

OFFICIAL MICROSOFT LEARNING PRODUCT

# 10984A

## Deploying and Managing Office 365 Hybrid Deployments

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Revised July 2013

# Module 1

## Introduction to Office 365 administration and licensing

### Contents:

<b>Lesson 1:</b> Overview of Office 365	2
<b>Lesson 2:</b> Office 365 administration and role delegation	4
<b>Lesson 3:</b> Office 365 tenant configuration	6
<b>Lesson 4:</b> Hybrid deployment overview	8
Module Review and Takeaways	10
Lab Review Questions and Answers	11

## Lesson 1

# Overview of Office 365

### Contents:

Question and Answers	3
Resources	3

## Question and Answers

### Discussion: How will you plan your Office 365 subscription strategy?

**Question:** What are your organization's business requirements?

- Is the location of users (region) a consideration?
- Will external partners need to access data?
- How will you set up administrator accounts?

**Answer:** Answers will vary, because each organization will have its own scenario for Office 365 deployment.

**Question:** How will Office 365 meet your organization's business requirements?

**Answer:** Answers will vary, because each organization will have its own scenario for Office 365 deployment.

**Question:** Which Office 365 subscription would be most suitable for your organization? What will you do if your needs change or if the needs of individuals change? Can you switch plans?

**Answer:** Answers will vary, because each organization will have its own scenario for Office 365 deployment. Your ability to switch plans will depend on what plans you are switching from and switching to.

## Resources

### Office 365 core components



**Additional Reading:** For more information, refer to "Office 365 Service Descriptions" at <http://aka.ms/iv18pg>.

### Office 365 Education, Nonprofit, and Government subscriptions



**Additional Reading:** For more information, refer to "Get Office 365 free for your entire school" at <http://aka.ms/c2imoj>.



**Additional Reading:** For more information, refer to "Compare Office 365 Nonprofit plans": <http://aka.ms/wnd4wq>.



**Additional Reading:** For more information, refer to "Office 365 Government plans": <http://aka.ms/knev43>.

## Lesson 2

# Office 365 administration and role delegation

### Contents:

Question and Answers	5
Resources	5

## Question and Answers

**Question:** What are the administrator roles that you can assign in Office 365?

**Answer:** The administrator roles that you can assign are:

- Global administrator
- Billing administrator
- Password administrator
- Service administrator
- User management administrator
- Exchange Online administrator
- Skype for Business Online administrator
- SharePoint Online administrator

## Resources

### Managing Office 365 with Windows PowerShell



**Additional Reading:** For a detailed list of Azure management cmdlets, refer to "Azure Active Directory Cmdlets": <http://aka.ms/rlunlo>.

## Lesson 3

# Office 365 tenant configuration

### Contents:

Question and Answers	7
Resources	7



## Question and Answers

**Question:** What are the steps involved in creating a tenant account for Office 365?

**Answer:** The steps involved in creating a tenant account for Office 365 are:

1. Select the Office 365 plan you will use for a trial.
2. Ensure you have a valid email account (organizational or Microsoft account).
3. Click the trial link on the Office 365 website.
4. Enter the correct information for your organization.
5. Complete the sign-in process by validating the text message or phone call.

## Resources

### Configuring DNS records for custom domains



**Additional Reading:** For more information, refer to "External Domain Name System records for Office 365" at <http://aka.ms/d67qkh>.

## Lesson 4

# Hybrid deployment overview

### Contents:

Question and Answers

9

## Question and Answers

**Question:** What are the benefits and disadvantages of a hybrid deployment?

**Answer:** Answers will vary because each organization is unique. However, answers should include:

- Benefits:
  - Flexibility
  - Ease of migration
- Disadvantages:
  - Complexity
  - Cost

# Module Review and Takeaways

## Best Practices

When planning a hybrid deployment, keep the following best practices in mind:

- Upgrade your on-premises deployments to the latest versions of the apps. Hybrid deployments require the latest updates for whatever version of Exchange Server, Skype for Business Server, or SharePoint Server you have installed
- Install and assign any required trusted public CA certificates. Several services, including Exchange, require valid third-party certificates and do not support self-signed certificates.
- Verify requirements for your network environment. You will need to make sure that your network can support the extra bandwidth required for a cloud-based environment. You likely have done this as part of considering a cloud deployment, but you should verify that:
  - Proxy and firewall devices can handle the additional traffic.
  - Configure outbound proxies to bypass authentication for Office 365 domains.
  - Verify that proxies can handle the extra connections required by shared calendars and mailboxes, or bypass proxies for connections to Office 365 for Outlook.
  - Determine the maximum number of support devices for a public IP address and how you will load balance across addresses.
  - Bypass inspection of outbound connections from computers on your network to Office 365 domains.
  - Review internal network settings such as MTU size, auto-detection, and sub-optimal routes to the internet for settings that could affect performance.

## Review Question

**Question:** What factors should you consider when planning a custom domain?

**Answer:** Consider the following factors when you plan a custom domain:

- Multiple domains. Plan to add the main domain that your organization currently uses, along with any other domain that it uses for email messages within the organization.
- Subdomains. You might want to register subdomains if you need them for your organization subsidiaries.
- Domain adding order. You must add root domains before subdomains.
- DNS record hosting. Communicate with the organization that will host your domains about the changes needed for Office 365 deployment, such as A, CNAME, TXT and MX records.

# Lab Review Questions and Answers

## Lab: Provisioning and configuring an Office 365 tenant

### Question and Answers

**Question:** Why is it important to specify the correct country/region when you set up an Office 365 account?

**Answer:** Some features are restricted on a country-by-country basis, and you cannot change the country/region after you have set up the account.

# Module 2

## Deploying and configuring directory synchronization

### Contents:

<b>Lesson 1:</b> Directory synchronization and authentication overview	2
<b>Lesson 2:</b> Azure AD Connect deployment and configuration	4
<b>Lesson 3:</b> Manage user and group objects in an Office 365 hybrid environment	6
Module Review and Takeaways	8
Lab Review Questions and Answers	9

## Lesson 1

# Directory synchronization and authentication overview

### Contents:

Question and Answers	3
Resources	3

## Question and Answers

**Question:** When you implement directory synchronization with password synchronization, what method does directory synchronization use to synchronize the user's password?

**Answer:** Directory synchronization with password synchronization copies password hashes instead of actual passwords to Azure AD.

**Question:** When you want to access resources in one directory while being authenticated in another, which technology you should use?

**Answer:** You should use federation services to achieve this.

## Resources

### Prerequisites for directory synchronization



**Additional Reading:** For more information, refer to "You receive a 'This company has exceeded the number of objects that can be synchronized' error in a directory synchronization report" at <http://aka.ms/r4x1q4>.



**Additional Reading:** For more information, refer to "Prepare Active Directory and domains" at <http://aka.ms/xwdxic>.

### Prepare AD DS for directory synchronization



**Additional Reading:** For more information, refer to "IdFix Directory Synchronization Error Remediation Tool" at <http://aka.ms/sr02nb>.



**Additional Reading:** For more information about integrating AD DS and Azure AD, refer to "Integrate your on-premises directories with Azure Active Directory" at <https://aka.ms/AA216yn>.



**Additional Reading:** For more information, refer to "Azure Hybrid Identity Design Considerations Guide" at <http://aka.ms/ibuqek>.



## Lesson 2

# Azure AD Connect deployment and configuration

### Contents:

Question and Answers	5
Resources	5

## Question and Answers

**Question:** You cannot change the Azure AD Connect configuration after you install and deploy Azure AD Connect.

☐ True

☐ False

**Answer:**

☐ True

☒ False

**Feedback:**

This is false. Azure AD Connect allows you to change the directory synchronization configuration after the initial deployment.

## Resources

### Azure AD Connect requirements



**Additional Reading:** For more information, refer to "Office 365 URLs and IP address ranges" at <http://aka.ms/A4c1kq>.



**Additional Reading:** For more information, refer to "Azure AD Connect: Accounts and permissions" at <https://aka.ms/Mxwf6x>.

### Azure AD Connect customized configuration



**Additional Reading:** For more information, refer to "Configuring Alternate Login ID" at <http://aka.ms/nqh5gc>.

### Modify the directory synchronization scope



**Additional Reading:** For more information, refer to "Azure AD Connect sync: Configure filtering" at <https://aka.ms/AA30o5q>.

## Lesson 3

# Manage user and group objects in an Office 365 hybrid environment

### Contents:

Question and Answers	7
Resources	7

## Question and Answers

**Question:** If you don't want to use self-service password reset from Azure AD, what is the alternative method you can use to provide this functionality for AD DS? Do you have any third-party solution already deployed in your organization that provides this functionality?

**Answer:** You can deploy Microsoft Identity Manager on-premises. Answers about third-party solutions might vary.

## Resources

### Managing Office 365 user licenses



**Additional Reading:** For more information, refer to "Getting all Licensed Office 365 users with PowerShell" at <http://aka.ms/me03qp>.



**Additional Reading:** For more information, refer to "How to Use PowerShell to Automatically Assign Licenses to Your Office 365 Users" at <http://aka.ms/pwr39r>.

## Module Review and Takeaways

### Best Practices

- Always use a dedicated server to deploy Azure AD Connect.
- Use the IdFix tool before establishing directory synchronization.
- Deploy and use Azure AD Connect Health to actively monitor the directory synchronization.
- Enable users to use self-service password reset.

### Common Issues and Troubleshooting Tips

Common Issue	Troubleshooting Tip
Azure AD Connect cannot connect to AD DS to synchronize changes.	Check if you changed the password for the account that Azure AD Connect is using to connect to AD DS.

## Lab Review Questions and Answers

### Lab: Administering directory synchronization, users, and groups in an Office 365 hybrid environment

#### Question and Answers

**Question:** When a user resets the password by using the Azure AD profile page, what should you enable to maintain password consistency in Azure AD and AD DS?

**Answer:** You should implement the password writeback functionality.

**Question:** If you implement directory synchronization with password synchronization between AD DS and Azure AD, which system authenticates the users when they access services such as Office 365?

**Answer:** In this case, Azure AD authenticates the users, because this scenario does not support single sign-on (SSO).

# Module 3

## Exchange Server hybrid deployment planning

### Contents:

<b>Lesson 1:</b> Exchange Online overview	2
<b>Lesson 2:</b> Exchange Server hybrid configuration options and deployment features	5
<b>Lesson 3:</b> Exchange Server services in the hybrid deployment	8
Module Review and Takeaways	11
Lab Review Questions and Answers	12

## Lesson 1

# Exchange Online overview

### Contents:

Question and Answers	3
Resources	4



## Question and Answers

**Question:** What are four common reasons for organizations to choose Exchange Online?

- ( ) Cost
- ( ) Saving the environment
- ( ) Administrative effort
- ( ) Everyone is doing it
- ( ) Disaster recovery

**Answer:**

- (√) Cost
- (√) Saving the environment
- (√) Administrative effort
- ( ) Everyone is doing it
- (√) Disaster recovery

**Feedback:**

Just because it is popular to move to the cloud doesn't mean it's a good reason. However, common reasons for organizations to choose Exchange Online are its usefulness with disaster-recovery operations, the reduced administrative effort that it requires, and the fact that it's more ecofriendly and helps reduce costs.

## Discussion: Exchange Online vs. Exchange Server

**Question:** In Scenario 1, would you recommend Exchange Server or Exchange Online?

**Answer:** Exchange Online is the best choice.

**Feedback:** Exchange Online will likely be more cost effective because of the age of Contoso's existing server infrastructure. Exchange Online will also take the least amount of time to deploy.

**Question:** In Scenario 2, which is the most suitable Exchange Online or Office 365 plan for Adatum's users?

**Answer:** They should obtain Enterprise (E3 or E5) licenses.

**Feedback:** Adatum has more than 300 users, so a Business Essentials or Business Premium plan will not meet their requirements. As a heavily regulated company, Adatum needs an E3 or E5 plan to make use of the broadest range of security and compliance features of Exchange Online.

**Question:** In Scenario 3, which subscriptions would you recommend to Fabrikam?

**Answer:** There is more than one correct answer. One solution is to buy 200 Business Professional licenses so they can get Outlook with their plan, and then they could buy 500 Kiosk or 500 F1 plans for the manufacturing workers. This would be a cost-efficient solution.

**Feedback:** Even though the total number of users is more than 300, it's possible to purchase combinations of Business and Enterprise plans. Fabrikam can use up to 300 Business plans in this scenario.

## Resources

### Exchange Online subscriptions



**Additional Reading:** For more information about feature availability across Office 365 plans, refer to “Exchange Online Service Description” at <https://aka.ms/AA21eij>.



**Additional Reading:** For more information about service limits in Exchange Online, refer to “Exchange Online Limits” at <https://aka.ms/AA216xz>.

### What is Exchange Online Protection?



**Additional Reading:** For more information about EOP, refer to “Exchange Online Protection overview” at <https://aka.ms/AA21eib>.



**Additional Reading:** To learn more about EOP, refer to “Exchange Online Protection overview” at <https://aka.ms/AA21eib>.

## Lesson 2

# Exchange Server hybrid configuration options and deployment features

### Contents:

Question and Answers	6
Resources	7

## Question and Answers

**Question:** Azure AD authentication system is used for organization relationships and Microsoft Federation Gateway (MFG) is used for sharing policies.

- ☐ True
- ☐ False

**Answer:**

- ☐ True
- ☒ False

**Feedback:**

Azure AD Authentications system used to be known as the Microsoft Federation Gateway. Both organizational relationships and sharing policies use the federation that the Azure AD authentication system provides.

**Question:** After the hybrid configuration is complete, Outlook on the Web clients can use a single URL regardless of whether their mailbox is on-premises or online.

- ☐ True
- ☐ False

**Answer:**

- ☒ True
- ☐ False

**Feedback:**

One of the key benefits to a hybrid configuration is how it allows on-premises and online organizations to function as a single logical organization. This includes a single shared namespace for email addresses and a single URL for Outlook on the Web.

**Question:** Which of the following is an optional component of a hybrid deployment?

- ☐ On-premises Exchange Server
- ☐ Office 365
- ☐ Exchange Online Protection
- ☐ Azure AD Connect
- ☐ AD FS

**Answer:**

- ☐ On-premises Exchange Server
- ☐ Office 365
- ☐ Exchange Online Protection
- ☐ Azure AD Connect
- ☒ AD FS

**Feedback:**

Of the components listed as answers, only Active Directory Federation Services (AD FS) is optional. Password synchronization is required at a minimum.

## Resources

### Options for connecting Exchange Server to Office 365



**Additional Reading:** For more information about the latest Exchange Online migration options, refer to "New Exchange Online migration options" at <https://aka.ms/AA216y1>.

### Considerations for Exchange hybrid deployment



**Additional Reading:** The offboarding process is documented in the "Move an Exchange Online mailbox to the on-premises organization" section of the "Move mailboxes between on-premises and Exchange Online organizations in hybrid deployments" TechNet article: <https://aka.ms/AA21eic>.



**Additional Reading:** To learn more about prerequisites for hybrid deployments, refer to "Hybrid deployment prerequisites" at <https://aka.ms/AA21eie>.

## Lesson 3

# Exchange Server services in the hybrid deployment

### Contents:

Question and Answers

9

## Question and Answers

**Question:** Your organization has just implemented a hybrid configuration. All the email messages that are sent from the on-premises servers to the Exchange Online servers are being identified by EOP as spam. What is the most likely cause of this issue?

**Answer:** Most likely, the email messages are appearing as external or anonymous to EOP. This can happen if there is a non-Microsoft intermediary device, such as an email gateway, which is relaying mail from on-premises to EOP. You must configure at least one Exchange Server or Edge Transport server to route mail directly to EOP.

**Question:** Which of the following mail-flow configuration options requires Exchange Online to route outbound mail through on-premises servers?

- ☐ Solid State Transport
- ☐ Centralized mailbox store
- ☐ Centralized mail transport
- ☐ Network Load Balancing

**Answer:**

- ☐ Solid State Transport
- ☐ Centralized mailbox store
- ☒ Centralized mail transport
- ☐ Network Load Balancing

**Feedback:**

Centralized mail transport is the feature that requires Exchange Online to route all outbound mail, to the internet, through on-premises servers. You should enable this feature only if there is a compliance requirement.

**Question:** Which of the following protocols can Exchange clients use to connect to their mailboxes? (Select all that apply.)

- ☐ EWS
- ☐ MRS
- ☐ IMAP4
- ☐ MAPI of HTTP
- ☐ ActiveSync

**Answer:**

- ☒ EWS
- ☐ MRS
- ☒ IMAP4
- ☐ MAPI of HTTP
- ☒ ActiveSync

**Feedback:**

Applications and clients use Exchange Web Services (EWS) to access mailbox information. Primarily non-Microsoft clients use IMAP4 to access their mailboxes, while mobile devices use ActiveSync to access mailbox information.

You use Mailbox Replication Service and the MRSPProxy to move mailboxes, while MAPI or HTTP is not a protocol. Rather, it should be *MAPI over HTTP*.



# Module Review and Takeaways

## Review Questions

**Question:** The ability to support delegated permissions in an Exchange hybrid deployment is only possible for which versions of Exchange Server?

**Answer:** Exchange Server 2013 with latest cumulative update and Exchange Server 2016.

**Question:** You work for a company in the health-care industry with 400 employees, and 275 of those users need to use the full Office Pro Plus software so that they can use Outlook 2016 when working with their Exchange Online email. The remaining users travel extensively and primarily use mobile devices to access their mailboxes. Your Chief Financial Officer (CFO) has stated that you must implement Exchange Online at the least cost possible. Which subscription(s) would you recommend?

**Answer:** You can use the Business Professional subscriptions for up to 300 users within a single Office 365 tenant. However, there is very little room to add more subscriptions if the company grows. Also, due to the industry that the company is in, it may not be feasible to use the Business Essential for the remaining users. It may be necessary to get all users Enterprise E3 licenses for the security and compliance features.

## Tools

The following table lists the tools that this module references:

Tool	Use to	Where to find it
Remote Connectivity Analyzer	Verify various connectivity scenarios	<a href="https://aka.ms/AA216yk">https://aka.ms/AA216yk</a>
Exchange Deployment Assistant	Plan and deploy Exchange Server in a hybrid configuration	<a href="https://aka.ms/AA21eio">https://aka.ms/AA21eio</a>

## Common Issues and Troubleshooting Tips

Common Issue	Troubleshooting Tip
Applications are not able to send email to the internet after migrating to Exchange Online.	You must create inbound connectors to allow authorized application to relay mail through Exchange Online Protection.
After moving some users to Exchange Online, they do not see all of the on-premises users in the global address book.	If directory synchronization has not run yet or is not functioning during and after a mailbox move, the address books (on-premises and online) will be out of sync until the next synchronization interval.

## Lab Review Questions and Answers

### Lab: Planning and designing the integration between Exchange Online and Exchange Server 2016

#### Question and Answers

**Question:** Which setting do you need to configure to prevent all users from editing their own phone numbers and addresses?

**Answer:** The Default Role Assignment policy controls this and other self-service user permissions.

**Question:** What are some ways by which you can confirm that a hybrid deployment has the proper configuration?

**Answer:** You can repair configuration issues by running the Hybrid Configuration wizard again. Reviewing the settings in the Exchange admin center both on-premises and online can be helpful as well. Use the Exchange admin center to look for the Send and Receive connectors used for mail flow. Also, look for the organization relationship created by the Hybrid Configuration wizard, and use the Remote Connectivity Analyzer tool to confirm Autodiscover and other client communications.

# Module 4

## Exchange Server hybrid deployment

### Contents:

<b>Lesson 1:</b> Use the Hybrid Configuration Wizard	2
<b>Lesson 2:</b> Migration options and the Exchange hybrid deployment configuration	5
<b>Lesson 3:</b> Implement advanced functionality for hybrid deployments	10
<b>Lesson 4:</b> Configure message compliance and hygiene in a hybrid environment	14
Module Review and Takeaways	18
Lab Review Questions and Answers	19

## Lesson 1

# Use the Hybrid Configuration Wizard

### Contents:

Question and Answers	3
Resources	4

## Question and Answers

**Question:** Which of the following configurations is not performed by the **Hybrid Configuration Wizard**?

- ☐ Automatically selecting the appropriate Exchange server
- ☐ Downloading cumulative updates
- ☐ Checking for federated sharing
- ☐ Configuring OAuth
- ☐ Enabling the Microsoft Exchange Mailbox Replication Proxy service

**Answer:**

- ☐ Automatically selecting the appropriate Exchange server
- ☒ Downloading cumulative updates
- ☐ Checking for federated sharing
- ☐ Configuring OAuth
- ☐ Enabling the Microsoft Exchange Mailbox Replication Proxy service

**Feedback:**

The **Hybrid Configuration Wizard** does not download or install cumulative updates to the existing Exchange servers.

**Question:** Which of the following are common good practices when monitoring a hybrid deployment? (Select all that apply.)

- ☐ Ensuring that Microsoft Azure Active Directory Connect (Azure AD Connect) is running reliably.
- ☐ Restarting the Exchange server if CPU spikes occur.
- ☐ Monitoring the firewalls, Web Application Proxy, and AD FS.
- ☐ Monitoring message routing between Exchange Server on-premises and Exchange Online.
- ☐ Regularly running the Remote Connectivity Analyzer.

**Answer:**

- ☒ Ensuring that Microsoft Azure Active Directory Connect (Azure AD Connect) is running reliably.
- ☐ Restarting the Exchange server if CPU spikes occur.
- ☐ Monitoring the firewalls, Web Application Proxy, and AD FS.
- ☐ Monitoring message routing between Exchange Server on-premises and Exchange Online.
- ☐ Regularly running the Remote Connectivity Analyzer.

**Feedback:**

When administering a hybrid deployment, you should always try to ensure that Microsoft Azure Active Directory Connect (Azure AD Connect) is running reliably, monitor message routing between Exchange Server on-premises and Exchange Online, regularly run the Remote Connectivity Analyzer to verify the configuration, and monitor the middle-tier components.

**Question:** Put the following steps in order by numbering each to indicate the preparatory steps to run the Hybrid Configuration Wizard.

	Steps
	Publish your Exchange Server 2016 server.
	Ensure that Exchange is properly deployed and working on-premises, and then run the Exchange Deployment Assistant.
	Deploy AD FS.
	Register your domains with Office 365.
	Sign up for Office 365.
	Deploy Azure AD Connect.

**Answer:**

	Steps
6	Publish your Exchange Server 2016 server.
3	Ensure that Exchange is properly deployed and working on-premises, and then run the Exchange Deployment Assistant.
5	Deploy AD FS.
2	Register your domains with Office 365.
1	Sign up for Office 365.
4	Deploy Azure AD Connect.

## Resources

### Best practices for implementing a hybrid deployment



**Additional Reading:** For more information on hybrid deployment best practices, refer to “Hybrid deployment best practices” at <http://aka.ms/Ub6sfj>.

## Lesson 2

# Migration options and the Exchange hybrid deployment configuration

### Contents:

Question and Answers	6
Resources	8

## Question and Answers

**Question:** You need to perform the Exchange Online migration for a small organization. They have a limited amount of data and approximately 120 mailboxes. Which type of migration will best fit their needs?

- ☐ Internet Message Access Protocol (IMAP) migration
- ☐ PST import
- ☐ Cutover migration
- ☐ Hybrid configuration
- ☐ Staged migration

**Answer:**

- ☐ Internet Message Access Protocol (IMAP) migration
- ☐ PST import
- ☒ Cutover migration
- ☐ Hybrid configuration
- ☐ Staged migration

**Feedback:**

A cutover migration moves mailbox data—in a single step—from an on-premises Exchange organization to Exchange Online. This type of migration is appropriate only for a small organization with a limited amount of data. Exchange Online supports this type of migration for up to 2,000 mailboxes, but we recommend using this migration type for organizations with 150 or fewer mailboxes. The main benefit of a cutover migration is its simplicity. Because no coexistence occurs between email systems, you simply have to copy data and then switch to Exchange Online.

**Question:** Which of the following are true considerations for an IMAP migration?

- ☐ You can migrate only mail items.
- ☐ You can migrate a maximum of 300,000 items per mailbox (newest items first).
- ☐ You can migrate a maximum message size of 35 MB.
- ☐ Folders with a slash (/) in the name are not migrated.

**Answer:**

- ☒ You can migrate only mail items.
- ☐ You can migrate a maximum of 300,000 items per mailbox (newest items first).
- ☐ You can migrate a maximum message size of 35 MB.
- ☐ Folders with a slash (/) in the name are not migrated.

**Feedback:**

Internet Message Access Protocol (IMAP) migrations have strict limitations. You can't migrate calendar items, contacts, or tasks. You can't migrate messages larger than 35 MB. You can't migrate folders that have a slash (/) in the name.



**Question:** Which of the following prerequisites is not required before you can configure legacy public folder coexistence in Exchange Online?

- ☐ The Hybrid Configuration Wizard is necessary to configure and synchronize your on-premises and Exchange Online environments.
- ☐ The DNS records used for Autodiscover reference an on-premises endpoint.
- ☐ Outlook Anywhere is disabled on the on-premises Exchange servers.
- ☐ In Exchange Server 2010, you must be a member of the Organization Management or Server Management role-based access control (RBAC) role groups to create and configure mailbox databases and mailboxes.
- ☐ In Exchange Online, you must be a member of the Organization Management role group.

**Answer:**

- ☐ The Hybrid Configuration Wizard is necessary to configure and synchronize your on-premises and Exchange Online environments.
- ☐ The DNS records used for Autodiscover reference an on-premises endpoint.
- ☒ Outlook Anywhere is disabled on the on-premises Exchange servers.
- ☐ In Exchange Server 2010, you must be a member of the Organization Management or Server Management role-based access control (RBAC) role groups to create and configure mailbox databases and mailboxes.
- ☐ In Exchange Online, you must be a member of the Organization Management role group.

**Feedback:**

Outlook Anywhere should not be disabled in a hybrid configuration and is not required to be disabled for public folder migrations.

**Question:** You need to do a migration that involves moving mailboxes from on-premises Exchange servers to Exchange Online and moving mailboxes from Exchange Online to on-premises Exchange servers. Specify the correct order for moving mailboxes across premises.

	Steps
	Move mailboxes.
	Delete the migration batch.
	Create a migration endpoint.
	Enable the Microsoft Exchange Mailbox Replication Proxy service.

**Answer:**

	Steps
3	Move mailboxes.
4	Delete the migration batch.
1	Create a migration endpoint.
2	Enable the Microsoft Exchange Mailbox Replication Proxy service.

**Question:** The legacy migration process for public folders requires that you run several scripts to generate configuration files and data that the migration process requires. Specify the order in which you will need to do the following tasks.

	Steps
	Finalize the public folder migration.
	Complete the migration.
	Create a public folder mailbox in Exchange Online.
	Generate a comma-separated values file (CSV) for folder mapping.
	Start the public folder migration.
	Lock down legacy public folders.
	Test the public folder migration.
	Download the migration scripts.

**Answer:**

	Steps
6	Finalize the public folder migration.
8	Complete the migration.
3	Create a public folder mailbox in Exchange Online.
2	Generate a comma-separated values file (CSV) for folder mapping.
4	Start the public folder migration.
5	Lock down legacy public folders.
7	Test the public folder migration.
1	Download the migration scripts.

## Resources

### Migration options for Exchange Online



**Additional Reading:** For additional information about IMAP migration, refer to “What you need to know about migrating your IMAP mailboxes to Office 365” at <http://aka.ms/crn236>.



**Additional Reading:** For detailed information on importing .pst files into Office 365, refer to “Overview of importing your organization PST files to Office 365” at <http://aka.ms/G2n2p7>.



**Additional Reading:** For more-detailed information, refer to “Convert Exchange 2007 mailboxes to mail-enabled users” at: <https://aka.ms/r1o37w>.



**Additional Reading:** For more-detailed information, refer to “Perform a staged migration of email to Office 365” at <http://aka.ms/m3lpyu>.

## Configure public folders in the hybrid deployment



**Additional Reading:** For detailed information about migrating public folders to Office 365, refer to “Use batch migration to migrate legacy public folders to Office 365 and Exchange Online” at <http://aka.ms/F6ncbt>.

For information about migrating Exchange Server 2013 and Exchange Server 2016 public folders to Exchange Online, refer to “Announcing the availability of modern public folder migration to Exchange Online” at <https://aka.ms/F3e4el>.



**Additional Reading:** To download the script to synchronize mail public folder objects from Active Directory AD DS during public folder migration and hybrid access, refer to “Mail-enabled Public Folders - directory sync script” at <http://aka.ms/Hdixzj>.



**Additional Reading:** For prerequisites and additional details, refer to “Configure Exchange Online public folders for a hybrid deployment” at <https://aka.ms/AA21eit>.



**Additional Reading:** For prerequisites and additional details, refer to “Configure Exchange Server public folders for a hybrid deployment” at <https://aka.ms/AA21eik>.

## Delegated mailbox permissions in a hybrid deployment



**Additional Reading:** For additional details on possible issues with delegate permissions in a hybrid environment, refer to “Overview of delegation in an Office 365 hybrid environment” at <https://aka.ms/AA216yo>.

## Configure document collaboration with OneDrive for Business, SharePoint Online, and Exchange Server 2016 on-premises



**Additional Reading:** For more information about how to configure document collaboration with OneDrive for Business and Exchange Server 2016 on-premises, refer to “Configure document collaboration with OneDrive for Business and Exchange 2016 on-premises” at <https://aka.ms/sceibc>.

## Lesson 3

# Implement advanced functionality for hybrid deployments

### Contents:

Question and Answers	11
Resources	12

## Question and Answers

**Question:** To successfully perform cross-premises eDiscovery searches, which of the following requirements is not true?

- ☐ Exchange Server 2016 or Exchange Server 2013 must be installed in the on-premises Exchange organization.
- ☐ Azure AD Connect must synchronize your on-premises Active Directory Domain Services (AD DS) to Office 365.
- ☐ Hybrid mode is disabled.
- ☐ OAuth must be correctly set up and working.

**Answer:**

- ☐ Exchange Server 2016 or Exchange Server 2013 must be installed in the on-premises Exchange organization.
- ☐ Azure AD Connect must synchronize your on-premises Active Directory Domain Services (AD DS) to Office 365.
- ☒ Hybrid mode is disabled.
- ☐ OAuth must be correctly set up and working.

**Feedback:**

To successfully perform cross-premises eDiscovery searches, ensure that the following requirements are met:

- You have installed Exchange Server 2016 or Exchange Server 2013 in the on-premises Exchange organization.
- Azure AD Connect synchronizes your on-premises Active Directory Domain Services (AD DS) to Office 365.
- You have successfully enabled hybrid mode.
- OAuth is correctly set up and working.

**Question:** Which of the following eDiscovery scenarios does not require OAuth?

- ☐ Searching Exchange on-premises mailboxes and Exchange Online mailboxes in the same eDiscovery search initiated from the Exchange on-premises organization.
- ☐ Searching Exchange on-premises mailboxes that use Exchange Online Archiving for cloud-based archive mailboxes.
- ☐ Searching Exchange Online mailboxes from an eDiscovery search initiated from the Exchange on-premises organization.
- ☐ Searching on-premises mailboxes by using an eDiscovery search initiated from the Exchange on-premises organization.

**Answer:**

- ☐ Searching Exchange on-premises mailboxes and Exchange Online mailboxes in the same eDiscovery search initiated from the Exchange on-premises organization.
- ☐ Searching Exchange on-premises mailboxes that use Exchange Online Archiving for cloud-based archive mailboxes.
- ☐ Searching Exchange Online mailboxes from an eDiscovery search initiated from the Exchange on-premises organization.

☒ ) Searching on-premises mailboxes by using an eDiscovery search initiated from the Exchange on-premises organization.

**Feedback:**

OAuth is not required for searching on-premises mailboxes by using an eDiscovery search initiated from the Exchange on-premises organization. This is because no communications are required outside of the on-premises organization that would be prompted for external authorization.

**Question:** If you have an Exchange Server 2010 environment when you run the **Hybrid Configuration Wizard**, OAuth will automatically be configured.

☐ ) True

☐ ) False

**Answer:**

☐ ) True

☒ ) False

**Feedback:**

In environments that include Exchange Server 2007 or Exchange Server 2010 servers, the **Hybrid Configuration Wizard** does not configure OAuth. Instead, it configures a federation trust for backward compatibility.

**Question:** To successfully enable cloud-based archiving for an on-premises mailbox, an on-premises user account that is being enabled must be synchronized with Office 365 and AD DS. Also, Azure AD synchronization must run before the license is assigned and the online archiving mailbox is provisioned.

☐ ) True

☐ ) False

**Answer:**

☐ ) True

☒ ) False

**Feedback:**

To successfully enable cloud-based archiving for an on-premises mailbox, you must synchronize the enabled on-premises user account with Office 365. AD DS and Azure AD synchronization must run after the license is assigned and the online archiving mailbox is provisioned. (This synchronization happens every 30 minutes by default.)

## Resources

### Configure OAuth in a hybrid Exchange environment



**Additional Reading:** For additional details on the process to access the code for the Windows PowerShell script files, refer to "Configure OAuth authentication between Exchange and Exchange Online organizations" at <https://aka.ms/AA216yp>.

## Use eDiscovery in a hybrid environment



**Additional Reading:** For more information about using OAuth authentication to support eDiscovery in an Exchange hybrid deployment, refer to “Using OAuth authentication to support eDiscovery in an Exchange hybrid deployment” at <http://aka.ms/Qrymiv>.

## Create a cloud-based archive for an on-premises primary mailbox



**Additional Reading:** For additional information on how to configure online archives for on-premises users in a hybrid environment, refer to “Create a cloud-based archive for an on-premises primary mailbox in an Exchange hybrid deployment” at <https://aka.ms/AA2pamh>.

## Troubleshoot the Exchange hybrid deployment



**Additional Reading:** For additional information on troubleshooting a hybrid deployment, refer to “Troubleshoot a hybrid deployment” at <https://aka.ms/AA216yt>.

## Lesson 4

# Configure message compliance and hygiene in a hybrid environment

### Contents:

Question and Answers	15
Resources	16



## Question and Answers

**Question:** After you create a connector to your on-premises organization, Exchange Online Protection will send all messages for all accepted domains to your on-premises mail server.

☐ True

☐ False

**Answer:**

☒ True

☐ False

**Feedback:**

After you create a connector to your on-premises organization, Exchange Online Protection will send all messages for all accepted domains to your on-premises mail server. This means that the messages for all the domains you add in Office 365, Exchange Online Protection will direct the messages to your on-premises mail server. You can specify your email server in the connector by using an IP address or a fully qualified domain name (FQDN).

**Question:** Which of the following features does Exchange Online and Exchange Server 2013 and later make available that Exchange Server 2010 did not? (Select all that apply.)

☐ Microsoft Outlook protection rules

☐ Information Rights Management Services templates

☐ Transport decryption

☐ Information Rights Management (IRM) prelicensing

☐ The improved protection of Outlook messages

**Answer:**

☒ Microsoft Outlook protection rules

☐ Information Rights Management Services templates

☐ Transport decryption

☐ Information Rights Management (IRM) prelicensing

☐ The improved protection of Outlook messages

**Feedback:**

In Exchange Server 2010, the Microsoft Outlook protection rules did not exist.

**Question:** To place one or more users on an In-Place Hold, the investigator's account must be a member of which role group?

☐ The Discovery Management role group

☐ The Organization Management role group

☐ The Litigation role group

☐ None

**Answer:**

☒ The Discovery Management role group

☐ The Organization Management role group

- ☐ The Litigation role group
- ☐ None

**Feedback:**

To place one or more user on an In-Place Hold, the investigator's account must be a member of the Discovery Management role group. This role group can perform conditional searches and holds. The Organization Management role group can place a hold on all user accounts but cannot perform conditional holds. A litigation hold requires Organization Management permissions.

**Question:** Which email encryption option available in Office 365 can additionally place usage restrictions on email based on templates that users apply when composing and sending emails?

- ☐ OME
- ☐ Information Rights Management (IRM)
- ☐ Secure/Multipurpose Internet Mail Extensions (S/MIME)
- ☐ Transport rules

**Answer:**

- ☐ OME
- ☒ Information Rights Management (IRM)
- ☐ Secure/Multipurpose Internet Mail Extensions (S/MIME)
- ☐ Transport rules

**Feedback:**

Information Rights Management (IRM) encrypts and can additionally place usage restrictions on email based on templates that users apply when composing and sending emails.

## Resources

### Use Exchange Online Protection for Exchange on-premises



**Additional Reading:** For a list of IP addresses that Exchange Online Protection uses, refer to "Exchange Online Protection IP addresses" at <http://aka.ms/Jbnjfg>.

### Information Rights Management options in Exchange Online vs. Exchange on-premises



**Additional Reading:** For details on configuring IRM in a hybrid deployment, refer to "Configure IRM in hybrid deployments" at <https://aka.ms/AA216yu>.

### Hold options in a hybrid environment



**Additional Reading:** For details on performing eDiscovery searches and In-Place Holds, refer to "Create an In-Place eDiscovery search in Exchange 2016" at <https://aka.ms/AA21ej3>.

## What is Office 365 Message Encryption?



**Additional Reading:** For additional information on OME, refer to “Set up new Office 365 Message Encryption capabilities” at <https://aka.ms/AA216yw>.

## Module Review and Takeaways

### Best Practices

- You configure a hybrid deployment in one of two ways: either manually or by using the **Hybrid Configuration Wizard** app. We recommend that you use the **Hybrid Configuration Wizard** app, because the wizard handles all necessary configuration settings for you.
- Use the Remote Connectivity Analyzer to test the on-premises environment.
- Regarding the hybrid configuration, implement only the features that your organization needs.
- Test the hybrid deployment before you move production mailboxes.
- When migrating mailboxes, start slowly and then speed up when all the components work.
- Do not change the MX record at first. Change it only after you know that the hybrid deployment works.

### Review Questions

**Question:** What are the supported migration options to Exchange Online, and which of them requires directory synchronization?

**Answer:** Exchange Online supports cutover migrations, Internet Message Access Protocol (IMAP) migrations, PST import, staged migrations, and hybrid migrations. Only the staged and hybrid migrations require directory synchronization with Azure AD Connect. Hybrid migrations also require a single sign-on (SSO) option, such as password synchronization or AD FS, to be configured.

**Question:** Which email encryption option available in Office 365 has the potential risk that email items encrypted with it will not be able to scanned by antivirus solutions?

- ☐ OME
- ☐ Information Rights Management (IRM)
- ☐ Secure/Multipurpose Internet Mail Extensions (S/MIME)
- ☐ All of the above

**Answer:**

- ☐ OME
- ☐ Information Rights Management (IRM)
- ☒ Secure/Multipurpose Internet Mail Extensions (S/MIME)
- ☐ All of the above

**Feedback:**

Secure/Multipurpose Internet Mail Extensions (S/MIME) encrypts email and provides digital signatures for non-repudiation purposes. A potential risk to S/MIME is that email items encrypted with S/MIME cannot be scanned by antivirus solutions.

# Lab Review Questions and Answers

## Lab: Implement the Exchange Server hybrid deployment

### Question and Answers

**Question:** Before moving mailboxes to Exchange Online in a hybrid configuration, what should you verify?

**Answer:** Answers might vary but should include:

- The **Hybrid Configuration Wizard** was run.
- The hybrid configuration is functional.
- The migration endpoint was created.
- The users that are being moved have Office 365 subscriptions.

**Question:** When administering a hybrid configuration, what is the impact of adding or modifying a DLP policy?

**Answer:** DLP policies online and DLP policies on-premises are completely separate from one another. If a change is made to a DLP policy, you must configure it in both locations. It is possible to export policies and templates from one environment and import them into the other. Be cautious, however, because Office 365 makes additional DLP features available that do not exist on-premises.

# Module 5

## Skype for Business hybrid deployment

### Contents:

<b>Lesson 1:</b> Overview of Skype for Business Online and Microsoft Teams	2
<b>Lesson 2:</b> Prepare for the hybrid Skype for Business deployment	6
<b>Lesson 3:</b> Configure the Skype for Business hybrid environment	10
<b>Lesson 4:</b> Use the Skype for Business hybrid configuration with Phone System	14
Module Review and Takeaways	18
Lab Review Questions and Answers	20

## Lesson 1

# Overview of Skype for Business Online and Microsoft Teams

### Contents:

Question and Answers	3
Resources	5

## Question and Answers

**Question:** You should use Skype for Business On-premises if: (select all that apply)

- ☐ Compliance needs to be customized to meet the needs of users.
- ☐ You need a dedicated Front End pool of up to 1,000 participants for meetings.
- ☐ Chat rooms are comprised of Teams.
- ☐ The high availability is 99.9% SLA.

**Answer:**

- ☒ Compliance needs to be customized to meet the needs of users.
- ☐ You need a dedicated Front End pool of up to 1,000 participants for meetings.
- ☐ Chat rooms are comprised of Teams.
- ☐ The high availability is 99.9% SLA.

**Feedback:**

Factor	Skype for Business Online	Skype for Business On-premises
Cost	No hardware/software	Hardware and software must be deployed
High availability	99.9% SLA	Pools and Paired Pools
Management/control	Exchange Administration Center and PowerShell Limited control	EAC and PowerShell Full control
Archiving	IM content Conference content Exchange archiving	IM content Conference content Exchange archiving App and desktop sharing content
Security	IM and media encryption	IM and media encryption IM and file filtering
Chat rooms	Teams	Persistent chat
Compliance	Meets industry standards such as ISO-27001 and FISMA and more	Customized to meet needs
Migration support	Hybrid configuration	Coexistence



		In-place upgrade
XMPP		XMPP Gateway XMPP Proxy
Voice features	Phone System with Calling Plan	Enterprise Voice
Large meetings	Skype Meeting Broadcast – up to 10,000 participants	Dedicated Front End pool – up to 1,000 participants

**Question:** Teams and channels are two components of Teams. Which of the following is not true?

- ☐ Each team consists of team owners and team members.
- ☐ There can be a maximum of 600 owners per team.
- ☐ As a team owner, you can add new members and other owners.
- ☐ When you create a team, the default channel is called General.

**Answer:**

- ☐ Each team consists of team owners and team members.
- ☒ There can be a maximum of 600 owners per team.
- ☐ As a team owner, you can add new members and other owners.
- ☐ When you create a team, the default channel is called General.

**Feedback:**

Each team consists of team owners and team members. There can only be 10 owners per team. As a team owner, you can add new members and other owners. You can also manage team settings such as **enable or disable @mentions**. As a team owner, you can allow .gif files, stickers, memes, and moderation settings in your team. Owners can also rename and delete teams. Each generated team also generates an Office 365 group.

**Question:** Which of the following is an alias (CNAME) resource record that must reference [sipdir.online.lync.com](https://sipdir.online.lync.com)?

- ☐ **Lyncdiscover.domainname**
- ☐ **Sip.domainname**
- ☐ **\_sip.\_tls.domainname**
- ☐ **\_sipfederationtls.\_tcp.domainname**

**Answer:**

- ☐ **Lyncdiscover.domainname**
- ☐ **Sip.domainname**
- ☒ **\_sip.\_tls.domainname**
- ☐ **\_sipfederationtls.\_tcp.domainname**

**Feedback:**

To enable client connectivity to Skype for Business Online, you need to configure the following Domain Name System (DNS) records for your SIP domain:

- **Lyncdiscover.domainname**, which is an alias (CNAME) resource record that must reference **webdir.online.lync.com**.
- **Sip.domainname**, which is an alias (CNAME) resource record that must reference **sipdir.online.lync.com**.
- **\_sip.\_tls.domainname**, which is a service (SRV) resource record that must reference **sipdir.online.lync.com**.
- **\_sipfederationtls.\_tcp.domainname**, which is SRV resource record that must reference **sipfed.online.lync.com**.

## Resources

### Skype for Business Online vs. Skype for Business Server on-premises



**Additional Reading:** For a comprehensive list of available features across the Office 365 plans, including on-premises Skype for Business Server, refer to “Skype for Business Online Service Description” at <http://aka.ms/qelghw>.

## Introducing Teams



**Additional Reading:** For more information, refer to “Microsoft Teams on Mobile Devices” at <https://aka.ms/Jfkze0>.



**Additional Reading:** For more information, refer to “Office 365 URLs and IP address ranges” at <https://aka.ms/AA216y4>.

## Skype for Business Online and Teams subscriptions



**Additional Reading:** For additional details on Skype for Business plans and what features are included with each plan, refer to “Skype for Business Online Service Description” at <https://aka.ms/AA21eig>.



**Additional Reading:** For additional information about licensing Teams refer to “Office 365 licensing for Microsoft Teams” at <https://aka.ms/AA216y9>.

## Implement Teams



**Additional Reading:** For more information, refer to “Microsoft Teams documentation and practical guidance” at <https://aka.ms/Bamwsc>.

## Lesson 2

# **Prepare for the hybrid Skype for Business deployment**

### **Contents:**

Question and Answers	7
Resources	8

## Question and Answers

**Question:** Which of the following is not a feature of a Skype for Business hybrid configuration?

- ( ) Directory synchronization
- ( ) Persistent chat
- ( ) Edge role deployment
- ( ) SIP connectors
- ( ) Unified Messaging

**Answer:**

- ( ) Directory synchronization
- ( ) Persistent chat
- ( ) Edge role deployment
- (√) SIP connectors
- ( ) Unified Messaging

**Feedback:**

Hybrid configuration coexistence features include:

- Directory synchronization
- Edge role deployment
- Unified Messaging

**Question:** To implement a hybrid Skype for Business deployment, in what order must you complete the following prerequisite steps?

Steps
Configure DNS resource records.
Deploy an edge server and enable federation.
Add your on-premises domain to the Office 365 tenant and verify ownership.
Verify that the blocked and allowed domains for federation are identical in both the on-premises and online environments.
Create a tenant account for Office 365 and enable Skype for Business Online.

**Answer:**

	Steps
3	Configure DNS resource records.
4	Deploy an edge server and enable federation.
2	Add your on-premises domain to the Office 365 tenant and verify ownership.
5	Verify that the blocked and allowed domains for federation are identical in both the on-premises and online environments.

	Steps
1	Create a tenant account for Office 365 and enable Skype for Business Online.

**Question:** Which of the following coexistence modes is the only option for Skype for Business Online-only deployments?

- ☐ Islands
- ☐ Skype for Business with Teams collaboration
- ☐ Skype for Business with Teams and Meetings
- ☐ Skype for Business only
- ☐ None of the above

**Answer:**

- ☒ Islands
- ☐ Skype for Business with Teams collaboration
- ☐ Skype for Business with Teams and Meetings
- ☐ Skype for Business only
- ☐ None of the above

**Feedback:**

Islands is the only option for Skype for Business Online-only deployments and is recommended for most organizations. Islands facilitates rapid adoption of Teams with little or no coexistence.

## Resources

### Skype for Business hybrid configurations



**Additional Reading:** For additional information on on-premises topologies including detail on large organizations, refer to "Reference topologies for Skype for Business Server 2015" at <https://aka.ms/AA21eif>.

### Prerequisites for Skype for Business hybrid deployment



**Additional Reading:** To learn more, refer to "Configure a multi-forest environment for hybrid Skype for Business" at <https://aka.ms/AA216yy>.



**Additional Reading:** To learn more, refer to "Skype for Business hybrid solutions" at <https://aka.ms/AA21eia>.



**Additional Reading:** To learn more, refer to "Media Quality and Network Connectivity Performance in Skype for Business Online" at <https://aka.ms/AA216yj>.



**Additional Reading:** To learn more, refer to "Office 365 URLs and IP address ranges" at <https://aka.ms/AA21eip>.

## Hybrid Connectivity options between Skype for Business server and Skype for Business Online



**Additional Reading:** For additional information on planning, refer to: “Plan hybrid connectivity between Skype for Business Server and Skype for Business Online” at <https://aka.ms/AA216ya>.

## Teams hybrid configuration overview



**Additional Reading:** For additional information on the upgrade journey and sample scenarios for hybrid deployments, refer to “Choose your upgrade journey from Skype for Business to Teams” at <https://aka.ms/AA21eih>.

## Lesson 3

# Configure the Skype for Business hybrid environment

### Contents:

Question and Answers	11
Resources	12

## Question and Answers

**Question:** If users are enabled for Skype for Business Online before deploying Skype for Business on-premises, to move users on-premises, in which order should you perform the following steps?

	Steps
	Deploy Skype for Business Server and an edge role.
	Run directory synchronization or wait for the sync interval to complete.
	Configure directory synchronization.
	Enable federation and create a hosting provider for Skype for Business Online.
	Move users.
	Modify DNS records to point to on-premises servers.

**Answer:**

	Steps
1	Deploy Skype for Business Server and an edge role.
4	Run directory synchronization or wait for the sync interval to complete.
2	Configure directory synchronization.
3	Enable federation and create a hosting provider for Skype for Business Online.
6	Move users.
5	Modify DNS records to point to on-premises servers.

**Question:** Which of the following features are affected by the decisions an organization makes when integrating Exchange 2016 on premises and Skype for Business Online?

- ☐ Presence in Outlook
- ☐ Contact List (through unified contact store)
- ☐ Search archived content
- ☐ Exchange UM Voice Mail
- ☐ Archiving content (IM and Meeting) in Exchange

**Answer:**

- ☒ Presence in Outlook
- ☐ Contact List (through unified contact store)
- ☐ Search archived content
- ☐ Exchange UM Voice Mail
- ☐ Archiving content (IM and Meeting) in Exchange



**Feedback:**

<b>Feature</b>	<b>Exchange Online and Skype for Business Server 2015 on premises</b>	<b>Exchange 2016 on premises and Skype for Business Online</b>
Presence in Outlook	Y	Y
Presence in Outlook Web App	Y	N
Respond through IM, PSTN call, Skype call or video call from an Outlook on web email	Y	N
Schedule and join online meetings through Outlook Web App	Y	N
IM/Presence in mobile clients	Y	N
Contact List (via Unified Contact Store)	Y	N
Archiving content (IM and Meeting) in Exchange	Y	N
Search archived content	Y	N
Exchange UM voice mail	Y	Y

**Resources****Configure the Skype for Business hybrid environment by using Skype for Business Server Control Panel and Skype for Business admin center**

**Additional Reading:** Beginning April 2019, only Microsoft can be the conferencing provider for Skype for Business Online users. For more information, refer to “End of life program for the integration of Skype for Business with third-party audio conferencing providers” at <https://aka.ms/AA2pb7n>.

**Integrate Skype for Business with Exchange, SharePoint, and Teams**

**Additional Reading:** For additional information and to see the cmdlets used to configure Exchange on-premises with Skype for Business Online, refer to “Configure OAuth between Skype for Business Online and Exchange on premises” at <https://aka.ms/AA21eiy>.



**Additional Reading:** For additional information on configuring UM integration between Skype for Business and Exchange in a hybrid configuration, refer to “Deploying on-premises Exchange UM to provide Lync Server 2013 voice mail” at <https://aka.ms/AA216y7> and “Providing Lync Server 2013 users voice mail on hosted Exchange UM” at <https://aka.ms/AA21ei8>.



**Additional Reading:** For additional information on configuring interoperability in a hybrid configuration, refer to “Migration and interoperability guidance for organizations using Teams together with Skype for Business” at <https://aka.ms/AA21ein>.

## Lesson 4

# Use the Skype for Business hybrid configuration with Phone System

### Contents:

Question and Answers	15
Resources	16

## Question and Answers

**Question:** Which configuration objects provide additional call control when routing calls to and from external voice solutions and the PSTN?

- ☐ Dial plan voice configuration objects
- ☐ Voice policy configuration objects
- ☐ Route configuration objects
- ☐ PSTN usage configuration objects
- ☐ Trunk configuration objects

**Answer:**

- ☐ Dial plan voice configuration objects
- ☐ Voice policy configuration objects
- ☐ Route configuration objects
- ☐ PSTN usage configuration objects
- ☒ Trunk configuration objects

**Feedback:**

Trunk configuration objects provide additional call control when routing calls to and from external voice solutions and the PSTN. Trunk objects are bound to gateway objects. Unlike other voice objects, trunk and gateway objects are created and published by using Skype for Business Server 2015 Topology Builder. However, they can also be configured by using Skype for Business Server 2015 Control Panel and Skype for Business Server Management Shell. Trunk objects can be configured to manipulate the digits that are either sent or received by using called number translation rules or calling number translation rules.

**Question:** In a hybrid deployment, you must follow a specific process for enabling users for Phone System in Office 365. Put the following steps in the correct order.

Steps
Move Skype for Business on-premises users to Skype for Business Online.
Configure users for Enterprise Voice on-premises.
Create users in Office 365 by using Azure AD Connect and assign licenses.
Configure a voice routing policy and assign it to users.
For moved users, enable Enterprise Voice online and Phone System voicemail.

**Answer:**

Steps
4 Move Skype for Business on-premises users to Skype for Business Online.
1 Configure users for Enterprise Voice on-premises.
3 Create users in Office 365 by using Azure AD Connect and assign licenses.
2 Configure a voice routing policy and assign it to users.

	Steps
5	For moved users, enable Enterprise Voice online and Phone System voicemail.

**Question:** Specify the steps for deploying calling plans. Put the following steps in the correct order.

	Steps
	Define emergency addresses and locations.
	Determine if calling plans are available.
	Purchase and assign calling plans.
	Share the new numbers with your users.
	Request phone numbers for your users.
	Assign phone numbers and emergency addresses.

**Answer:**

	Steps
4	Define emergency addresses and locations.
1	Determine if calling plans are available.
2	Purchase and assign calling plans.
6	Share the new numbers with your users.
3	Request phone numbers for your users.
5	Assign phone numbers and emergency addresses.

## Resources

### What is Enterprise Voice?



**Additional Reading:** For information on qualified gateways, IP-PBX, and SIP Trunking, refer to “Skype for Business certification program” at <https://aka.ms/AA21eid> and review the Infrastructure and Services sections.



**Additional Reading:** For additional information on Enterprise Voice, refer to “Plan your Enterprise Voice solution in Skype for Business Server” at <https://aka.ms/AA216ym>.

### What is Phone System in Office 365 (Cloud PBX)?



**Additional Reading:** For additional information on Phone System features, refer to “Here’s what you get with Phone System in Office 365” at <https://aka.ms/AA216yq>.



**Additional Reading:** To learn more about languages supported by Audio Conferencing, refer to “Audio Conferencing supported languages” at <https://aka.ms/AA216y8>.



**Additional Reading:** For additional information, refer to “End of life program for the integration of Skype for Business with third-party audio conferencing providers” at <https://aka.ms/AA216yb>.

## Enable users for Phone System



**Additional Reading:** For information on how to replace an existing license or make bulk changes using the Microsoft 365 admin center, refer to “Assign licenses to users in Office 365 for business” at <https://aka.ms/AA21eiz>.

## Deploy and configure calling plans



**Additional Reading:** International plans support outbound calling to 196 countries and regions. For a full list of the countries and regions, refer to “Users can make outbound calls to these countries and regions” at <https://aka.ms/AA381fd>.



**Additional Reading:** For a current list of countries and regions where calling plans are available, refer to “Country and region availability for Audio Conferencing and Calling Plans” at <https://aka.ms/AA216y5>.



**Additional Reading:** The script and additional information can be found in “Assign Skype for Business and Microsoft Teams licenses” at <https://aka.ms/AA21eiq>.



**Additional Reading:** For additional information on obtaining numbers for your user with Phone System and calling plans, refer to “Getting phone numbers for your users” at <https://aka.ms/AA21ei9>.

## What is Direct Routing?



**Additional Reading:** For detailed steps on deploying and configuring Direct Routing for Teams, refer to: “Configure Direct Routing” at <https://aka.ms/AA21ej8>.

## Module Review and Takeaways

### Review Questions

**Question:** Which of the following team settings can you configure by using Microsoft Teams & Skype for Business Admin Center during the settings migration? (Select all that apply.)

- ☐ Conference bridge settings
- ☐ Audio conferencing phone numbers
- ☐ Messaging policies
- ☐ External access settings
- ☐ Guest access settings

**Answer:**

- ☒ Conference bridge settings
- ☐ Audio conferencing phone numbers
- ☐ Messaging policies
- ☐ External access settings
- ☐ Guest access settings

**Feedback:**

The features in both tools are frequently changing, as more features are being added to the new Microsoft Teams & Skype for Business Admin Center. Eventually this product will replace the need for two different tools. At the time of writing this course, you cannot configure audio conferencing service phone numbers in the Microsoft Teams & Skype for Business Admin Center. However, you can configure many audio conferencing features and settings in the Microsoft Teams & Skype for Business Admin Center.

**Question:** When using a qualified or supported IP-PBX, Skype for Business Mediation Server communicates directly with the IP-PBX by using SIP/TCP or SIP/TLS. Which of the following is not a function of the Mediation Server?

- ☐ It works as an intermediary in certain scenarios, such as SIP to TDM or H.323, or to other nonqualified call controls.
- ☐ It works only for qualified or supported PBX systems.
- ☐ It provides voice capabilities between endpoints on either call control server.
- ☐ It is incorporated into the Cloud Connector Edition solution.
- ☐ It enables endpoints on both sides to utilize features on the other call control server.

**Answer:**

- ☒ It works as an intermediary in certain scenarios, such as SIP to TDM or H.323, or to other nonqualified call controls.
- ☐ It works only for qualified or supported PBX systems.
- ☐ It provides voice capabilities between endpoints on either call control server.
- ☐ It is incorporated into the Cloud Connector Edition solution.
- ☐ It enables endpoints on both sides to utilize features on the other call control server.

**Feedback:****IP-PBX**

When using a qualified or supported IP-PBX, Skype for Business Mediation Server communicates directly with the IP-PBX by using SIP over TCP (SIP/TCP) or SIP over TLS (SIP/TLS). Skype for Business Server 2015 already uses SIP/TLS for communications between Skype for Business Server 2015 Front End pool and the Mediation Server. The Mediation Server:

- Works only for qualified or supported PBX systems.
- Provides interconnection between IP-PBX and Skype for Business Server 2015.
- Provides voice capabilities between endpoints on either call control server.
- Enables endpoints on both sides to utilize features on the other call control server.
- Provides the simplest method of interoperability, relying on standard SIP protocols.
- Is incorporated into the Cloud Connector Edition solution.

**PBX through Gateway**

If connecting to a TDM or unsupported PBX, then Skype for Business Server 2015 can be connected to the PBX through a qualified gateway. It uses qualified gateways:

- As an intermediary in certain scenarios such as SIP to TDM or H.323, or to other nonqualified call controls. H.323 defines the protocols to provide audio-visual communication sessions on any packet network.
- As a back-to-back user agent (B2BUA) to perform SIP-to-SIP transcoding for calls between Skype for Business Server 2015 and other resources that also use SIP.



## Lab Review Questions and Answers

### Lab: Implement the Skype for Business hybrid configuration

#### Question and Answers

**Question:** When moving users from Skype for Business Server 2015 to Skype for Business Online, what should you do to prevent move errors?

**Answer:** You should verify that Azure AD Connect synchronization includes the user accounts that are being moved. You should also make sure that users have been assigned licenses in Office 365.

**Question:** Which coexistence mode will allow users to run both Skype for Business Clients and Teams?

**Answer:** All coexistence modes allow you to run both. The different modes are used to control the flow of communications when users are running both Skype for Business and Teams clients.

# Module 6

## SharePoint and OneDrive for Business hybrid deployment

### Contents:

<b>Lesson 1:</b> Overview of SharePoint Online	2
<b>Lesson 2:</b> Plan for a SharePoint hybrid deployment	4
<b>Lesson 3:</b> Deploy the SharePoint hybrid configuration	6
<b>Lesson 4:</b> Configure SharePoint services in a hybrid configuration	9
Module Review and Takeaways	11
Lab Review Questions and Answers	12

## Lesson 1

# Overview of SharePoint Online

### Contents:

Question and Answers	3
Resources	3

## Question and Answers

**Question:** What are the two main reasons you might want to deploy SharePoint in hybrid configuration?

**Answer:** Perform staged cloud migration, for:

- Reduced infrastructure and management costs
- Guaranteed availability
- Automatic backups
- Scalability
- Continuous updates

Extend on-premises capabilities to the cloud, for:

- Using PowerApps and Flow for automation
- Easier sharing and external partner site creation
- Improved syncing
- Reduced storage costs

## Resources

### SharePoint Online overview



**Additional Reading:** For more information, refer to “SharePoint Online Service Description” at <https://aka.ms/AA21eir>.

### SharePoint Online subscriptions



**Additional Reading:** For more information about SharePoint Online plans, refer to “Compare SharePoint Online options” at <https://aka.ms/AA216yv>.

## Lesson 2

# Plan for a SharePoint hybrid deployment

### Contents:

Question and Answers	5
Resources	5

## Question and Answers

**Question:** What are some scenarios where you would deploy hybrid federated search in a dual-configuration mode?

**Answer:** Deploying in both outbound and inbound configurations can make sense in several scenarios. These scenarios include:

- Some users work primarily online, and others work primarily on-premises.
- There is even distribution of content across both environments.
- Some users work primarily in one environment and the content is primarily located in the other.
- There is on-premises content that should not be displayed to SharePoint Online users.

## Resources

### Plan hybrid SharePoint taxonomy and hybrid content types



**Additional Reading:** For more information about hybrid SharePoint taxonomy and content types, refer to “Plan hybrid SharePoint taxonomy and hybrid content types” at <https://aka.ms/AA21ej7>.

### Plan hybrid OneDrive for Business



**Additional Reading:** For more information about the SharePoint Migration tool, refer to “Introducing the SharePoint Migration Tool” at <https://aka.ms/AA216yl>.

## Lesson 3

# Deploy the SharePoint hybrid configuration

### Contents:

Question and Answers	7
Resources	7

## Question and Answers

**Question:** Which accounts and permissions do you require for SharePoint hybrid configuration?

- ( ) Azure AD Global Administrator
- ( ) SharePoint Farm Administrator member
- ( ) Office 365 Billing administrator
- ( ) db\_owner database role
- ( ) Securityadmin SQL Server role

**Answer:**

- (√) Azure AD Global Administrator
- ( ) SharePoint Farm Administrator member
- ( ) Office 365 Billing administrator
- ( ) db\_owner database role
- ( ) Securityadmin SQL Server role

**Feedback:**

The user accounts you need for SharePoint hybrid deployment are:

- Office 365 and Azure AD Global Administrator member
- On-premises Active Directory Domain Administrator member
- On-premises SharePoint Farm Administrator member with **securityadmin** and **db\_owner** SQL Server server roles and database roles
- On-premises federated users

## Resources

### Requirements for SharePoint hybrid features



**Additional Reading:** For more information about prerequisites for SharePoint hybrid deployments, refer to "Hardware and software requirements for SharePoint hybrid" at <https://aka.ms/AA216ys>.

### Accounts and permissions in a SharePoint hybrid configuration



**Additional Reading:** For more information about the accounts and permissions needed in a SharePoint hybrid configuration, refer to "Accounts needed for hybrid configuration and testing" at <https://aka.ms/AA216yf>.

### Configure connectivity from SharePoint Server to SharePoint Online



**Additional Reading:** For more information, refer to "Configure OAuth over HTTP (if it is required)" in the webpage "Configure server-to-server authentication from SharePoint Server to SharePoint Online" at <https://aka.ms/AA21eix>.





**Additional Reading:** To download the Microsoft Online Services Sign-in Assistant, go to <https://aka.ms/AA216y6>.



**Additional Reading:** To download the Azure AD Module for Windows PowerShell, go to <https://aka.ms/AA21ej0>.



**Additional Reading:** To download the SharePoint Online Management Shell, go to <https://aka.ms/AA21ej5>.

## Overview of migration to SharePoint Online



**Additional Reading:** Download the SharePoint Migration Assessment Tool from <https://aka.ms/AA216yh>.



**Additional Reading:** Download the SharePoint Migration Tool from <https://aka.ms/AA216yi>.

## Lesson 4

# Configure SharePoint services in a hybrid configuration

### Contents:

Question and Answers	10
Resources	10

## Question and Answers

**Question:** How do you configure self-service site creation when hybrid sites are already configured by using the SharePoint Hybrid Picker?

**Answer:** You can configure self-service site creation from within **Central Administration** by performing the following steps:

1. In **Central Administration**, open the **Application Management** page.
2. Under **Site Collections**, select **Configure self-service site creation**.
3. Select the web application that you want to manage, and then select **Create Site collections in SharePoint Online**.

## Resources

### Configure OneDrive for Business in a hybrid configuration



**Additional Reading:** For more information, refer to the "Create an audience (if necessary)" section in the webpage "Configure hybrid OneDrive for Business" at <https://aka.ms/AA216y3>.

### Configure user profiles in a SharePoint hybrid deployment



**Additional Reading:** For more information, refer to "Introducing Bulk UPA Customer Profile Properties Update API for SharePoint Online" at <https://aka.ms/AA21ej1>.

### Configure cloud hybrid search



**Additional Reading:** For more information, refer to the Microsoft Download Center at <https://aka.ms/AA21eil>.

# Module Review and Takeaways

## Review Questions

**Question:** Why should you use an STS certificate from a public CA when configuring a hybrid SharePoint deployment?

**Answer:** A publicly signed certificate is more secure than a self-signed certificate. Also, self-signed certificates might cause problems with other applications.

## Lab Review Questions and Answers

### Lab: Implement SharePoint and OneDrive for Business in a hybrid configuration

#### Question and Answers

**Question:** If the scenario required displaying search results from both environments in both SharePoint Server and SharePoint Online, what change would have to make to your network?

**Answer:** You would need to configure hybrid federated search and add a reverse proxy device to your network.

**Question:** What additional steps related to the search experience should you take if you decide to proceed with moving to SharePoint Online?

**Answer:** You need to look at your search topology and architecture to ensure that it will support your organization. For each 1 TB of storage in your tenant, you can index up to 1 million items of on-premises content, up to 20 million items total. You should also consider scale, and add an application server with the Crawl search component, if needed.

# Module 7

## Deploying additional Office 365 services in a hybrid deployment

### Contents:

<b>Lesson 1:</b> Implement Multi-Factor Authentication in a hybrid scenario	2
<b>Lesson 2:</b> Implement Azure Information Protection	4
<b>Lesson 3:</b> Implement Azure AD Identity Protection and Azure AD Privileged Identity Management	6
Module Review and Takeaways	8
Lab Review Questions and Answers	9

## Lesson 1

# **Implement Multi-Factor Authentication in a hybrid scenario**

### **Contents:**

Question and Answers

3

## Question and Answers

**Question:** If you want to use Multi-Factor Authentication for Office 365 and Intune, do you have to deploy Multi-Factor Authentication Server?

**Answer:** No. Microsoft Azure Multi-Factor Authentication Server is needed only when you want to use Multi-Factor Authentication as an additional method of authentication for on-premises services.



## Lesson 2

# Implement Azure Information Protection

### Contents:

Question and Answers	5
Resources	5

## Question and Answers

**Question:** What is the disadvantage of configuring a protected document to be immediately revocable?

**Answer:** When you configure a protected document to be immediately revocable, the recipient of the document must authenticate to Microsoft Azure Rights Management Services (Azure RMS) every time they open the document.

## Resources

### What is Azure Information Protection?



**Additional Reading:** For more information about Azure Information Protection, refer to "What is Azure Information Protection?" at <https://aka.ms/Ty1miv>.



**Additional Reading:** For more information, refer to "Azure Information Protection" at <http://aka.ms/wqy43u>.

### Monitor protected resources



**Additional Reading:** For more information about tracking and revoking your documents when you use the RMS sharing application, refer to "Track and revoke your documents when you use the RMS sharing application" at <http://aka.ms/u3ugcp>.

## Lesson 3

# Implement Azure AD Identity Protection and Azure AD Privileged Identity Management

### Contents:

Question and Answers	7
Resources	7

## Question and Answers

**Question:** You can use Azure AD Privileged Identity Management to manage privileges for both local and cloud-based resources.

☐ True

☐ False

**Answer:**

☐ True

☒ False

**Feedback:**

Currently, Azure AD Privileged Identity Management can manage privileges only for cloud-based resources. You can use Privileged Access Management to manage privileges for local resources.

## Resources

### What is Azure AD Identity Protection?



**Additional Reading:** For more information, refer to "Azure Active Directory Identity Protection" at <https://aka.ms/AA21eis>.

## Module Review and Takeaways

### Best Practices

- Suggest that users use the mobile app as a multi-factor authentication method.
- Use Multi-Factor Authentication Server to protect VPN connections.
- Help to protect privileged role activation with Multi-Factor Authentication.
- Configure Multi-Factor Authentication messages in the local language to make this service easier for your users to use.
- When helping to protect content, configure documents to have immediate revocation if the files are sensitive or if your organization has a high-security environment.
- If you have Exchange, SharePoint, and Windows Server FCI, you should integrate all three with Azure RMS to expand the availability of data protection.

### Review Question

**Question:** Adatum Corporation requires their applications to use multi-factor authentication. The organization has implemented this technology in its on-premises infrastructure and wants to extend it for applications and resources that reside in Azure. Adatum Corporation wants to use authentication methods that are similar to those they are currently using in the on-premises infrastructure. Can they use Multi-Factor Authentication for this and, if so, why?

**Answer:** Yes, they can use Multi-Factor Authentication. Microsoft Azure Multi-Factor Authentication Server supports the following authentication methods to complement usernames and passwords:

- A phone call
- A two-way text message
- A two-way text message with a PIN
- A one-way text message
- A one-way text message with a PIN
- An Open Authorization (OAuth) token
- The mobile app

### Common Issues and Troubleshooting Tips

Common Issue	Troubleshooting Tip
Multi-Factor Authentication does not work for VPN connections.	Ensure that you configured your VPN server or VPN appliance as the RADIUS client for Multi-Factor Authentication Server.
You cannot activate Azure Information Protection.	A standard Azure subscription doesn't include use rights for Azure Information Protection. Therefore, you won't be able to activate Azure Information Protection. To activate Azure Information Protection, you must have an Office 365 subscription, an Azure Information Protection P1 or P2 subscription, an Enterprise Mobility + Security subscription, or RMS for an individual subscription.

# Lab Review Questions and Answers

## Lab: Configure additional Office 365 services in hybrid deployments

### Question and Answers

**Question:** You want to enforce multi-factor authentication for your business-critical website. What should you use?

**Answer:** You should use Microsoft Azure Multi-Factor Authentication Server deployed on-premises.

**Question:** What app should you use to help protect JPEG files with Azure Information Protection?

**Answer:** You should use the Azure Information Protection client app for Windows.

# Module 8

## Authentication options in hybrid deployments

### Contents:

<b>Lesson 1:</b> Deploy AD FS for SSO in an Office 365 hybrid environment	2
<b>Lesson 2:</b> Deploy pass-through authentication for SSO in Office 365	4
Module Review and Takeaways	6
Lab Review Questions and Answers	8

## Lesson 1

# Deploy AD FS for SSO in an Office 365 hybrid environment

### Contents:

Question and Answers	3
Resources	3



## Question and Answers

**Question:** If your local AD FS infrastructure fails and you have SSO deployed for your Office 365 users, what should you do as a transition solution?

**Answer:** You can switch to directory synchronization with password hash synchronization until you restore your AD FS infrastructure.

**Question:** Do you need to perform directory synchronization when using SSO with AD FS for Office 365?

**Answer:** Yes, you still need to have directory synchronization enabled. However, you don't need to use password hash synchronization.

## Resources

### What is claims-based authentication?



**Additional Reading:** For a full list of definitions of terms associated with claims-based identity, refer to Claims-based identity term definitions at <http://aka.ms/wnc2ys>.

### Integrate applications with Azure AD



**Reference Links:** You can access the Azure AD application gallery from: <https://aka.ms/Wqkz4c>.

## Lesson 2

# Deploy pass-through authentication for SSO in Office 365

### Contents:

Question and Answers	5
Resources	5

## Question and Answers

**Question:** When you use pass-through authentication, all authentication requests from Office 365 are pushed to your local AD DS domain controller.

☐ True

☐ False

**Answer:**

☐ True

☒ False

**Feedback:**

When you use pass-through authentication, all authentication requests from Office 365 are not pushed to the local AD DS domain controller. Instead, they are directed to the Authentication Agent running on a separate server.

**Question:** Does pass-through authentication use the same technology to authenticate users as AD FS?

**Answer:** No, it does not. AD FS and pass-through authentication use the same authentication technology only in one step of the whole process—when the authentication is verified against the local domain controller.

## Resources

### How pass-through authentication works



**Additional Reading:** For more information, refer to Azure Active Directory Pass-through Authentication security deep dive at <https://aka.ms/AA21eiu>.

### Deploy pass-through authentication



**Additional Reading:** For more information on Azure AD Seamless SSO, refer to Azure Active Directory Seamless Single Sign-On at <https://aka.ms/AA216ye>.

## Module Review and Takeaways

### Best Practices

- If you configure SSO with AD FS, always provide a high-availability infrastructure for AD FS.
- Be aware that in an SSO-with-AD FS scenario, your local internet link becomes even more critical.
- Ensure that you have at least two authentication agents deployed for pass-through authentication.

### Review Question

**Question:** As you might have experienced, when authenticating to AD FS for accessing online services, a user is required to authenticate the first time. On subsequent attempts to the same online services, the user is not required to authenticate because the client will continue to present the same token until the token expires.

While all clients (internal/external) will eventually have to request a new token, your organization's security policies require that external users request a new token at least once every 5 minutes, and internal users request a new token at least once every 10 minutes.

What settings or policies should you use to enforce this?

**Answer:** On the Web Application Proxy servers:

- Use the Windows PowerShell **Set-AdfsWebApplicationProxyRelyingPartyTrust –TokenLifeTime** cmdlet to set the Web Application Proxy Token Lifetime value to five minutes.

On the AD FS servers:

- Use the Windows PowerShell **Set-AdfsProperties –SSOLifeTime** cmdlet to set the AD FS SSO Cookie Lifetime value to 10 minutes.
- Use the Windows PowerShell **Set-AdfsRelyingPartyTrust –TokenLifeTime** cmdlet to set the Relying Party Trust Token Lifetime value to 20 minutes.

While there are many token lifetime settings in AD FS, these are critical as they affect most client requests for tokens. For external requests, all three settings are considered. The Web Application Proxy Token Lifetime should be set lower for external requests. When this token expires, the client will be redirected to AD FS for a new token.

For internal requests, only the AD FS SSO Cookie Lifetime and the Relying Party Trust Token Lifetime are considered. These values should be set higher for internal requests. Although the value for the Relying Party Trust Token Lifetime is 20 minutes, each of the Relying Party Trust Token Lifetime settings is skewed forward by 10 minutes. This is because the default value for SharePoint's **SPSecurityTokenServiceConfig –LogonTokenCacheExpirationWindow** is set to 10. This setting instructs the SharePoint Security Token Service to invalidate an SAML token 10 minutes before it expires so that a user can obtain a fresh token without disruption.

### Real-world Issues and Scenarios

When accessing cloud services with SSO, the credentials prompt can be avoided only when you are accessing the cloud service using the same account used to sign in to the workstation. You might experience the following issues when you choose to save credentials:

If a user selects the **Save password** check box in the credential prompt, they are choosing to save their credentials in the Credential Manager for use with AD FS. The saved credentials will only provide an SSO experience until the user changes the password. If the Credential Manager is not updated with the user's

new password, it will continue to use old credentials. After a number of failed attempts with the expired saved credentials, the Credential Manager will prompt the user for the new credentials.

If user A is logged on to the workstation and wants to access user B's mailbox, AD FS will prompt user A for user B's credentials. Once user B's credentials have been entered and the user is authenticated, the browser could cache user B's credentials and would reuse them if the same instance of the browser is used to access the same application or authenticate through the same AD FS service. Therefore, a user might need to sign out and sign back in or restart the computer to clear the browser cache.



**Note:** You might need to clear saved credentials during troubleshooting. From the client computer, use Credential Manager, available from the Control Panel, to locate and remove the saved credentials.

## Lab Review Questions and Answers

### Lab: Implement authentication solutions in hybrid deployments

#### Question and Answers

**Question:** What was the purpose of the **Convert-MsolDomainToFederated** cmdlet that you executed in the lab?

**Answer:** This cmdlet converts the domain that was configured in Azure AD to a federated domain. By doing this, you configure Azure AD to redirect authentication requests to your local AD FS and AD DS.

**Question:** What do you achieve by implementing Azure AD Seamless SSO with pass-through authentication?

**Answer:** With Azure AD Seamless SSO, your domain users with accounts synchronized to Office 365 (Azure AD) can access Office 365 resources without having to enter credentials in their web browsers once they successfully sign in to the AD DS domain.