20339-1A

Planning and Administering SharePoint 2016

Companion Content

Microsoft

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Revised July 2013

Module 1

Introducing SharePoint 2016

Contents:

Lesson 1
Key components of a SharePoint deployment

Contents:

Question and Answers

Question: Give some examples of term sets and what they might contain.

Answer: Answers might include but are not limited to the following:

- A job posting. This might include items such as Name, Contact info, Requirements, Job Duties, and Education needed.

- Event registration. This might include items such as Event name, Location, Size of booth, Attendee count, and Contact information.

Lesson 2
New features in SharePoint 2016

Contents:

Question and Answers

Question: How does removing Excel Services from SharePoint 2016 affect organizations?

> **Answer:** Removing Excel Services from SharePoint 2016 has a major impact on organizations that are using the BI areas of Excel Services already, and do not have an alternate infrastructure for running the BI services.
>
> Another impact is that organizations must set up SQL Server 2016 to keep their existing BI relationships working, and without which you will not have access to any of the new features that Excel Services offer.

Demonstration: Examining SharePoint 2016 Central Administration

Demonstration Steps

1. Make sure to follow the startup directions in the preparation section before continuing.

2. Go to the Start screen. You might have to click the down-arrow icon to see all the programs. Click **SharePoint 2016 Management Shell**.

3. After the shell loads, verify that the prompt is **C:\Users\administrator.CONTOSO>_**.

4. At the command prompt, type the following command, and then press enter:

   ```
   psconfig.exe –help configdb
   ```

5. Scroll to the top of the output and point out the new **–localserverrole** cmdlet and the six roles possible with the MinRole farm topology.

6. Exit SharePoint 2016 Management Shell.

7. On the Start screen, click **SharePoint 2016 Central Administration**.

8. On the Home page of the Central Administration site, click **System Settings**.

9. On the **System Settings** page, under Servers, click **Convert server role in this farm**.

10. Click the **New Role** drop-down list box, and point out the same six roles that are available. Do not change the current setting.

📝 **Note:** The PowerShell WebFrontEnd is equivalent to the SharePoint 2016 Central Administration's drop-down option **Front End**.

11. Click **Cancel**.

12. In a new browser tab, navigate to **http://sharepoint.contoso.com**.

13. If prompted, sign in with **administrator** as the username and **Pa$$w0rd** as the password.

14. In the left navigation pane, click **Documents**.

15. At the top-left corner of the ribbon, click the **FILES** tab, and then click **New Folder** to create a new folder.

16. Name the folder **This…is…a {test} of the expanded & special characters**, and then click **Create**.

Lesson 3
SharePoint 2016 deployment options

Contents:

Resources

SharePoint Online deployments

Reference Links: SharePoint Online is updated regularly, so any table of feature comparisons with the on-premises SharePoint release is inevitably going to become outdated. For the latest description of the features in SharePoint Online, refer to SharePoint Online Service Description: http://aka.ms/We3icx

Module Review and Takeaways

Best Practices

The following are some of the added shortcut key combinations, to perform basic library tasks:

- Alt+N. Open a new document.
- Alt+E. Edit a document.
- Alt+U. Upload a document to the library.
- Alt+S. Share the document.

Use one of the following methods to provision SharePoint 2016 Central Administration on a server within a farm.

- In the Central Administration site, click **System Settings**, and then click **Services on Server**.
- In Windows PowerShell, type the following cmdlet, and then press Enter:

```
New-SPCentralAdministration
```

Provisioning SharePoint 2016 Central Administration on a server within the farm will not affect the role assigned to the server in the MinRole feature. For deprovisioning, use the **Remove-SPCentralAdministration** cmdlet.

Things to remember:

- Define your organization's term sets before implementing SharePoint sites. This helps you create a better experience for your users in terms of data storage and retrieval.
- Because SharePoint 2016 does not support single-server farms, you must plan for more hardware and decide on the exact roles that should run on the farm servers.
- Implement new encryption, SMTP port settings, and IRM to provide a more secure environment.
- To utilize the Excel Services fully, you need a combination of SharePoint 2016 and Microsoft SQL Server 2016.
- SharePoint 2016 allows you to create a more seamless hybrid environment.

Review Questions

Question: How would the MinRole feature help in deploying, efficiency, and speed of your server farm?

> **Answer:** When you know what role a new server will have in your server farm, you no longer need to worry about what services to turn on or turn off. The network latency reduces and reliability increases because the topology is more efficient in server-to-server communication.

Question: Which of the following is a new feature in SharePoint 2016?

( ) PerformancePoint integration

( ) Team site template

( ) SMTP connection encryption

( ) HTML5 view for mobile browsers

( ) Microsoft SharePoint Workspace

> **Answer:**
>
> ( ) PerformancePoint integration
>
> ( ) Team site template
>
> (√) SMTP connection encryption
>
> ( ) HTML5 view for mobile browsers

(   ) Microsoft SharePoint Workspace

Feedback:

SMTP connection encryption is a new feature in SharePoint 2016 that changes an unsecure text message to a secured TLS or SSL encryption.

Question: SharePoint Online Plan 2 accomplishes everything that SharePoint 2016 can.

(   ) True

(   ) False

Answer:

(   ) True

(√) False

Feedback:

A SharePoint 2016 deployment has many features that SharePoint Online does not support. However, the SharePoint 2016 hybrid model creates more functionality than either platform can do on their own.

Module 2
Designing an information architecture

Contents:

Lesson 1
Identifying business requirements

Contents:

Question and Answers

Question: What is the best way to gather the business requirements when looking at a new architecture?

( ) Gather data from the current system and determine the requirements through analysis.

( ) Ask all of those that will be end users of the new system.

( ) Gather a team made up of business and IT sponsors, key stakeholders, and business users.

( ) Write down all the requirements you personally can think of and then run them by the users.

Answer:

( ) Gather data from the current system and determine the requirements through analysis.

( ) Ask all of those that will be end users of the new system.

(√) Gather a team made up of business and IT sponsors, key stakeholders, and business users.

( ) Write down all the requirements you personally can think of and then run them by the users.

Feedback:

Bringing a good team together will help you get broad coverage of what is really needed. It is just as important to have end users and business staff as it is to have the sponsors and management that set the goals and have the funding.

Question: Scaling and performance are which type of requirements?

( ) Functional requirements

( ) Nonfunctional requirements

Answer:

( ) Functional requirements

(√) Nonfunctional requirements

Feedback:

You will spend the most time on functional requirements, but do not ignore the nonfunctional items. They are quite important to the success of your planning.

Module Review and Takeaways

Review Questions

Question: When you undertake an information architecture design project, which of the following elements define the culture of the organization and how information flows between contributors and consumers?

( ) Context

( ) Design

( ) Goals

( ) People

( ) Technology

> **Answer:**
>
> (√) Context
>
> ( ) Design
>
> ( ) Goals
>
> ( ) People
>
> ( ) Technology
>
> **Feedback:**
>
> Although all of the elements influence an information architecture context, ensure that you understand the culture of the organization and how information flows between contributors and consumers.

Question: Which of the following names describes a list of related terms?

( ) Term

( ) Term set

( ) Term group

( ) Term group manager

( ) Contribution

> **Answer:**
>
> ( ) Term
>
> (√) Term set
>
> ( ) Term group
>
> ( ) Term group manager
>
> ( ) Contribution
>
> **Feedback:**
>
> A term set is a list of related terms. For example, a term set might be a list of all the office locations of a company or a list of all project identification codes. A term set can be a flat list or a hierarchical list. You can use a term set as the target for a managed metadata column type.

Question: An organizational taxonomy is most widely used in Enterprise Content Management.

( ) True

( ) False

> **Answer:**
>
> (√) True
>
> ( ) False
>
> **Feedback:**
>
> Taxonomy is the logical organization of content in an Enterprise Content Management system. Although this is not strictly the same as information architecture, which includes the logical and physical storage and retrieval of content, taxonomy design often falls within the scope of the information architecture designer.

Real-world Issues and Scenarios

SharePoint 2016 is a system that always exists between the business-process side of the company and the technical-functionality side. The adoption of SharePoint as a solution is very difficult in a business that is entrenched in daily workflows and processes that seem impossible to duplicate in any system. By using a well-structured information architecture and showing interest in truly mapping current processes to the system, you can see stakeholders and users begin to adopt SharePoint 2016 as a tool that helps them get their jobs done.

Companies will set up SharePoint 2016 and begin to throw file folders full of information into SharePoint libraries. It seems to be a good solution, and if not, at least it looks better than the network drive. Too often though, SharePoint becomes bogged down with information that has not been identified with any metadata. Users get frustrated and find that even if it does look better, it is not meeting the need to quickly get information back out. This type of installation will sabotage your deployment. Using an information architecture will give you a system that can properly store and quickly identify information so that users notice a benefit over the old method of storage, whatever it might have been before SharePoint 2016.

Remember, that SharePoint 2016 is not be the solution for everything. Too often, stakeholders do not understand this and employ SharePoint as the enforcer of company policy and procedures, or they cannot figure out why it is taking users longer to do simple tasks. If it does not fit, find another way to satisfy users with a solution. Your information architecture should never be about the software solution but about all-around solutions to the requirements of the business.

Module 3

Designing a logical architecture

Contents:

Lesson 1
Overview of the SharePoint 2016 logical architecture

Contents:

Resources

What is a logical architecture?

Additional Reading: For detailed information on software boundaries, refer to Software boundaries and limits for http://aka.ms/Xnijrt

Module Review and Takeaways

Review Questions

Question: Which is a functional requirement of a logical architecture?

( ) Compliance with capacity standards

( ) Adherence to performance goals

( ) The integral ability to service business continuity service level agreements

( ) Conformance with regulatory or statutory audit rules

( ) The assurance of scalability against future growth

>   **Answer:**
>
>   ( ) Compliance with capacity standards
>
>   ( ) Adherence to performance goals
>
>   ( ) The integral ability to service business continuity service level agreements
>
>   (√) Conformance with regulatory or statutory audit rules
>
>   ( ) The assurance of scalability against future growth
>
>   **Feedback:**
>
>   Conformance with regulatory or statutory audit rules represents a functional requirement of the business. The others—capacity, performance, business continuity, and scalability—are all nonfunctional requirements.

Question: A logical architecture documents the nonphysical structure of a solution that is designed to fulfill business requirements.

 ( ) True

( ) False

>   **Answer:**
>
>   (√) True
>
>   ( ) False
>
>   **Feedback:**
>
>   That is correct. A logical architecture documents the nonphysical structure of a solution that is designed to fulfill business requirements. Physical components, such as servers, are documented in the physical architecture.

Module 4

Designing a physical architecture

Contents:

Lesson 1
Designing physical components for SharePoint deployments

Contents:

Question and Answers

Discussion: Selecting the recovery model

Question: Which recovery model will you use for the farm configuration database and the Central Administration content database in production environments?

> **Answer:** You can use either the full or the simple database recovery model for the farm configuration database and the SharePoint 2016 Central Administration (Central Administration) content database. It is worth considering that using the simple database recovery model for these databases can ease log file growth in SQL Server. Because the content of these databases typically does not change frequently, most organizations are less concerned about recovering the databases to the time of failure. However, if you use database mirroring or AlwaysOn Availability Groups in SQL Server 2012 to protect these databases, you must use the full database recovery model. Both databases must be on the same server running SQL Server.

Discussion: Nonfunctional requirements

Question: Can you provide any additional examples of nonfunctional requirements?

> **Answer:** Additional examples of nonfunctional requirements include those related to:

- Performance

- Scalability

- Availability

- Interoperability

Resources

Hardware requirements

Additional Reading: For more information, refer to Hardware and Software Requirements for Installing SQL Server 2016: http://aka.ms/C072fb

Additional Reading: For more information, refer to Hardware and software requirements for SharePoint 2016: http://aka.ms/Vj15pi

Software requirements

Additional Reading: Depending on the version of Windows Server on which you plan to install SharePoint 2016, you might need specific hotfixes to support the installation. For more information about the hardware and software requirements for SharePoint 2016, refer to Hardware and software requirements for SharePoint 2016: http://aka.ms/Vj15pi

Additional Reading: For more information about the business intelligence feature requirements, refer to Software requirements for business intelligence (SharePoint Server 2016): http://aka.ms/I9z8bw

Virtualization considerations

Additional Reading: For more information about configuring a virtual environment to support SharePoint, refer to Use best practice configurations for the SharePoint virtual machines and Hyper-V environment: http://aka.ms/Krn36m

For more information about planning a virtualized deployment of SharePoint, refer to Plan for on-premises or hosted virtualization in SharePoint : http://aka.ms/A4xj6u

Database configuration options

Additional Reading: For an overview of recovery models, refer to Recovery Models (SQL Server): http://aka.ms/Ne91n2

For more information about how to choose the recovery model for a database, refer to Choosing the Recovery Model for a Database: http://aka.ms/Wiqr37

For more information about the default configurations and growth of SharePoint databases, refer to Database types and descriptions: http://aka.ms/A9lw49

Lesson 2
Designing supporting components for SharePoint deployments

Contents:

Question and Answers

Discussion: Advantages of a SharePoint Online deployment

Question: What advantages does a SharePoint Online deployment have over an on-premises deployment?

>**Answer:** SharePoint Online deployments have several advantages over on-premises deployments. SharePoint Online deployments:

- Provide highly available environments with a 99.95 percent uptime service level agreement.

- Allow you to quickly provision a SharePoint farm.

- Stay easy to scale from small to medium to large deployments.

- Provide additional security over extranet scenarios, because the data stored in SharePoint Online is separated from internal data.

- Provide access to Microsoft OneDrive for Business, which allows for the storage of files in the cloud, which, in turn, both helps to reduce the requirement for backups and drive maintenance and gives users access to their files from virtually anywhere.

Question: What advantages does an on-premises deployment have over SharePoint Online?

>**Answer:** An on-premises SharePoint deployment includes business intelligence features that give you the ability to use SQL Server Reporting Services in the SharePoint integrated mode and other business intelligence capabilities, such as PerformancePoint Service.

Question: What are some advantages of implementing a hybrid configuration of SharePoint?

>**Answer:** A hybrid configuration of SharePoint provides you with access to:

- OneDrive for Business, which allows for the storage of files in the cloud. This helps to reduce the requirement for backups and drive maintenance and gives users access to their files from virtually anywhere.

- New cloud technologies that you do not get with only an on-premises deployment option. For example, in a hybrid deployment, you get access to Office Delve, which is an online service that helps you to find information that is important or relevant to you.

Resources

Design requirements for SQL Server

Additional Reading: For more information about high availability in SQL Server 2016, refer to High Availability Solutions (SQL Server): http://aka.ms/Dk4u1k

Design considerations for SharePoint Online and hybrid deployments

Additional Reading: For more information about SharePoint Online and SSO, refer to Single sign-on roadmap: http://aka.ms/Kvngv1

Lesson 3
SharePoint farm topologies

Contents:

Question and Answers

Discussion: Advantages of separate farms for content publishing

Question: What are the advantages of having a separate farm for content publishing?

Answer: The advantages of having a separate farm for content publishing include:

- You can configure the servers and services in the publishing farm for browsing performance rather than for editing and collaboration performance.

- You can place the servers in the publishing farm in a security-enhanced perimeter network for Internet-based access.

- Publishing content in a separate farm increases security when anonymous access is granted.

Resources

Single-farm topologies

Additional Reading: For more information about server farm topologies, refer to Technical Diagrams for SharePoint: http://aka.ms/Etu8o7 and Traditional topologies for SharePoint : http://aka.ms/Pxdv6x

Multiple farms for content publishing

Additional Reading: For more information about designing content deployment topologies, refer to Design content deployment topology (SharePoint Server): http://aka.ms/Wtbzi6

SharePoint 2016 hybrid deployments

Additional Reading: For more information about hybrid deployments, refer to Office | Hybrid: http://aka.ms/Gx3cxd

Module Review and Takeaways

Review Questions

Question: Which SQL Server database recovery model is not suitable for SharePoint 2016 databases?

> **Answer:** The bulk-logged database recovery model is not suitable for SharePoint 2016 databases. You should use only the simple database recovery and full database recovery models with SharePoint 2016 databases.

Question: Can you add SSL certificates to SharePoint web applications by using the Central Administration site?

> **Answer:** No. You must add SSL certificates to web applications by using IIS Manager. We recommend that you use SSL for your farm regardless of whether it exists on an internal network or is exposed to the Internet.

Question: In an organization with two collaborative SharePoint farms, is it possible to share content types from Farm A to Farm B and simultaneously share content types from Farm B to Farm A?

> **Answer:** Yes. The Managed Metadata Service application enables content types to be simultaneously published and consumed among multiple farms.

Question: Which supporting component is required to support SSO with on-premises Active Directory and SharePoint Online deployments?

(   ) Active Directory Rights Management Services (AD RMS)

(   ) Active Directory Federation Services (AD FS)

(   ) Active Directory Lightweight Directory Services (AD LDS)

(   ) Active Directory Certificate Services (AD CS)

(   ) A reverse proxy

> **Answer:**
>
> (   ) Active Directory Rights Management Services (AD RMS)
>
> (√) Active Directory Federation Services (AD FS)
>
> (   ) Active Directory Lightweight Directory Services (AD LDS)
>
> (   ) Active Directory Certificate Services (AD CS)
>
> (   ) A reverse proxy
>
> **Feedback:**
>
> To support SSO with on-premises Active Directory and SharePoint Online deployments, you need AD FS.

Module 5
Installing and configuring SharePoint 2016

Contents:

Lesson 1
Installing SharePoint 2016

Contents:

Question and Answers

Question: Why would you want to run the SharePoint prerequisite installer in offline mode?

> **Answer:** For consistency of installation for all servers. Having the prerequisite files in a file share means that all servers will be installed using the same bits. Plus, you will not have to continually re-download each prerequisite file on each server you add to the SharePoint farm

Question: Why would you want to use SQL Alias?

> **Answer:**
> - To create friendly names for SharePoint's databases instead of using SQL Server instance names.
> - Greater flexibility to move SQL server instances or databases from one SQL Server instance to another.

Resources

Installing SharePoint 2016 prerequisites

Additional Reading: For more information, refer to the "Hardware and software requirements for SharePoint 2016": http://aka.ms/W8myn2

Installation Topologies

Additional Reading: For more information, refer to Install SharePoint 2016 on a single server with SQL Server: http://aka.ms/Kzwzkk

Additional Reading: For more information, refer to Install SharePoint across multiple servers for a three-tier farm: http://aka.ms/Icun9g

Lesson 2
Scripting installation and configuration of SharePoint 2016

Contents:

Question and Answers

Question: Why would you want to install SharePoint 2016 by using the config.xml file?

Answer: For consistency of installation.

Question: You can slipstream updates on which servers?

( ) Workflow Manager Server and Office Online Server

( ) SharePoint 2016 and SQL Server 2016

( ) SharePoint 2016, SQL Server 2016, and Office Online Server

( ) SharePoint 2016

( ) Workflow Manager Server and SharePoint 2016

Answer:

( ) Workflow Manager Server and Office Online Server

( ) SharePoint 2016 and SQL Server 2016

( ) SharePoint 2016, SQL Server 2016, and Office Online Server

(√) SharePoint 2016

( ) Workflow Manager Server and SharePoint 2016

Lesson 3
Configuring SharePoint 2016 farm settings

Contents:

Question and Answers

Question: In your production environment, it is perfectly safe to use the *–allowOAuthHttp* parameter for workflow and the *–AllowHTTP* parameter for Office Online Server.

(   ) True

(   ) False

> **Answer:**
>
> (   ) True
>
> (√) False
>
> **Feedback:**
>
> All of your environments, development and production, should use HTTPS because you will not want to pass your OAuth tokens from server to server unencrypted.

Question: What is the default port for a SMTP Server?

(   ) 22

(   ) 52

(   ) 25

(   ) 55

(   ) 32

> **Answer:**
>
> (   ) 22
>
> (   ) 52
>
> (√) 25
>
> (   ) 55
>
> (   ) 32

Resources

Configuring incoming email

🌐   **Additional Reading:** The steps to configure email in an advanced scenario are beyond the scope of this course. For more information, refer to Configure incoming email in an advanced scenario and Prepare your environment for incoming email in an advanced scenario: http://aka.ms/Wuohzi

Configuring workflow management

🌐   **Additional Reading:** To install and configure Workflow Manager, refer to Installing and Configuring Workflow: http://aka.ms/Gzmq77

🌐   **Additional Reading:** To verify this and for instructions on doing so, refer to Installing Workflow Manager certificates in SharePoint Server : http://aka.ms/Xe5qcq

Module Review and Takeaways

Review Questions

Question: When choosing a single server deployment with a built-in database which of the following statements is true?

( ) SharePoint will use SQL Server 2008 R2 as the database engine, which does not have any size restrictions.

( ) SharePoint will use SQL Server 2008 R2 Express as the database engine, which has a maximum database size limit of 10 GB.

( ) SharePoint will use SQL Server 2012 as the database engine, which does not have any size restrictions.

( ) Single server deployment with built-in database is not available in SharePoint 2016.

( ) SharePoint will use localdb as the database engine, which does not have any size restrictions.

Answer:

( ) SharePoint will use SQL Server 2008 R2 as the database engine, which does not have any size restrictions.

( ) SharePoint will use SQL Server 2008 R2 Express as the database engine, which has a maximum database size limit of 10 GB.

( ) SharePoint will use SQL Server 2012 as the database engine, which does not have any size restrictions.

(√) Single server deployment with built-in database is not available in SharePoint 2016.

( ) SharePoint will use localdb as the database engine, which does not have any size restrictions.

Feedback:

SharePoint 2016 does not offer the option to create a single server deployment with a built-in database as SharePoint did in previous years.

Question: Which of the following workflow types is installed automatically with SharePoint 2016?

( ) SharePoint Portal Server 2003 Workflow

( ) SharePoint Portal Server 2007 Workflow

( ) SharePoint 2010 Workflow

( ) SharePoint 2010 Workflow

( ) SharePoint 2016 Workflow – Project Server

Answer:

( ) SharePoint Portal Server 2003 Workflow

( ) SharePoint Portal Server 2007 Workflow

(√) SharePoint 2010 Workflow

( ) SharePoint 2010 Workflow

( ) SharePoint 2016 Workflow – Project Server

Feedback:

The SharePoint 2010 Workflow type is installed automatically with SharePoint 2016. You can also use the SharePoint 2013 and SharePoint 2013 – Project Server workflow types with SharePoint 2016 but both of these also require you to install Workflow Manager. In addition, to use the SharePoint 2013 – Project Server workflow type, you must also install Project Server 2016.

Question: Microsoft provides sample Config.xml files that you can use to perform a scripted installation of SharePoint 2016. You must make some changes to these files before you can use them to install SharePoint. Which of the following options describes the minimum required changes to one of the sample Config.xml files before you can use it to install SharePoint?

( ) Enter the root domain.

( ) Remove the comment tags.

( ) Enter a valid product key.

( ) Remove the comment tags and enter a valid product key.

( ) Remove the comment tags, enter a valid product key, and enter the root domain.

Answer:

( ) Enter the root domain.

( ) Remove the comment tags.

( ) Enter a valid product key.

(√) Remove the comment tags and enter a valid product key.

( ) Remove the comment tags, enter a valid product key, and enter the root domain.

Feedback:

Remove the comment tags, enter a valid product key, and enter the root domain.

Module 6

Creating web applications and site collections

Contents:

Lesson 1
Creating web applications

Contents:

Resources

Logical infrastructure for web applications

Additional Reading: For more information, refer to Service application cmdlets in SharePoint Server 2016: http://aka.ms/O8klgh

Creating web applications

Additional Reading: For more information, refer to Create claims-based web applications in SharePoint : http://aka.ms/K71y0g

Web application zones

Additional Reading: For more information, refer to Extend a Web application (SharePoint Server): http://aka.ms/K6ae2b

Lesson 2
Configuring web applications

Contents:

Resources

Overview of web application configuration

Additional Reading: For more information about Resource Throttling, see *Planning and configuring resource throttling* later in this lesson.

Additional Reading: For more information about SharePoint Designer and workflow settings, see *Planning for customization* later in this lesson.

For more information about Self-Service Site Creation settings, see *Planning and configuring self-service site creation* later in this lesson.

Managing content databases

Additional Reading: For more information, refer to Database cmdlets in SharePoint Server 2016: http://aka.ms/Wuoggs

Additional Reading: For more information, refer to Back up content databases in SharePoint: http://aka.ms/Ysmfec

Additional Reading: For more information, refer to Restore content databases in SharePoint: http://aka.ms/eqsw6i

Additional Reading: For more information, refer to Back up content databases in SharePoint: http://aka.ms/Ysmfec

Additional Reading: For more information, refer to Restore content databases in SharePoint: http://aka.ms/eqsw6i

Planning and configuring managed paths

Additional Reading: For more information, refer to Define managed paths (SharePoint Server): http://aka.ms/Oxzdal

Planning and configuring resource throttling

Additional Reading: For more information, refer to Get-SPWebApplicationHttpThrottlingMonitor: http://aka.ms/Egcw0w

Additional Reading: For more information, refer to Set-SPWebApplicationHttpThrottlingMonitor: http://aka.ms/Rtt0f6

Additional Reading: For more information, refer to the Throttling and Limits section of Designing large lists and maximizing list performance (SharePoint Server): http://aka.ms/lj2zpp

Planning and configuring quota templates

Additional Reading: For more information, refer to Create, edit, and delete quota templates in SharePoint: http://aka.ms/Fwfx8l

Additional Reading: For more information about applying quota templates to a site collection, see *Applying quota templates to site collections* later in this module.

Lesson 3
Creating and configuring site collections

Contents:

Resources

Creating a site collection

Additional Reading: For more information, refer to Remove-SPSite: http://aka.ms/Mkxf14

Applying quota templates to site collections

Additional Reading: For more information, refer to Create, edit, and delete quota templates in SharePoint: http://technet.microsoft.com/library/cc263223.aspx

Managing site and content life cycle

Additional Reading: For more information, refer to Overview of site policies in SharePoint: http://aka.ms/B6g598

Managing site mailboxes

Additional Reading: For more information, refer to Configure site mailboxes in SharePoint Server: http://aka.ms/Yxvldh

Module Review and Takeaways

Review Questions

Question: What is the highest level component in the logical structure of a SharePoint 2016 farm?

( ) Site collection

( ) Web application

( ) Website

( ) Folder

( ) Site

> **Answer:**
>
> ( ) Site collection
>
> (√) Web application
>
> ( ) Website
>
> ( ) Folder
>
> ( ) Site
>
> **Feedback:**
>
> In a SharePoint 2016 farm, the highest level component in the logical structure is a web application.

Question: Which web application configuration feature has been deprecated in SharePoint 2016?

( ) Managed paths

( ) Host-named site collections

( ) Host headers

( ) Alternate access mappings

( ) Self-Service Site Creation

> **Answer:**
>
> ( ) Managed paths
>
> ( ) Host-named site collections
>
> ( ) Host headers
>
> (√) Alternate access mappings
>
> ( ) Self-Service Site Creation
>
> **Feedback:**
>
> Alternate access mappings have been deprecated in SharePoint 2016. The alternative approach that you are recommended to use in SharePoint 2016 is the use of host headers or host named site collections.

Question: To which template category do the Community Portal, Document Center, and My Site Host templates belong?

( ) Collaboration

( ) Custom

( ) Enterprise

( ) Publishing

Answer:

( ) Collaboration

( ) Custom

(√) Enterprise

( ) Publishing

Feedback:

The Community Portal, Document Center, and My Site Host templates are found on the Enterprise template category tab.

Module 7

Planning and configuring service applications

Contents:

Lesson 1
Introduction to service application architecture

Contents:

Question and Answers

Mapping service applications to your logical architecture

Question: Which one of these statements about proxy groups is correct?

(   ) Proxy groups are a way to associate service application connections with web applications.

(   ) There can be more than one proxy group associated with a web application.

(   ) Custom proxy groups can be applied to more than one web application.

(   ) If one proxy group is using a service application instance, another proxy group cannot use the same instance.

> **Answer:**
>
> (√) Proxy groups are a way to associate service application connections with web applications.
>
> (   ) There can be more than one proxy group associated with a web application.
>
> (   ) Custom proxy groups can be applied to more than one web application.
>
> (   ) If one proxy group is using a service application instance, another proxy group cannot use the same instance.
>
> **Feedback:**
>
> The first option is correct. There can be only one proxy group associated with a web application, but proxy groups can be associated with multiple web applications. If you use Custom as the connection to associate service applications with a web application, it only applies to that web application; it is not a shortcut for creating new proxy groups. You can use any combination of service applications or service application instances among proxy groups. This allows you to specify exactly those service applications or instances that are correct for the web applications.

Question: Work Management service, a service application that allows you to surface the aggregation of all tasks from SharePoint, Project Server, and Exchange Server for each user on his or her My Sites page, is available in SharePoint 2016.

(   ) True

(   ) False

> **Answer:**
>
> (   ) True
>
> (√) False
>
> **Feedback:**
>
> Work Management service was only available in SharePoint 2013, and is not available for SharePoint 2016. SharePoint Online also has this functionality removed.

Resources

Service application functions

Additional Reading: For the full list and description of the SharePoint service applications, refer to Technical diagrams for SharePoint: http://aka.ms/Uplwkw

Lesson 2
Creating and configuring service applications

Contents:

Question and Answers

Question:

Which of the following statements is correct?

(   ) All service accounts must be managed accounts.

(   ) The State Service service application does not require a service account.

(   ) Distributed Cache service is only necessary for caching user newsfeeds. Otherwise, you can turn it off and save resources.

(   ) You can configure delegated administrators for all service applications.

Answer:

(   ) All service accounts must be managed accounts.

(√) The State Service service application does not require a service account.

(   ) Distributed Cache service is only necessary for caching user newsfeeds. Otherwise, you can turn it off and save resources.

(   ) You can configure delegated administrators for all service applications.

Feedback:

Some service applications, like State Service, do not require you to specify a service account. There are service accounts that are not required to be managed, such as the content access account that the Search Service application uses. Distributed Cache improves performance by caching claims authentication and security trimming information, and newsfeeds and page data for better load performance. You cannot manage all service applications, so they cannot have delegated administration.

Service application delegated administration

Question: What accounts does the Distributed Cache service require?

Answer: The Distributed Cache service uses an application pool account, and two additional accounts required to access SharePoint content: the super reader account (full read user policy to all web applications), and the super user account (full control user policy to all web applications). These accounts are not created or configured automatically when the service application starts; you must configure them manually.

Resources

Creating service applications

Additional Reading: For more information on service application cmdlets, refer to Service application cmdlets in SharePoint: http://aka.ms/Lz7a4z

Service accounts and permissions

Additional Reading: For more information, refer to Configure object cache user accounts in SharePoint: http://aka.ms/Hsi1ep

Module Review and Takeaways

Review Questions

Question: Which of the following is a service application that must be running to use the App Management service?

 ( ) Business Connectivity Service

( ) Managed Metadata Service

( ) Secure Store Service

( ) State Service

( ) Subscription Settings Service

> **Answer:**
>
> ( ) Business Connectivity Service
>
> ( ) Managed Metadata Service
>
> ( ) Secure Store Service
>
> ( ) State Service
>
> (√) Subscription Settings Service
>
> **Feedback:**
>
> The Subscription Settings Service is required for App Management to work properly.

Question: Which of the following statements describing service application administration is correct?

 ( ) You can administer all service application functions through Central Administration.

( ) You can administer all service application functions through Windows PowerShell.

( ) You cannot delegate service application administration.

( ) You can start and stop all services in Central Administration.

( ) You can create a new proxy group through Central Administration.

> **Answer:**
>
> (√) You can administer all service application functions through Central Administration.
>
> ( ) You can administer all service application functions through Windows PowerShell.
>
> ( ) You cannot delegate service application administration.
>
> ( ) You can start and stop all services in Central Administration.
>
> ( ) You can create a new proxy group through Central Administration.
>
> **Feedback:**
>
> You can administer all service application functions through Windows PowerShell. All the other statements are incorrect.

Tools

When troubleshooting service application issues, a tool all SharePoint administrators should have is the ULS (Unified Logging Service) Viewer. When something fails to work in SharePoint, it often registers a correlation ID for the error. The ULS logs record these errors at %ProgramFiles%\Microsoft Shared\Web

Server Extensions\14\Logs\. These logs are not easy to read or filter through, as they contain information about all SharePoint-related jobs and activities.

There are a few different versions of the tool, including one at the Microsoft Download site (ULS Viewer: http://aka.ms/Yt1zyi. Essentially, the tool is a console that lets you filter the ULS logs by the correlation ID of the error, so that you can determine its cause. Several of the ULS log viewers allow for real-time scrolling, allowing you to start the tool, trigger the error, then stop the tool and filter the results so that you can be certain to catch all the information you require.

Module 8

Managing users and permissions, and securing content

Contents:

Lesson 1
Configuring authorization in SharePoint 2016

Contents:

Question and Answers

Question: Name three ways that you can grant access to content on a SharePoint site.

> **Answer:**
>
> - Grant permissions directly to a user.
>
> - Grant permissions to a group.
>
> - Grant permissions to a role.

Question: SharePoint 2016 does not support Active Directory security groups.

( ) True

( ) False

> **Answer:**
>
> ( ) True
>
> (√) False
>
> **Feedback:**
>
> SharePoint 2016 supports both Active Directory security groups and SharePoint groups.

Question: List at least one permission level that is specific to the Publishing Portal template.

> **Answer:** Approve, Manage Hierarchy, or Restricted Read.

Question: Which Windows PowerShell cmdlet do you use to add a user to a SharePoint group?

( ) Get-SPUser

( ) Set-SPWeb

( ) Set-SPUser

( ) Get-SPWeb

( ) Set-SPSite

> **Answer:**
>
> ( ) Get-SPUser
>
> ( ) Set-SPWeb
>
> (√) Set-SPUser
>
> ( ) Get-SPWeb
>
> ( ) Set-SPSite
>
> **Feedback:**
>
> Use the **Set-SPUser** cmdlet with the **-group** attribute.

Question: In which management interface do you manage anonymous policies: Central Administration or Site Settings?

> **Answer:** Central Administration

Resources

Understanding authorization in SharePoint 2016

Additional Reading: For more information, refer to following topics in the article Configure People Picker in SharePoint: http://aka.ms/Sqk402:

- Restrict People Picker to a certain group in Active Directory.
- Force People Picker to pick only from users in the site collection.
- Filter Active Directory accounts by using LDAP queries.
- Return only non-Active Directory user accounts.
- Enable cross-forest or cross-domain queries when you use a one-way trust.

Managing permission levels

Additional Reading: For more information, refer to User permissions and permission levels in SharePoint: http://aka.ms/A6abzb

Additional Reading: For more information, refer to SharePoint: Create a custom permissions using PowerShell: http://aka.ms/Wcbquq

Managing SharePoint groups

Additional Reading: For information about permission levels, see the topic "Managing permission levels" earlier in this lesson.

Managing web-application policies

Additional Reading: For information about managing anonymous access policies, see *Managing Anonymous Access* later in this module.

Lesson 2
Managing access to content

Contents:

Question and Answers

Question: What is the best way to organize content to manage permissions?

> **Answer:** The best practice is to organize content in a hierarchy so that content that is more restricted is below, or is a subset of less restricted content.

> **Feedback:** The best practice is to organize content in a hierarchy so that content that is more restricted is below, or is a subset, of less restricted content. This allows you to use permission inheritance more effectively by using inheritance, and more importantly, by not breaking inheritance.

Question: Enabling anonymous access on your SharePoint site presents a security risk.

( ) True

( ) False

> **Answer:**

> (√) True

> ( ) False

> **Feedback:**

> It is a best practice to avoid enabling anonymous access unless it is necessary. It makes your server inherently less secure because anonymous users and authenticated users that have not been specifically granted access to your site can change settings or content and those changes cannot be traced to a specific user.

Question: How do you use PowerShell to configure access requests?

> **Answer:** Set the **RequestAccessEmail** property of the **SPWeb** object to the value of a valid email address. Setting the value to an empty string turns off access requests.

Question: What scopes does SharePoint 2016 support for add-in permissions?

> **Answer:**
> - Tenant
> - Site collection
> - Website
> - List

Resources

Managing add-in permissions

Additional Reading: For more information, refer to Overview of apps for SharePoint: http://aka.ms/Iv9fg7

Additional Reading: For more information, refer to Plan app permissions management in SharePoint: http://aka.ms/Eoyz0h

Additional Reading: For more information about managing add-in permissions by using PowerShell, refer to Configure app authentication in SharePoint Server: http://aka.ms/K7302v

Additional Reading: For more information, refer to App Management Service cmdlets in SharePoint: http://aka.ms/Ej53fs

Module Review and Takeaways

Best Practices

- Keep in mind the difference between authorization and authentication.
- Use Active Directory Domain Services (AD DS) and SharePoint groups to manage permissions.
- Organize content hierarchically according to permission level.
- Use access requests to simplify access management.
- Use the People Picker feature to help control users' ability to grant access to content.
- Be very selective when enabling anonymous access on a site.
- Always test permission levels when making changes.

Review Questions

Question: Which of the following SharePoint groups is assigned the Contribute permission level by default?

( ) Viewers

( ) Visitors

( ) Owners

( ) Members

( ) Designers

> **Answer:**
>
> ( ) Viewers
>
> ( ) Visitors
>
> ( ) Owners
>
> (√) Members
>
> ( ) Designers

Question: Which type of app-authorization policy is needed when the app is not acting on behalf of an authenticated user?

( ) User and app policy

( ) App-only policy

( ) User-only policy

( ) Any of the policies

> **Answer:**
>
> ( ) User and app policy
>
> (√) App-only policy
>
> ( ) User-only policy
>
> ( ) Any of the policies

Common Issues and Troubleshooting Tips

Common Issue	Troubleshooting Tip
User has access that is too broad.	Check the groups to which that user belongs. Also check to see if the user is part of a security group that has broad application permissions. If a user is a member of multiple groups, the highest permissions will apply.
User has too limited permissions.	Make sure the user is part of a group with the appropriate permissions.
Users report that they cannot add HTML content to an HTML Web Part or page.	Check to see if the user is trying to add an <iframe> when HTML field security limits this ability. HTML field security will strip the HTML when they try to insert it.

Module 9

Configuring authentication for SharePoint 2016

Contents:

Lesson 1
Overview of authentication

Contents:

Question and Answers

Question: Why would you choose to use Kerberos authentication over NTLM authentication?

> **Answer:** Kerberos authentication is more secure, it is more scalable, and it supports identity delegation. It also is more efficient because it requires fewer trips to a domain controller.

Question: Considering that it is preferable to create host-named site collections over extending web applications to additional zones, when might it still be appropriate to extend web applications to additional zones?

> **Answer:** There are still some scenarios in which extending web applications to additional zones is appropriate. For example, suppose you want to provide access to a web application over both HTTP and HTTPS. You might want to allow read-only anonymous access over HTTP but require users to sign in over HTTPS to update content. In this type of scenarios, you should use one zone to provide anonymous access over HTTP and an additional zone to provide authenticated access over HTTPS.

Resources

Authentication infrastructure in SharePoint 2016

Additional Reading: For more information about the authentication infrastructure in SharePoint 2016, refer to:

- Authentication overview for SharePoint: http://aka.ms/S7agze

- Authentication, authorization, and security in SharePoint: http://aka.ms/B15ejg

- Incoming claims: Signing into SharePoint: http://aka.ms/T9rk0p

Understanding claims-based authentication

Additional Reading: For more information about claims-based authentication concepts, refer to:

- Claims-based identity and concepts in SharePoint: http://aka.ms/S0mf6w

- Understanding the Fundamentals of SharePoint Claims-Based Authentication: http://aka.ms/Xrpr5s

Windows claims–mode authentication in SharePoint 2016

Additional Reading: For more information about configuring basic and digest authentication for SharePoint 2016, refer to:

- Configure Basic authentication for a claims-based web application in SharePoint: http://aka.ms/Ii6983

- Configure digest authentication for a claims-based web application in SharePoint: http://aka.ms/Sc9zcf

Configuring Kerberos authentication

Additional Reading: For more information about Kerberos authentication in SharePoint 2016, refer to:

- Plan for Kerberos authentication in SharePoint: http://aka.ms/A87fh1

- Kerberos Survival Guide: http://aka.ms/Jvbohh

- Kerberos Authentication Overview: http://aka.ms/ru6m2b

Web application zones

Additional Reading: For a more detailed discussion of application zone considerations in the architecture of your SharePoint 2016 site, refer to SharePoint design samples: Corporate portal and extranet sites, Users, zones, and authentication: http://aka.ms/Hd48rl

Additional Reading: For more information about extending web applications, refer to Extend claims-based web applications in SharePoint: http://aka.ms/Q9l7fr

Lesson 2
Configuring federated authentication

Contents:

Question and Answers

Question: If you have used earlier versions of forms-based authentication, can you specify how the configuration process differs in claims-aware forms-based authentication?

> **Answer:** The configuration process is unchanged. You need to edit the Web.config files to define membership providers and role managers in exactly the same way. The only new requirement is that the web application must be created in (the default) claims-based authentication mode.

Question: What are the main advantages of using federated identity providers?

> **Answer:** Advantages are:

- If you are working with partner organizations, you do not need to issue and manage credentials to enable them to access your environment.

- You can reduce the number of credentials that users must remember by leveraging well-known identity providers, such as Microsoft accounts, Google, and OpenID.

- You can remove the need to manage your own identity stores and authentication providers by leveraging public or partner organization providers.

Question: What are some of the reasons you would use AD FS? And when would you use ACS?

> **Answer:** AD FS is used most commonly when you want your users to be able to use their domain credentials to access external resources, such as a SharePoint site at a partner organization. ACS is used most commonly when you want users to be able to authenticate to your applications and services using web-based identity providers, such as a Microsoft account or Facebook.

Resources

Claims authentication process and normalization

Additional Reading: For detailed information about how to configure the C2WTS, refer to Claims to Windows Token Service (C2WTS) and Reporting Services: http://aka.ms/lcr37q

Configuring forms-based authentication for SharePoint 2016

Additional Reading: For more information about configuring forms-based authentication for SharePoint 2016, refer to:

- Plan for user authentication methods in SharePoint: http://aka.ms/erfnix

- Configure forms-based authentication for a claims-based web application in SharePoint: http://aka.ms/S3ebji

Understanding SAML token-based authentication and federation

Additional Reading: For more information and resources about ACS, refer to Access Control Service 2.0: http://aka.ms/Q7xpv1

Additional Reading: For more information about the configuration process, refer to Using Microsoft Azure Active Directory for SharePoint authentication: http://aka.ms/Fiapys

Additional Reading: For more information about creating custom providers, refer to:

- Plan for custom claims providers for People Picker in SharePoint http://aka.ms/Fep6hh

- How To: Create a claims provider in SharePoint: http://aka.ms/T6eku0

Configuring SAML token-based authentication with AD FS

Additional Reading: For more information about configuring SAML token-based authentication for SharePoint 2016, see:

- Plan for user authentication methods in SharePoint: http://aka.ms/erfnix

- Configure SAML-based claims authentication with AD FS in SharePoint: http://aka.ms/E1j6wa

Lesson 3
Configuring server-to-server authentication

Contents:

Question and Answers

Question: What are the advantages of using JSON metadata endpoints instead of certificate exchange to establish a trust relationship?

> **Answer:** Establishing trust relationships works in the same way regardless of whether you use JSON metadata endpoints or manual certificate exchange. The JSON metadata endpoint simply exposes the public certificate. The advantage is that you do not need to manually export the certificate and copy it to the other server.

Resources

Configuring a trust relationship between SharePoint 2016 and Exchange Server

Additional Reading: For more information about configuring trust relationships between SharePoint 2016 and Exchange Server , refer to Configure server-to-server authentication between SharePoint and Exchange Server: http://aka.ms/Nintz7

Configuring a trust relationship between SharePoint 2016 and Skype for Business Server

Additional Reading: For more information about these procedures, refer to:

- Configure server-to-server authentication between SharePoint and Lync Server: http://aka.ms/Mbn8v2

- Assign a server-to-server authentication certificate to Skype for Business Server 2015: http://aka.ms/A4w6jn

- Configure an on-premises partner application for Skype for Business Server 2015: http://aka.ms/cnm7jd

Configuring a trust relationship between two SharePoint 2016 server farms

Additional Reading: For more information about configuring trust relationships between two SharePoint 2016 server farms, refer to:

- Configure server-to-server authentication between SharePoint farms: http://aka.ms/P39mi6
- Exchange trust certificates between farms in SharePoint: http://aka.ms/Gkspm9

Additional Reading: For more information on configuring server-to-server authentication, refer to Configure server-to-server authentication from SharePoint Server 2016 Preview to SharePoint Online at: http://aka.ms/Vjgg2t

Configuring user profiles to support server-to-server authentication

Additional Reading: For more information about configuring user profiles to support server-to-server authentication, refer to Server-to-server authentication and user profiles in SharePoint Server: http://aka.ms/ih6mnn

Additional Reading: For more information about user profile synchronization, see Plan profile synchronization for SharePoint Server: http://aka.ms/bks62j

Module Review and Takeaways

Review Questions

Question: When is it appropriate to extend a SharePoint 2016 web application to additional zones?

(　) When you want to support multiple claims-based identity providers.

(　) When you want to provide access to web application content both over HTTP and HTTPS.

(　) When you want to associate multiple host names with a SharePoint site.

(　) When you want to split a web application across multiple content databases.

(　) When you want to enable forms-based authentication.

> **Answer:**
>
> (　) When you want to support multiple claims-based identity providers.
>
> (√) When you want to provide access to web application content both over HTTP and HTTPS.
>
> (　) When you want to associate multiple host names with a SharePoint site.
>
> (　) When you want to split a web application across multiple content databases.
>
> (　) When you want to enable forms-based authentication.
>
> **Feedback:**
>
> You might want to extend a SharePoint 2016 web application to an additional zone if you want to provide anonymous read-only access to sites over HTTP, but enable users to sign in and edit content over HTTPS. You can support multiple claims-based identity providers, including forms-based authentication, without extending the web application to additional zones. If you want to associate multiple host names with a SharePoint 2016 site, using host-named site collections is a more appropriate solution. Content databases are unrelated to web application zones.

Question: Which Windows PowerShell cmdlet should you use to configure SharePoint 2016 to trust a SAML token-based identity provider?

(　) **New-SPTrustedIdentityTokenIssuer**

(　) **New-SPTrustedRootAuthority**

(　) **New-SPClaimTypeMapping**

(　) **New-SPClaimsPrincipal**

(　) **New-SPAuthenticationProvider**

> **Answer:**
>
> (√) **New-SPTrustedIdentityTokenIssuer**
>
> (　) **New-SPTrustedRootAuthority**
>
> (　) **New-SPClaimTypeMapping**
>
> (　) **New-SPClaimsPrincipal**
>
> (　) **New-SPAuthenticationProvider**
>
> **Feedback:**
>
> You should use the **New-SPTrustedIdentityTokenIssuer** cmdlet to register any Security Assertion Markup Language (SAML) token issuer as a trusted authentication provider.

Question: Which SharePoint 2016 service application is responsible for resolving the identity of the user when SharePoint 2016 receives an OAuth-based server-to-server request?

(   ) The STS Application

(   ) The Application Management Service Application

(   ) The Managed Metadata Service Application

(   ) The Business Data Connectivity Service Application

(   ) The User Profile Service Application

> **Answer:**
>
> (   ) The STS Application
>
> (   ) The Application Management Service Application
>
> (   ) The Managed Metadata Service Application
>
> (   ) The Business Data Connectivity Service Application
>
> (√) The User Profile Service Application
>
> **Feedback:**
>
> When SharePoint 2016 receives an OAuth request, the User Profile Service Application attempts to resolve the request to a specific SharePoint 2016 user by querying user profiles.

Common Issues and Troubleshooting Tips

Common Issue	Troubleshooting Tip
Site is inaccessible for a user or group of users.	Check the error message. If the message indicates that the users do not have access to the site, then it means that the authentication process was successful, but that they are not authorized to access content. • If you are using SAML token-based authentication, verify that the user's SAML identity claim was granted permission, and not the user's domain\user account. • Check the user's or users' group memberships and role assignments to verify that they have sufficient access to view content on the site. • Refer to the article, Claims authentication does not validate user (SharePoint), at: http://aka.ms/Qw8j66
Site is inaccessible for all users.	There might be a problem with the authentication method configured for the site zone that is being used. Confirm what method has been configured for the zone, and whether that method is being used. In addition, it is possible for the authentication method configured in the web.config and in SharePoint to not match each other. Make sure that the authentication settings match what is expected. For more information, refer to the article, SharePoint: Authentication settings in Central Administration do not match

Common Issue	Troubleshooting Tip
	the configuration in web.config: http://aka.ms/xf3qzk
Users receive multiple authentication prompts when using Kerberos authentication.	Ensure that the users add the SharePoint site to Local Intranet Zone. You also can set this for all users through Group Policy.
When using Windows 7, users are prompted for credentials when opening documents from a library.	This is a known issue with Windows 7 and you should ensure that the users refer to the procedure described in the article, Prompt for Credentials When Accessing FQDN Sites From a Windows Vista or Windows 7 Computer: http://aka.ms/Hvrxca. This procedure includes editing the registry and installing a hotfix.
The user receives an error in the browser when authenticating in an AD FS environment.	Check for the following issues: • User's browser is blocking cookies. Ensure that the user does not block cookies. • Relying trust settings are misconfigured. You can verify these with the AD FS snap-in or with the Windows PowerShell **Get-ADFSRelyingPartTRust** cmdlet. • User belongs to too many Active Directory groups. If the user receives a message that the size of the request headers is too long, then the user might belong to a large number of Active Directory groups. The size of this field can be modified in IIS. For more information, refer to the article, Http.sys registry settings for IIS: http://aka.ms/ejqwk7
Unexpected results after changing authentication provider	Because SharePoint will fall back to NTLM if Kerberos fails, you may not realize that Kerberos authentication is not configured correctly. Use the KerbTray or NetMon tools to help verify authentication is working as expected by viewing the values passed during authentication.

Module 10

Securing a SharePoint 2016 deployment

Contents:

Lesson 1
Securing the platform

Contents:

Question and Answers

Question: What should you consider before you deploy an antivirus solution for your SharePoint deployment?

> **Answer:** We recommend that customers deploy an antivirus solution based on the SharePoint Virus Scanning Application Programming Interface (VS API).

Question: What is your experience with antivirus for previous versions of SharePoint?

> **Answer:** Some products that provided security for SharePoint 2013 include:

- ESET Security
- Kapersky
- Sophos Antivirus
- McAfee Security for SharePoint
- Symantec Protection for SharePoint

Resources

Planning a secure deployment

Additional Reading: For more information about security hardening for extranets, refer to Plan security hardening for extranet environments (SharePoint Server): http://aka.ms/jmsj20

Hardening a SharePoint server

Additional Reading: For more information about hardening servers in Microsoft SharePoint, refer to Plan security hardening for SharePoint: http://aka.ms/aumkjx

Configuring ports and protocols

Additional Reading: For more information about blocking the default port and creating aliases, refer to "Configuring SharePoint and SQL Server to communicate over nonstandard ports" later in this lesson.

Additional Reading: You can also use the **Get-SPServiceHostConfig** and **Set-SPServiceHostConfig** Windows PowerShell cmdlets to view and configure ports and protocols. For more information, refer to Get-SPServiceHostConfig: http://aka.ms/R5svc2; and Set-SPServiceHostConfig: http://aka.ms/woisz5

Configuring SharePoint and SQL Server to communicate over nonstandard ports

Additional Reading: For more information about configuring SharePoint and SQL Server to communicate by using nonstandard ports, refer to: Configure SQL Server security for SharePoint environments: http://aka.ms/R3a6cw

Lesson 2
Configuring farm-level security

Contents:

Question and Answers

Configuring activity and security auditing

Question: What are common uses of the audit log within SharePoint?

> **Answer:** You can use the audit log reports provided by SharePoint to view the data in the audit logs for a site collection. You can sort, filter, and analyze this data to determine who has done what with sites, lists, libraries, content types, list items, and library files in the site collection. For example, you can determine who deleted which content.

Resources

Understanding the delegated administration model

Additional Reading: For more information about the levels at which you can delegate administration of a SharePoint farm, refer to Choose administrators and owners for the administration hierarchy in SharePoint: http://aka.ms/Ta30wr

Additional Reading: For more information about delegating administration of the User Profile service application, refer to Delegate administration of User Profile service applications in SharePoint Server: http://aka.ms/q6y7e0

Additional Reading: For more information about delegating administration of user profile service application features, refer to Delegate administration of User Profile service application features in SharePoint Server: http://aka.ms/Nvhxz6

Configuring blocked file types

Additional Reading: For more information about the default blocked file types, refer to Manage blocked file types in SharePoint: http://aka.ms/r6xwu8

Configuring activity and security auditing

Additional Reading: For more information about configuring auditing for a site collection, refer to Configure audit settings for a site collection: http://aka.ms/Sdsz37

Additional Reading: For more information about viewing auditing reports, refer to View audit log reports: http://aka.ms/T42f3b

Module Review and Takeaways

Review Question

Question: What ports are used by the service applications that come with SharePoint?

> **Answer:** SharePoint uses ports TCP 32843, TCP 32844, TCP 32845, TCP 32846, and TCP 808 (WCF).

Real-world Issues and Scenarios

Any web traffic that is not encrypted can be analyzed by simply plugging a network tap onto the physical network.

Tools

- Nmap is a free port-scanning tool. You can download this tool from http://aka.ms/F1zknr
- Wireshark is a helpful tool for analyzing web traffic. You can download this tool from http://aka.ms/k2v7gg

Common Issues and Troubleshooting Tips

Common Issue	Troubleshooting Tip
Database connection issues	There are several things to examine if a SharePoint server cannot communicate with the databases. First, ensure that your alias are set up correctly. Also ensure that you have not blocked any communication ports accidently. Finally, make sure that the SQL Server service is running on the SQL Server.
A port is left open	You can use Nmap to scan the ports on your servers to see if you have left any ports open.

Lab Review Questions and Answers

Lab: Securing a SharePoint 2016 deployment

Question and Answers

Question: Which ports does SQL Server use by default?

> **Answer:** SQL Server uses ports TCP 1433 and UDP 1434. You can use SQL Alias on the SharePoint servers to redirect traffic to custom ports.

Question: Which ports do the SharePoint web servers use?

> **Answer:** In most cases, SharePoint uses port 80 for non-encrypted web traffic and port 433 for secure traffic. When you create Central Administration, a random port can be assigned. You should encrypt all Central Administration web traffic.

Module 11

Managing taxonomy

Contents:

Lesson 1
Managing content types

Contents:

Question and Answers

Question: We can reuse a content type in a sub-site without publishing it in the content type hub.

( ) True

( ) False

> **Answer:**
>
> (√) True
>
> ( ) False
>
> **Feedback:**
>
> Content types are reusable at the site where you create them and also lower in the site hierarchy, because subsites inherit site columns and content types.

Question: Can we have two content type hubs in one SharePoint 2016 farm?

> **Answer:** Yes, we can have two content type hubs in one SharePoint 2016 farm. One farm can have several managed metadata service application instances. Each instance can have a content type hub. But you can only set one instance as the default instance on web application level.

Lesson 2
Understanding managed metadata

Contents:

Question and Answers

Question: Is it possible to have two term sets with different permissions? If yes, how would you achieve this goal?

> **Answer:** Yes, it possible to have two term sets with different permissions. Term sets don't have unique permissions, but groups do. You need to create two groups with different permissions and then create a term set in each group.

Resources

Overview of managed metadata

 Additional Reading: For more information about managed metadata in SharePoint 2016, refer to Plan managed metadata in SharePoint Server: http://aka.ms/Y7c0ej

Lesson 3
Configuring the managed metadata service

Contents:

Question and Answers

Question: We can have additional language labels for each term in any language.

(   ) True

(   ) False

Answer:

(   ) True

(√) False

Feedback:

We can use only those languages that we have installed and configured in the Term Store Management Tool.

Resources

Configuring refinement and faceted navigation

Additional Reading: For more information about configuring refiners by using managed metadata, refer to Configure refiners and faceted navigation in SharePoint Server: http://aka.ms/Xn1gyu

Module Review and Takeaways

Review Questions

Question: Why is stakeholder input important to help establish the taxonomy?

> **Answer:** Stakeholder input can be useful because it is rare for the IT department to understand or recognize all of the classification mechanisms that the organization uses.

Question: Can more than two farms share term sets or content types by publishing the managed metadata service?

> **Answer:** Yes. Several farms can be involved in publishing and consuming managed metadata. For example, you can create a managed metadata service in the context of an enterprise services farm, which has no web front-end servers but publishes a managed metadata service for other farms in the organization to consume.

Question: If you require a list of departments for users to apply as metadata in several different sites, how can you create the departments list?

> **Answer:** There are two choices. You can create a site column, with the list of departments as a choice type, at a high enough level in the site collection so that you can apply the column to any list or library that users require. You can also create a term set that lists the departments and then add a managed metadata type column to any list that requires departments.

Tools

Automate taxonomy management

PowerShell is a powerful tool to automate term store management. After a while you will more likely have so many term sets and terms that they become unmanageable in the Term Store Management Tool. You can use PowerShell to make changes to your term store.

Module 12

Configuring user profiles

Contents:

Lesson 1
Configuring the User Profile Service Application

Contents:

Question and Answers

Question: Can you map a user profile property to multiple sources?

> **Answer:** Yes. When you use Microsoft Identity Manager 2016 to synchronize user profiles, you can map a property to multiple sources.

Question: We can configure a custom user profile property to import a custom AD DS user object attribute value with the synchronization mode set to Active Directory import.

(   ) True

(   ) False

> **Answer:**
>
> (√) True
>
> (   ) False
>
> **Feedback:**
>
> It is possible to import a custom AD DS user object attribute value. It is not possible to export the user profile property value with the synchronization mode set to Active Directory import.

Resources

Planning user profile import

🌐   **Additional Reading:** For more information about planning user profile importing, refer to Plan user profiles in SharePoint Server: http://aka.ms/D8b4p3

Configuring User Profile Service for a hybrid environment

🌐   **Additional Reading:** For more information about hybrid configuration, refer to Set up SharePoint services for hybrid environments: http://aka.ms/Gp0blb

🌐   **Additional Reading:** For more information about the Office 365 directory synchronization tool, refer to Active Directory Synchronization in Office 365: http://aka.ms/O7r46y

Lesson 2
Managing user profiles and audiences

Contents:

Question and Answers

Question: Can you use permissions to rollout social features only to the marketing department?

>**Answer:** Yes. You can control access to personal sites and social capabilities by using social permissions. You can remove the authenticated users group and add the marketing department group.

Question: We can configure audiences based on user profile property values.

(   ) True

(   ) False

>**Answer:**
>
>(√) True
>
>(   ) False
>
>**Feedback:**
>
>Audiences can be based on group membership, the manager attribute, or user profile property values.

Resources

My Sites and audiences in SharePoint Online

Additional Reading: For more information about My Sites in SharePoint Online, refer to Manage My Site Settings: http://aka.ms/ktnfce

Additional Reading: For more information about audiences in SharePoint Online, refer to Manage audiences: http://aka.ms/Daq7c4

Module Review and Takeaways

Review Questions

Question: What are the requirements for the service account before you configure the Active Directory import connection?

> **Answer:** The account needs the Replicating Directory Changes permission on the domain.

Question: When should you create additional user profile properties?

> **Answer:** You should create additional user profile properties if you need to store additional user-specific information, and there are no existing properties for storing this information.

Question: When would you need to configure trusted host locations?

( ) When you need to configure My Sites to trust content, such as documents, stored in another location.

( ) When you have multiple farms, each with a User Profile Service Application, and want to ensure that users have only one My Site.

( ) When you want to add additional links to the My Site navigation bar.

( ) When you need to publish My Site information into AD DS.

( ) When you need to specify additional sources for profile data.

> **Answer:**
>
> ( ) When you need to configure My Sites to trust content, such as documents, stored in another location.
>
> (√) When you have multiple farms, each with a User Profile Service Application, and want to ensure that users have only one My Site.
>
> ( ) When you want to add additional links to the My Site navigation bar.
>
> ( ) When you need to publish My Site information into AD DS.
>
> ( ) When you need to specify additional sources for profile data.
>
> **Feedback:**
>
> You configure trusted host locations to ensure that users have only one My Site in the environment where there is more than one farm with the User Profile Service Application, or when you have more than one User Profile Service Application.

Real-world Issues and Scenarios

When organizations start using user profiles in SharePoint, for many of them, it is the first time that end users actually see some of their information in AD DS. Initially it sounds great. They have all the information in one place and you leverage it in scenarios while building a company phonebook or an organizational chart. But it all comes down to the data quality of Active Directory attributes that they might have never used before.

Before you start working with user profiles, you should ask yourself the following questions:

- What information do I need or want to import?
- Is the information even there?
- Is the information "clean"?
- Is the information up to date?

If you do not address these concerns initially, you could end up with old phone numbers, phone numbers in different formats, incorrect hierarchy, and other problems visible to the end user.

Make sure the information in AD DS is accurate so that you can leverage it in SharePoint user profiles.

Module 13

Configuring Enterprise Search

Contents:

Lesson 1
Understanding the Search Service Application architecture

Contents:

Question and Answers

Question: Can the content processing component index custom file types?

Answer: Yes. If the file type (extension) is not supported by default, you can use an appropriate format handler and add the custom file type on the Manage Files Types page.

Question: The search index stores access control lists (ACLs) to enable security trimming.

( ) True

( ) False

Answer:

(√) True

( ) False

Feedback:

SharePoint 2010 stored ACLs in the search administration database. Since SharePoint 2013, they are stored with the index.

Resources

Search topology design

Reference Links: For more information, refer to the Architecture section of Technical diagrams for SharePoint: http://aka.ms/Sull7c

Lesson 2
Configuring Enterprise Search

Contents:

Question and Answers

Question: Can you use different content access accounts in one instance of the Search Service Application?

> **Answer:** There is only one default content access account per search service instance, but you can use crawl rules to define a different content access account to access the content targeted by the rule.

Question: You can configure a SharePoint Search service content source to crawl both SharePoint sites and a File Share.

( ) True

( ) False

> **Answer:**
>
> ( ) True
>
> (√) False
>
> **Feedback:**
>
> Content sources can crawl SharePoint sites, as well as File Shares, but you can only pick one type for a content source. This means you need two different content sources to acheive this goal.

Resources

Configuring content sources

Additional Reading: If you need Lotus Notes email access, you must ensure that you have installed and deployed the connector and any other required software. For a step-by-step guide for installing and provisioning the Lotus Notes connector for SharePoint, refer to Configure and use the Lotus Notes connector for SharePoint Server: http://aka.ms/pxexb3

Optimizing your Search service

Additional Reading: For more information, refer to Configure authoritative pages in SharePoint: http://aka.ms/Tveh7e

Lesson 3
Managing Enterprise Search

Contents:

Question and Answers

Question: You can use display templates and result types to modify search experience.

 (   ) True

(   ) False

> **Answer:**
>
> (√) True
>
> (   ) False
>
> **Feedback:**
>
> You can use a result type to define a query, and in combination with a display template you can create a new search experience to fulfill business requirements.

Question: You discovered that in a crawl report you have 45 million items to crawl. How many crawl databases should you deploy?

> **Answer:** Three. You should deploy additional crawl databases for 20 million items.

Resources

Managing thesaurus, spelling corrections, extractions, and refiners

Additional Reading: For more information about entity extraction dictionaries, refer to Create and deploy custom entity extractors in SharePoint Server: http://aka.ms/Wbuppl

Planning and configuring search navigation

Additional Reading: For more information, refer to Configure refiners and faceted navigation in SharePoint Server: http://aka.ms/Vqh9wy

Module Review and Takeaways

Review Questions

Question: Which of the search architecture components parses documents?

(   ) The crawl component

(   ) The content processing component

(   ) The analytics component

(   ) The index component

(   ) The query processing component

Answer:

(   ) The crawl component

(√) The content processing component

(   ) The analytics component

(   ) The index component

(   ) The query processing component

Feedback:

The content processing component tasks include parsing documents, property mapping, and linguistics processing.

Question: Which of the following is a verticals page that is automatically created when you deploy a Search Center site?

(   ) Conversation results page

(   ) Default query page

(   ) Default results page

(   ) Local People Results (System)

(   ) Local Video Results (System)

Answer:

(√) Conversation results page

(   ) Default query page

(   ) Default results page

(   ) Local People Results (System)

(   ) Local Video Results (System)

Feedback:

A SharePoint 2016 Search Center provides:

- A default search home page (default.aspx).
- A default search results page (results.aspx).
- A number of search verticals pages to display:
  - People Search results (peopleresults.aspx).
  - Conversation search results (conversationresults.aspx).

o   Video search results (videoresults.aspx).

An advanced research page (advanced.aspx) where users can refine their search queries by applying query text restrictions by, for example, applying an exact phrase match.

Question: Which of the following managed property options enables the content of a managed property to be returned in search results?

(   ) Advanced Searchable

(   ) Queryable

(   ) Refinable

(   ) Retrievable

(   ) Searchable

Answer:

(   ) Advanced Searchable

(   ) Queryable

(   ) Refinable

(√) Retrievable

(   ) Searchable

Feedback:

The Retrievable option enables the content of this managed property to be returned in search results. You should enable this option for managed properties that are relevant to include in search results.

Module 14

Monitoring and maintaining a SharePoint 2016 environment

Contents:

Lesson 1
Monitoring a SharePoint 2016 environment

Contents:

Question and Answers

Question: What are some common questions that your maintenance plan should answer?

Answer: The maintenance plan should cover:

- Which tasks to perform.
- How to perform each task.
- How often to perform each task.
- Who should perform each task.
- Who should update and maintain the necessary documentation.

Question: What are some best practices for configuring logging?

Answer: Some of the best practices for configuring logging include:

- Changing the drive that logging writes to.
- Restricting log disk space usage.
- Using the Verbose setting sparingly.
- Regularly backing up logs.
- Enabling event log flooding protection.

Resources

Planning for maintenance and monitoring

Additional Reading: For more information, refer to Appendix B: Sample SLA: http://aka.ms/oeej16

Additional Reading: For more information on Microsoft's SLA for SharePoint Online and other Office 365 services, refer to About Licensing: http://aka.ms/U3colo

Planning for QA

Additional Reading: For more information on ITIL, refer to ITIL: http://aka.ms/Rkllnd

Additional Reading: For more information on MOF 4.0, refer to Microsoft Operations Framework: http://aka.ms/kakdth

Tools and capabilities for monitoring in SharePoint 2016

Reference Links: For more information, refer to Overview of monitoring in SharePoint: http://aka.ms/bleapr

Using the SharePoint Health Analyzer

Reference Links: For more information, refer to Configure SharePoint Health Analyzer rules in SharePoint: http://aka.ms/Vwbqgb

Reference Links: For more information, refer to Configure SharePoint Health Analyzer timer jobs in SharePoint: http://aka.ms/Magwod

Logging usage and health data

Reference Links: For more information, refer to View data in the logging database in SharePoint, at: http://aka.ms/Brzfzf

Guidelines for configuring diagnostic logging

Reference Links: For more information, refer to Logging and event cmdlets in SharePoint: http://aka.ms/Atceuw

Lesson 2
Tuning and optimizing a SharePoint 2016 environment

Contents:

Question and Answers

Question: Which optimizations have led to the biggest performance improvements in SharePoint environments that you have worked on?

> **Answer:** There is no single optimization that will lead to the biggest performance improvement in every case, because performance bottlenecks are unique to every individual environment. Identifying and resolving bottlenecks one at a time is the only effective way to improve performance.

> **Feedback:** There is no single optimization that will lead to the biggest performance improvement in every case, because performance bottlenecks are unique to every individual environment. Identifying and resolving bottlenecks one at a time is the only effective way to improve performance. Students' answers should reflect that different optimizations will have different effects in different environments. However, there might be patterns—for example, database optimization is often poorly understood in environments without dedicated database administrators.

Question: You can manage the database server by using the MinRole feature in SharePoint 2016.

( ) True

( ) False

> **Answer:**

> ( ) True

> (√) False

> **Feedback:**

> False. Only the front-end web, application, search, and distributed cache servers are managed using the MinRole feature.

Resources

Quantifying performance

Additional Reading: For more information, refer to How to calculate Throughput and Peak Throughput for SharePoint: http://aka.ms/x1wgbb

Additional Reading: For more information on capacity planning for SharePoint 2016, refer to Capacity management and sizing overview for SharePoint Server: http://aka.ms/L6v9a6

Software boundaries and capacity guidelines

Additional Reading: For more information, review the guidelines in Software boundaries and limits for SharePoint: http://aka.ms/k0coc2

Optimizing network configuration

Reference Links: For more information on NLB in Windows Server 2012 R2, refer to Network Load Balancing Overview: http://aka.ms/Oomckv

⊕   **Additional Reading:** For more information, refer to Configure Request Manager in SharePoint Server: http://aka.ms/Sq7b2q

⊕   **Additional Reading:** For more information, refer to Request Management in SharePoint Server, Part One: Feature Capability and Architecture Overview: http://aka.ms/b00zg2

⊕   **Reference Links:** For more information, refer to Request Management in SharePoint Server, Part Two: Example Scenario and Configuration Step by Step: http://aka.ms/mn2rh3

Optimizing database configuration

⊕   **Reference Links:** For more information, refer to Optimizing tempdb performance: http://aka.ms/p8hkyo

Identifying and resolving bottlenecks

⊕   **Reference Links:** For more guidance on identifying and resolving bottlenecks in SharePoint 2016, refer to Monitoring and maintaining SharePoint Server: http://aka.ms/A4raqu

⊕   **Additional Reading:** For more information, refer to Identify Bottlenecks: http://aka.ms/Cpee6j

⊕   **Additional Reading:** For more information, refer to Performance Counters: http://aka.ms/Eztjp4

Lesson 3
Planning and configuring caching

Contents:

Question and Answers

Question: What is the difference between BLOB caching and remote BLOB storage?

> **Answer:** BLOB caching refers to the process where SharePoint caches files such as images and CSS files used for page rendering on the front-end web servers for easy retrieval.
>
> Remote BLOB storage refers to configuring content databases to store BLOBs on the file system instead of in the content database. The content database then stores a reference to the BLOB file instead of the file itself.

Question: Page output caching profiles apply only to what kinds of pages in SharePoint 2016?

> **Answer:** Publishing pages and publishing layout pages.

Resources

Planning and configuring BLOB caching

Additional Reading: For more information, refer to Monitoring BLOB cache performance: http://aka.ms/Uijdp4

Planning and configuring page output caching

Reference Links: For more information on configuring cache profiles, refer to Improve page rendering by configuring output caching: http://aka.ms/lg2ut6

Additional Reading: For more information, refer to Monitoring ASP.NET output cache performance: http://aka.ms/Uijdp4

Planning and configuring object caching

Reference Links: For more information on monitoring and optimizing the object cache, refer to Monitoring object cache performance http://aka.ms/Uijdp4

Planning and configuring the Distributed Cache service

Reference Links: For more information on the Distributed Cache service, refer to Overview of microblog features, feeds, and the Distributed Cache service in SharePoint Server: http://aka.ms/g2bmxm

Additional Reading: For more information, refer to Plan for feeds and the Distributed Cache service in SharePoint Server: http://aka.ms/H811kg

Additional Reading: For more information, refer to Manage the Distributed Cache service in SharePoint Server: http://aka.ms/Poqslr

Lesson 4
Troubleshooting a SharePoint 2016 environment

Contents:

Question and Answers

Question: Which tools would you use on a regular basis to troubleshoot issues in a SharePoint environment?

> **Answer:** Answers might include:
>
> - Server-side network tracing tools, such as Performance Monitor or Microsoft Message Analyzer.
>
> - Client-side traffic monitoring tools, such as Fiddler or Microsoft Internet Explorer F12 Developer Tools.
>
> - Tools for retrieving and organizing ULS trace log entries, such as ULS Viewer or Windows PowerShell.
>
> - Internet Information Services (IIS) Failed Request Tracing.
>
> - The SharePoint developer dashboard.
>
> - Microsoft Visual Studio, for load testing or debugging.

Resources

Performance management modeling in SharePoint 2016

Reference Links: For more information on performance management modeling, refer to Performance testing for SharePoint Server: http://aka.ms/hmtn4s

Analyzing the SharePoint diagnostic logs

Reference Links: To download ULS Viewer, go to: http://aka.ms/F3bh8q

Server-side request tracing

Reference Links: For more information, refer to: Microsoft Message Analyzer Operating Guide: http://aka.ms/by6v7f

Additional Reading: For information on specific scenarios and ongoing discussions about Message Analyzer, refer to Microsoft Message Analyzer team's blog: http://aka.ms/Kl613c

Reference Links: For more information, refer to Troubleshooting Failed Requests Using Tracing in IIS 7, at: http://aka.ms/H58tzh

Module Review and Takeaways

Review Questions

Question: Which monitoring tool or capability uses rules to detect potential configuration issues?

( ) The SharePoint Health Analyzer

( ) Diagnostic logging

( ) Usage and health data collection

( ) Performance counters

( ) ULS Viewer

Answer:

(√) The SharePoint Health Analyzer

( ) Diagnostic logging

( ) Usage and health data collection

( ) Performance counters

( ) ULS Viewer

Feedback:

The SharePoint Health Analyzer uses built-in health rules to detect potential issues in the areas of security, performance, configuration, and availability.

Question: Which RAID configuration provides both data striping and disk mirroring?

( ) RAID 0

( ) RAID 1

( ) RAID 5

( ) RAID 6

( ) RAID 10

Answer:

( ) RAID 0

( ) RAID 1

( ) RAID 5

( ) RAID 6

(√) RAID 10

Feedback:

Redundant Array of Independent Disks (RAID) 10 provides striping and mirroring. RAID 0, RAID 5, and RAID 6 are striping configurations, and RAID 1 is a mirroring configuration. We recommend Raid 10 for SharePoint deployments.

Question: Which SharePoint caching mechanism stores copies of media assets on disk?

( ) The BLOB cache.

( ) The page output cache.

( ) The object cache.

( ) The distributed cache.

( ) The view state cache.

> **Answer:**
>
> (√) The BLOB cache.
>
> ( ) The page output cache.
>
> ( ) The object cache.
>
> ( ) The distributed cache.
>
> ( ) The view state cache.
>
> **Feedback:**
>
> The Binary Large Objects (BLOB) cache stores copies of site media assets such as images, CSS files, and JavaScript files, on disk. This removes the need to retrieve the assets from the database for every request.

Question: When you browse to your SharePoint 2016 intranet, you see an HTTP 500 – Internal Server Error message. Which diagnostic tool might help you to investigate this problem?

( ) Microsoft Message Analyzer

( ) Microsoft Network Monitor

( ) IIS Failed Request Tracing

( ) Internet Explorer F12 Developer Tools

( ) The SharePoint developer dashboard

> **Answer:**
>
> ( ) Microsoft Message Analyzer
>
> ( ) Microsoft Network Monitor
>
> (√) IIS Failed Request Tracing
>
> ( ) Internet Explorer F12 Developer Tools
>
> ( ) The SharePoint developer dashboard
>
> **Feedback:**
>
> IIS Failed Request Tracing can help you to find out why IIS is returning an HTTP 500 error. Microsoft Message Analyzer, or its predecessor, Microsoft Network Monitor, can help you to identify network connectivity issues, but in this case, that is unlikely to help—you know that the requests are reaching IIS. The same applies to Internet Explorer F12 Developer Tools. Finally, the SharePoint developer dashboard will not help because the request is failing in IIS and not reaching SharePoint.

Common Issues and Troubleshooting Tips

Common Issue	Troubleshooting Tip
Gathering data about performance issues that cannot be reproduced or are intermittent, makes finding problems a challenge.	• Provide users with guidelines for what to do when experiencing problems, such as identifying the specific time they experienced the problem and what they

Common Issue	Troubleshooting Tip
	were doing. This will help you focus on the timeframe in question, and look for services or activities happening at that time that might affect performance. • Getting users to provide specific steps for reproducing the problem also will help. Using tools such as Skype for Business to view a user's desktop remotely also can help you see for yourself what steps they are taking. • You might also need users to install tools like Fiddler to help you diagnose problems from their end.
There is a lack of a baseline and long-term data for comparison.	A common issue with judging performance is the lack of a base set of data, and ongoing periodic updates to that data. This data is useful for tracking and spotting long-term trends that will help you identify problems before they escalate. Identifying the fact that latency is increasing over time, and taking action before the trend actually becomes a problem is better than taking action after you have gone over target metrics.