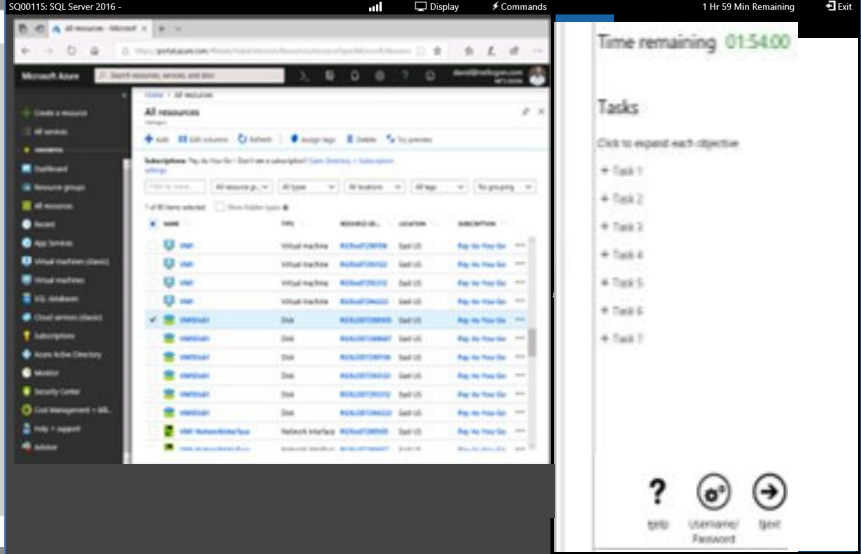
☐ No

Another statement.

☐ Yes

☐ No

# Performance-Based Lab



The screenshot displays the Microsoft Azure portal interface. The top navigation bar shows the account name 'derek@msnigan.com' and the location 'us-west-2'. The left sidebar contains various navigation options, including 'All resources', 'Subscriptions', 'Resource groups', 'All resources', 'Recent', 'App Services', 'Virtual machines (classic)', 'Virtual machines', 'My subscriptions', 'Cloud services (classic)', 'Subscriptions', 'Azure Active Directory', 'Monitor', 'Security Center', 'Cost Management + ML', 'Help + support', and 'Advisor'. The main content area is titled 'All resources' and shows a list of resources. The table has columns for 'Name', 'Type', 'Location', 'Status', and 'Last modified'. The resources listed are virtual machines and disks, all located in 'us-west-2'. The 'Status' column shows 'Running' for the VMs and 'Stopped' for the disks. The 'Last modified' column shows the date and time of the last modification. On the right side of the screen, there is a 'Tasks' section with a 'Time remaining' of '01:54:00'. Below the tasks, there are three icons: a question mark, a user icon, and a right arrow, labeled 'help', 'username/Password', and 'go' respectively.

Microsoft Azure portal interface showing a list of resources (Virtual machines and Disks) and a task list on the right side.


Tasks:

- Click to expand each objective
- + Task 1
- + Task 2
- + Task 3
- + Task 4
- + Task 5
- + Task 6
- + Task 7


Time remaining: 01:54:00

help username/Password go

Pearson

A large, stylized play button icon consisting of a white triangle pointing right, centered within a series of concentric circles in shades of gray. The icon is positioned on the left side of the slide, partially overlapping a dark gray header bar at the top and a dark gray footer bar at the bottom.

# Microsoft Online Testing

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# Microsoft Online Testing Process

## Select Exam Delivery Option

For: VUE-PCA: VUE Demo

All fields are required.

**How do you want to take your exam?** [Exam delivery option descriptions](#)

☐ At a local test center

☒ At my home or office

☐ I have a Private Access Code

# Microsoft Online Testing Process

Select Date  
[Why can't I find an available appointment?](#)

< April 2020 >

| Su | Mo | Tu | We | Th | Fr | Sa |
|----|----|----|----|----|----|----|
|    |    |    | 1  | 2  | 3  | 4  |
| 5  | 6  | 7  | 8  | 9  | 10 | 11 |
| 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 26 | 27 | 28 | 29 | 30 |    |    |

Select a date from the calendar. Only available dates can be selected.

Available start times: Wednesday, April 1, 2020  
Times shown in: America/Chicago-CDT [Change](#) | [Show 24-hour](#)

Morning Afternoon

12:00 AM 12:00 PM

# Microsoft Online Testing Process

**Start Exam**

1

Click on the "Copy Access Code" button below. This will automatically enter your access code into OnVUE once it is running. This access code will authorize you to start the exam check-in process.

123-456-789


Copy Access Code

2

Click "Download". Once complete, run the OnVUE application from the downloads folder.  
**Alert!** Mac users, if prompted, will need to allow OnVUE within their 'System Preferences: Security & Privacy: Privacy' settings for Microphone, Camera, Automation, and Input Monitoring.

Download

以下の日本語の説明は、ここをクリックするか、下にスクロールしてください



Enter your unique exam access code and phone number

1. Your access code may have been entered for you

123-456-789

If you do not see the access code, you will need to manually enter it. You can find your access code on the exam launch page.

2. Enter phone number

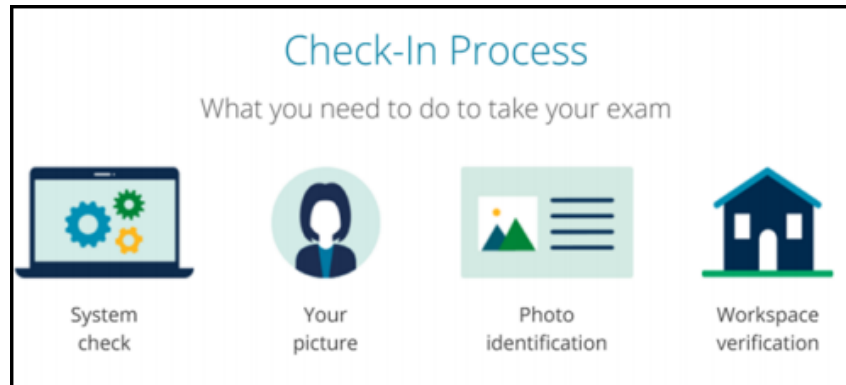
+1

555-555-5555

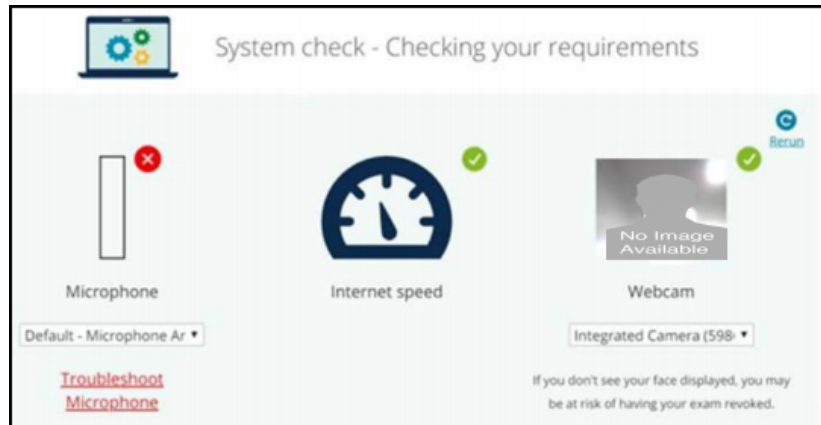
Enter a phone number with country code, example U.S. +1; we will use this number to contact you if there's an issue with check-in or exam delivery.

☐ I do not have a phone available at this time.

# Microsoft Online Testing Process



# Microsoft Online Testing Process



# Microsoft Online Testing Process

Use your mobile phone to take your required verification photos


The diagram illustrates the Microsoft Online Testing Process. It begins with a hand holding a smartphone displaying a verification photo interface. Below this, three icons represent the verification methods: 'Your picture' (a person icon), 'Photo identification' (a photo of a document with a mountain), and 'Workspace verification' (a house icon). Below these icons, two steps are listed: '1. Select access method' and '2. Enter contact information'. Under '1. Select access method', there are two options: 'Text message' and 'Type URL into mobile phone'. Below the smartphone icon, a note states: 'If you don't have a mobile phone, use our webcam to take the required photos.'

You don't have a mobile phone, use our webcam to take the required photos.

1. Select access method

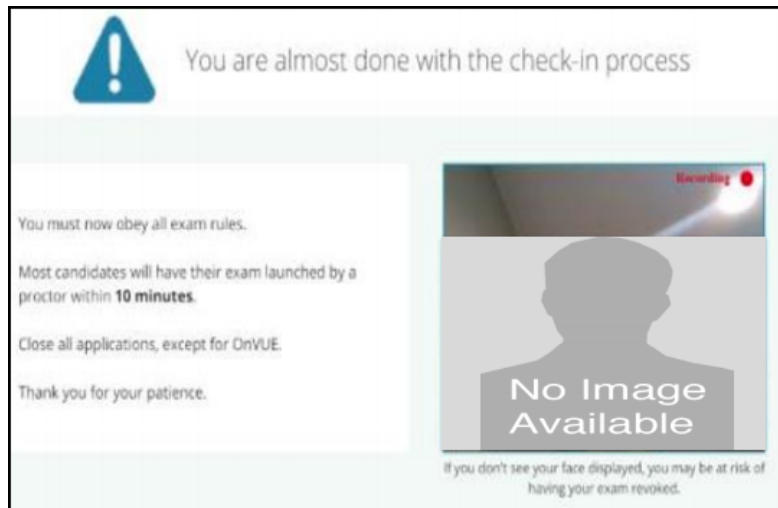
- Text message
- Type URL into mobile phone

2. Enter contact information

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# Microsoft Online Testing Process



# Thank You!

- Course materials: [timw.info/az103](http://timw.info/az103)
- Twitter: [@TechTrainerTim](https://twitter.com/TechTrainerTim)
- Website: [TechTrainerTim.com](http://TechTrainerTim.com)

