Exam AZ-140: Configuring and Operating Microsoft Azure Virtual Desktop – Skills Measured

The English language version of this exam will be updated on August 4, 2022. If a localized version of this exam is available, it will be updated approximately 8 weeks after the English version is updated.

Following the current exam guide, we have included a table that summarizes the changes that will be made to the exam on that date. We have also included the upcoming exam guide for reference purposes.

NOTE: Passing score: 700. Learn more about exam scores.

Audience Profile

Candidates for this exam are administrators with subject matter expertise in planning, delivering, and managing virtual desktop experiences and remote apps, for any device, on Azure.

Responsibilities for this role include deploying virtual desktop experiences and apps to Azure. Professionals in this role deliver applications on Azure Virtual Desktop and optimize them to run in multi-session virtual environments. To deliver these experiences, they work closely with the Azure administrators and architects, along with Microsoft 365 Administrators.

Candidates for this exam should have experience in Azure technologies, including virtualization, networking, identity, storage, backups, resilience, and disaster recovery. They should understand on-premises virtual desktop infrastructure technologies as they relate to migrating to Azure Virtual Desktop. These professionals use the Azure portal and Azure Resource Manager templates to accomplish many tasks. This role may use PowerShell and Azure Command-Line Interface (CLI) for more efficient automation.

Candidates for this exam must have expert Azure administration skills.

Skills Measured

NOTE: The bullets that follow each of the skills measured are intended to illustrate how we are assessing that skill. Related topics may be covered in the exam.

NOTE: Most questions cover features that are general availability (GA). The exam may contain questions on Preview features if those features are commonly used.
Plan an Azure Virtual Desktop Architecture (10—15%)

Design the Azure Virtual Desktop architecture

- assess existing physical and virtual desktop environments
- assess network capacity and speed requirements for Azure Virtual Desktop
- recommend an operating system for an Azure Virtual Desktop implementation
- plan and configure name resolution for Active Directory (AD) and Azure Active Directory Domain Services (Azure AD DS)
- plan a host pools architecture
- recommend resource groups, subscriptions, and management groups
- configure a location for the Azure Virtual Desktop metadata
- calculate and recommend a configuration for performance requirements
- calculate and recommend a configuration for Azure Virtual Machine capacity requirements

Design for user identities and profiles

- select an appropriate licensing model for Azure Virtual Desktop based on requirements
- recommend an appropriate storage solution (including Azure NetApp Files versus Azure Files)
- plan for Azure Virtual Desktop client deployment
- plan for user profiles
- recommend a solution for network connectivity
- plan for Azure AD Connect for user identities

Implement an Azure Virtual Desktop infrastructure (25—30%)

Implement and manage networking for Azure Virtual Desktop

- implement Azure virtual network connectivity
- manage connectivity to the internet and on-premises networks
- implement and manage network security
- secure Azure Virtual Desktop session hosts by using Azure Bastion
- monitor and troubleshoot network connectivity

Implement and manage storage for Azure Virtual Desktop

- configure storage for FSLogix components
- configure storage accounts
- configure disks
- create file shares
Create and configure host pools and session hosts

- create a host pool by using the Azure portal
- automate creation of Azure Virtual Desktop host and host pools by using PowerShell, Command-Line Interface (CLI), and Azure Resource Manager templates
- create a host pool based on Windows client or Windows Server session hosts
- configure host pool settings
- manage licensing for session hosts that run Windows client or Windows Server
- assign users to host pools
- apply OS and application updates to a running Azure Virtual Desktop host
- apply security and compliance settings to session hosts

Create and manage session host images

- create a gold image
- modify a session host image
- install language packs in Azure Virtual Desktop
- deploy a session host by using a custom image
- plan for image update and management
- create and use a Shared Image Gallery
- troubleshoot OS issues related to Azure Virtual Desktop

Manage access and security (10—15%)

Manage access

- plan and implement Azure roles and role-based access control (RBAC) for Azure Virtual Desktop
- manage roles, groups and rights assignment on Azure Virtual Desktop session hosts
- configure user restrictions by using AD group policies and Azure policies

Manage security

- plan and implement Conditional Access policies for connections to Azure Virtual Desktop
- plan and implement multifactor authentication in Azure Virtual Desktop
- manage security by using Azure Security Center
- configure Microsoft Defender Antivirus for session hosts

Manage user environments and Apps (20—25%)

Implement and manage FSLogix

- plan for FSLogix
- install and configure FSLogix
• configure Profile Containers
• configure Cloud Cache
• migrate user profiles to FSLogix

**Configure user experience settings**
• configure Universal Print
• configure user settings through group policies and Endpoint Manager policies
• configure persistent and non-persistent desktop environments
• configure Remote Desktop Protocol (RDP) properties on a host pool
• configure session timeout properties
• troubleshoot user profile issues
• troubleshoot Azure Virtual Desktop clients

**Install and configure apps on a session host**
• configure dynamic application delivery by using MSIX App Attach
• implement application masking
• deploy an application as a RemoteApp
• implement and manage OneDrive for Business for a multi-session environment
• implement and manage Microsoft Teams AV Redirect
• implement and manage browsers and internet access for Azure Virtual Desktop sessions
• create and configure an application group
• troubleshoot application issues related to Azure Virtual Desktop

**Monitor and maintain an Azure Virtual Desktop infrastructure (20—25%)**

**Plan and implement business continuity and disaster recovery**
• plan and implement a disaster recovery plan for Azure Virtual Desktop
• design a backup strategy for Azure Virtual Desktop
• configure backup and restore for FSLogix user profiles, personal virtual desktop infrastructures (VDIs), and golden images

**Automate Azure Virtual Desktop management tasks**
• configure automation for Azure Virtual Desktop
• automate management of host pools, session hosts, and user sessions by using PowerShell and Azure Command-Line Interface (CLI)
• implement autoscaling in host pools

**Monitor and manage performance and health**
• monitor Azure Virtual Desktop by using Azure Monitor
monitor Azure Virtual Desktop by using Azure Advisor
- customize Azure Monitor workbooks for Azure Virtual Desktop monitoring
- optimize session host capacity and performance
- manage active sessions and application groups
- monitor and optimize autoscaling results

The following table summarizes the changes that will be implemented on August 4, 2022 to the English language version of this exam. Following the table, the upcoming exam guide is included.

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**Audience Profile**

Candidates for this exam are server or desktop administrators with subject matter expertise in designing, implementing, managing, and maintaining Microsoft Azure Virtual Desktop experiences and remote apps for any device.
To deliver these experiences, they work closely with Azure administrators, Azure architects, Microsoft 365 administrators, and Azure security engineers.

Candidates for this exam should have experience with Azure technologies, including virtualization, networking, identity, storage, and resiliency. They should be able to manage end-user desktop environments, including delivering applications and configuring user settings. These professionals use the Azure portal, templates, scripting, and command-line tools to manage an Azure Virtual Desktop deployment.

**Skills Measured**

NOTE: The bullets that follow each of the skills measured are intended to illustrate how we are assessing that skill. Related topics may be covered in the exam.

NOTE: Most questions cover features that are general availability (GA). The exam may contain questions on Preview features if those features are commonly used.

**Plan and implement an Azure Virtual Desktop infrastructure (40—45%)**

**Plan, implement, and manage networking for Azure Virtual Desktop**

- assess network capacity and speed requirements for Azure Virtual Desktop
- calculate and recommend a configuration for network requirements
- plan and implement Azure virtual network connectivity
- manage connectivity to the internet and on-premises networks
- plan and implement RDP Shortpath and quality of service (QoS) policies
- plan and implement name resolution for Azure Virtual Desktop
- monitor and troubleshoot network connectivity

**Plan and implement storage for Azure Virtual Desktop user data**

- plan storage for Azure Virtual Desktop user data
- implement storage for FSLogix components
- implement storage accounts
- implement file shares
- implement Azure NetApp Files

**Plan host pools and session hosts**

- recommend resource groups, subscriptions, and management groups
- recommend an operating system (OS) for an Azure Virtual Desktop implementation
• recommend an appropriate licensing model for Azure Virtual Desktop based on requirements
• plan a host pools architecture
• calculate and recommend a configuration for performance requirements
• calculate and recommend a configuration for Azure Virtual Machines capacity requirements

**Implement host pools and session hosts**
• create host pools and session hosts by using the Azure portal
• automate creation of Azure Virtual Desktop hosts and host pools by using PowerShell, Azure CLI, Azure Resource Manager templates (ARM templates), and Bicep
• configure host pool and session host settings
• apply a Windows client or Windows Server license to a session host

**Create and manage session host images**
• create a golden image manually
• create a golden image by using Azure VM Image Builder
• modify a session host image
• plan and implement lifecycle management for images
• apply OS and application updates to an image
• create a session host by using a golden image
• plan and implement image storage
• create and manage Azure Compute Gallery

**Plan and implement identity and security (15—20%)**

**Plan and implement identity integration**
• choose an identity management and authentication method
• identify requirements for Active Directory Domain Services (AD DS), Azure Active Directory Domain Services (Azure AD DS), and Azure AD for Azure Virtual Desktop
• plan and implement Azure roles and role-based access control (RBAC) for Azure Virtual Desktop
• plan and implement Azure AD Conditional Access policies for connections to Azure Virtual Desktop
• plan and implement multifactor authentication in Azure Virtual Desktop
• manage roles, groups, and rights assignments on Azure Virtual Desktop session hosts
Plan and implement security

- plan, implement, and manage security for Azure Virtual Desktop session hosts by using Microsoft Defender for Cloud
- configure Microsoft Defender Antivirus for session hosts
- implement and manage network security for connections to Azure Virtual Desktop
- configure Azure Bastion or just-in-time (JIT) for administrative access to session hosts
- plan and implement Windows Threat Protection features on Azure Virtual Desktop session hosts, including Windows Defender Application Control

Plan and implement user environments and apps (20—25%)

Plan and implement FSLogix

- recommend FSLogix configuration
- install and configure FSLogix
- configure Profile Containers
- configure Office Containers
- configure Cloud Cache

Plan and implement user experience and client settings

- choose an Azure Virtual Desktop client and deployment method
- deploy and troubleshoot Azure Virtual Desktop clients
- configure printing and device redirection
- configure user settings through Group Policy and Microsoft Endpoint Manager policies
- configure Remote Desktop Protocol (RDP) properties on a host pool
- configure session timeout properties
- implement the Start Virtual Machine on Connect feature

Install and configure apps on a session host

- choose a method for deploying an app to Azure Virtual Desktop
- configure dynamic application delivery by using MSIX app attach
- publish an application as a RemoteApp
- implement FSLogix application masking
- implement and manage OneDrive, including multisession environments
- implement and manage Microsoft Teams, including AV redirect
- implement and manage Microsoft 365 apps on Azure Virtual Desktop session hosts
- implement and manage browsers for Azure Virtual Desktop sessions
- create and configure an application group
- assign users to application groups
Monitor and maintain an Azure Virtual Desktop infrastructure (10—15%)

Monitor and manage Azure Virtual Desktop services

- configure log collection and analysis for Azure Virtual Desktop session hosts
- configure Azure Virtual Desktop monitoring by using Azure Monitor
- monitor Azure Virtual Desktop by using Azure Monitor
- customize Azure Monitor workbooks for Azure Virtual Desktop monitoring
- monitor Azure Virtual Desktop by using Azure Advisor
- optimize session host capacity and performance
- implement autoscaling in host pools
- monitor and manage active sessions and application groups
- configure automation for Azure Virtual Desktop
- automate management of host pools, session hosts, and user sessions by using PowerShell and Azure CLI

Plan, implement, and maintain business continuity

- recommend an update strategy for session hosts
- plan and implement a disaster recovery plan for Azure Virtual Desktop
- plan for multi-region implementation
- design a backup strategy for Azure Virtual Desktop
- configure backup and restore for FSLogix user profiles, personal virtual desktop infrastructures (VDIs), and golden images