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Exam : 70-337

**Title : Enterprise Voice & Online
Services with Microsoft Lync
Server 2013**

Version : DEMO

Topic 1, Litware, Inc Case A

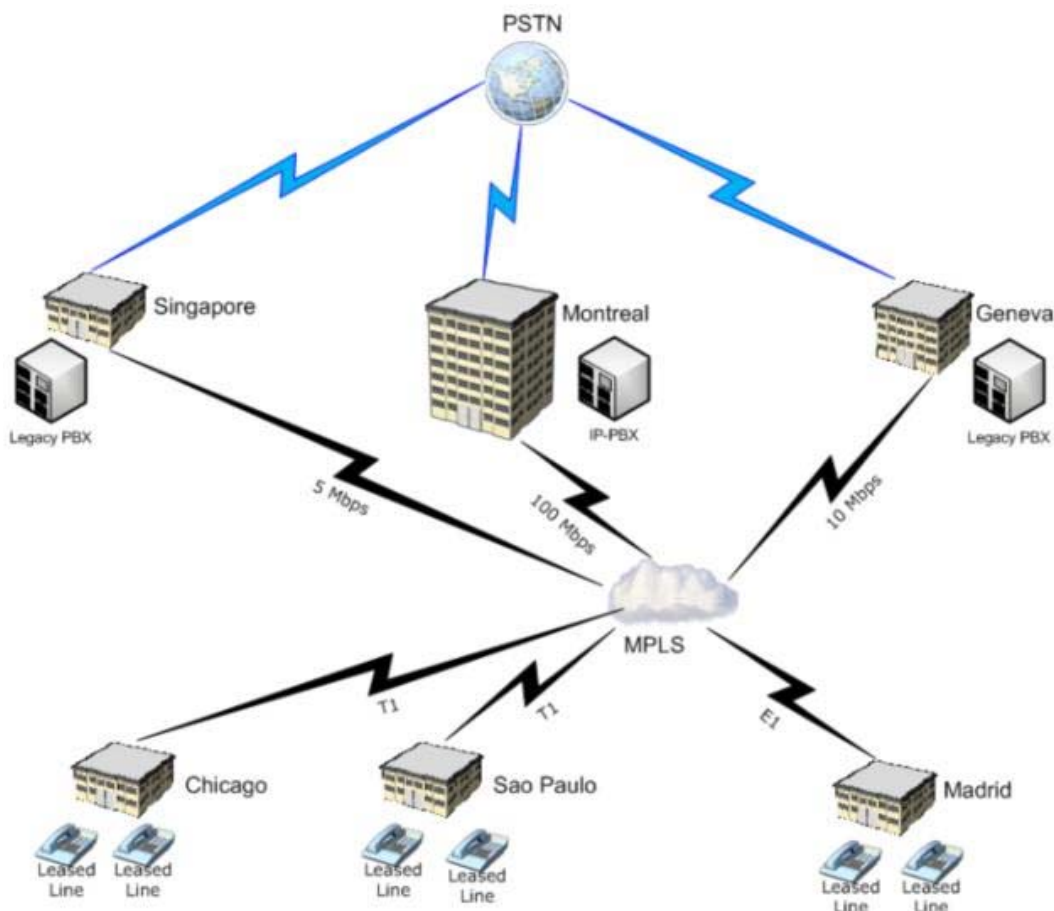
Overview

Litware, Inc., is an international air transportation company that has 700 employees. Litware has several offices worldwide. The main office is located in Montreal. The Montreal office has 125 users.

Existing Environment

Network Infrastructure

The network is configured as shown in the exhibit. (Click the Exhibit button.)



The company has an Active Directory forest named litwareinc.com that contains a single domain.

Lync Server and Exchange Server Infrastructure

The company has a Microsoft Exchange Server 2010 Service Pack 2 (SP2) organization that contains four servers. The servers are configured as shown in the following table.

| Server name | Location | Role |
|-------------|-----------|--|
| EXCH1 | Montreal | Mailbox server Client Access server Hub Transport server |
| EXCH-EDGE1 | Montreal | Edge Transport server |
| EXCH2 | Geneva | Mailbox server Client Access server Hub Transport server |
| EXCH3 | Singapore | Mailbox server Client Access server Hub Transport |

The company has a Lync Server 2013 infrastructure that contains four servers. The servers are configured as shown in the following table.

| Server name | Location | Role |
|-------------|-----------|-----------------------------------|
| LYNC1 | Montreal | Standard Edition Front End Server |
| LYNC-EDGE1 | Montreal | Standard Edition Edge Server |
| LYNC2 | Geneva | Standard Edition Front End Server |
| LYNC3 | Singapore | Standard Edition Front End Server |

The Lync Server infrastructure contains the components shown in the following table.

| Component name | Location | Component |
|----------------|-----------|--------------|
| LYNCSBA1 | Madrid | SBA |
| LYNCSBA2 | Sao Paulo | SBA |
| LYNCSBA3 | Chicago | SBA |
| LYNCGATE1 | Montreal | IP-PBX |
| LYNCGATE2 | Geneva | PSTN gateway |
| LYNCGATE3 | Singapore | PSTN gateway |

All audio conferences dial in to LYNCGATE1.

LYNC_EDGE1 is configured for External Access.

LYNC2 and LYNC3 are configured to place and receive calls through their local PBX and PSTN gateway.

The Montreal office has a phone number range of +1-514-555-0100 to +1-514-555-0250. Phone number ranges from +1-514-555-0226 to +1-514-555-0250 are unused.

Problem Statements

The company identifies the following issues:

- Users in the Madrid office report that their customers fail to reach the audio bridge.
- Remote users outside of North America report poor audio quality during conferences.
- Users report that they cannot invite people into their audio conferences by using the Invite by name or phone number feature.
- The finance department reports that fees for phone number ranges in the Montreal office have increased by 200 percent during the last five years.

Requirements

Business Goals

The company plans to replace all of its legacy phone systems and devices within a year.

Planned Changes

The company plans to implement the following changes:

- Replace all of the voice mail systems with Exchange Server 2010 Unified Messaging (UM).
- Provide E911 services to users from the United States offices.
- Replace the phone number ranges in the Montreal office with extensions to a single phone number range.
- Provide a Microsoft Lync Online account to several contractors that uses the @contractors.litwareinc.com suffix.
- The contractors will use their mobile phone to place and receive calls.

Business Requirements

The company identifies the following business requirements for the planned deployment:

- Minimize hardware and software acquisition costs.
- Minimize the cost of placing long distance calls to Europe.
- Minimize the cost of placing long distance calls to North America.

Technical Requirements

The company identifies the following technical requirements for the planned deployment:

- Ensure that all users can place and receive calls if a single server fails.
- Ensure that all users can place and receive calls if a WAN link fails.
- Automatically provide E911 information to a national emergency call center in the United States.
- Limit the use of E911 services to users in United States offices only.
- Ensure that all users can find all of the company employees in the Lync Address Book.
- Ensure that users in a partner company can add a Litware employee to their contact list without any intervention by an administrator at Litware.

Security Requirements

The corporate security policy states that only the main phone number of the company must be displayed when users call external customers.

Phone Number Requirements

The company identifies the following requirements for the phone numbers:

- If a caller dials a phone number range that is unassigned, the call must be transferred to an operator.
- If a caller dials a phone number in a range that was replaced by an extension, the caller must hear the extension format, and then the call must be transferred to the generic phone number range of +15145550100.
- The costs associated with phone number ranges must be reduced.
- Callers to the company must always be able to reach an employee, an operator, or a UM auto attendant.

UM Requirements

The company plans to deploy UM with Exchange Server 2010 to meet the following requirements:

- All users must be able to use the Play on Phone feature in Microsoft Outlook.
- UM administrators must be able to configure calls to be redirected to external phone numbers.
- Users must be prevented from navigating the voice mail system menu by using their voice.

1.You need to configure the Lync Server 2013 infrastructure to meet the technical requirements for E911.

You create the network and subnets for each office.

Which three tasks should you perform next? (Each correct answer presents part of the solution. Choose three.)

- A. Create a client policy.
- B. Configure the location database
- C. Create location policies.
- D. Create a response group.
- E. Create a voice route.
- F. Create a normalization rule.

Answer: B, C, E

2.You are evaluating the planned changes for the contractors.

You need ensure that the contractors can access Outlook Voice Access and receive voice mails from callers.

Which cmdlet should you run?

- A. New-CsExUmContact
- B. New-CsSipDomain
- C. New-CsVoicemailReroutingConfiguration
- D. New-CsSipProxyCustom

Answer: A

Explanation:

<http://technet.microsoft.com/en-us/library/gg398139.aspx>

3.You need to recommend a solution to meet the security requirement.

What should you include in the recommendation?

- A. An outbound translation rule
- B. A response group
- C. A voice policy
- D. A private phone line

Answer: A

Explanation:

<http://tsoorad.blogspot.com/2012/10/lync-2013-calling-party-number.html>

4.DRAG DROP

You decommission the legacy PBX in the Singapore office. You configure all users in the Singapore office to route calls through their local Lync Server 2013 servers.

You need to identify the tasks that must be performed in each office to ensure that calls from Singapore meet the business requirements and the technical requirements.

Which task should you identify for each requirement?

To answer, drag the appropriate actions to the correct requirements in the answer area. Each action may be used once, more than once, or not at all. Additionally, you may need to drag the split bar between panes or scroll to view content.

| Actions | Answer Area |
|---|--|
| Configure pool pairing. | Minimize the cost of placing long distance calls to Europe. Action |
| Create a trunk between LYNC3 and LYNCGATE1. | Minimize the cost of placing long distance calls to North America. Action |
| Create a trunk between LYNC3 and LYNCGATE2. | Ensure that all users can place and receive calls if a single server fails. Action |
| Create a trunk between LYNC3 and LYNCGATE3. | |

Answer:

| | |
|---|---|
| Minimize the cost of placing long distance calls to Europe. | Create a trunk between LYNC3 and LYNCGATE2. |
| Minimize the cost of placing long distance calls to North America. | Create a trunk between LYNC3 and LYNCGATE1. |
| Ensure that all users can place and receive calls if a single server fails. | Configure pool pairing. |

Note:

* Lyncgate2 (Geneva) for calls to Europe

* Lyncgate1 (Montreal) for calls to North America

* For the best disaster recovery abilities in Lync Server 2013, deploy pairs of Front End pools across two geographically dispersed sites. Each site contains a Front End pool which is paired with a corresponding Front End pool in the other site. Both sites are active, and the Lync Server Backup Service provides real-time data replication to keep the pools synchronized. The Backup Service is a new feature in Lync Server 2013, designed to support the disaster recovery solution. It is installed on a Front End pool when you pair the pool with another Front End pool.

5.You need to prepare the Enterprise Voice infrastructure for E911.

Which two cmdlets should you run? (Each correct answer presents part of the solution. Choose two.)

- A. Set-CsPstnUsage
- B. Enable-CSPublicProvider
- C. Set-CsVoiceConfiguration
- D. New-CsVoiceRoute
- E. New-CsVoiceRoutingPolicy

Answer: A, D

Explanation:

<http://technet.microsoft.com/en-us/library/gg398496.aspx>

6.You need to prepare the environment for the planned Lync Online solution of the contractors. The solution must meet the business requirements and technical requirements.

What two technologies should you deploy? (Each correct answer presents part of the solution. Choose two.)

- A. Active Directory Rights Management Services (AD RMS)
- B. Active Directory Lightweight Directory Services (AD LDS)
- C. The Inter-Organization Replication tool
- D. Active Directory Federation Services (AD FS) 2.0
- E. Microsoft Online Services Directory Synchronization
- F. Microsoft Online Services Sign-in Assistant

Answer: D, E

7.You are evaluating the planned changes for the contractors.

You need to identify which client application the contractors will be able to use to schedule online meetings.

Which client application should you identify?

- A. Lync Web App
- B. Windows Phone devices
- C. Outlook 2010
- D. Outlook Web App

Answer: C

8.DRAG DROP

You need to implement a solution to meet the phone number requirements.

Which four actions should you perform?

To answer, move the four appropriate actions from the list of actions to the answer area and arrange them in the correct order.

| Actions | Answer Area |
|--|-------------|
| Create two announcement number ranges. | |
| Import two announcement files. | |
| Create two announcements. | |
| Modify the TEL URI of the users. | |

Answer:

Box 1:

Import two announcement files.

Box 2:

Create two announcements.

Box 3:

Create two announcement number ranges.

Box 4:

Modify the TEL URI of the users.

Note:

* Announcement Deployment Process

Configure Announcement settings

-Create the announcement by recording and uploading audio files or by using text-to-speech (TTS).

-Configure the unassigned number ranges in the unassigned number table and associate them with the appropriate announcement.

* To create a new announcement, you need to perform the following steps:

For audio prompts, record the audio file by using your favorite audio recording application.

For audio prompts, run the Import-CsAnnouncementFile cmdlet to import the contents of the audio file to File Store.

Run the New-CsAnnouncement cmdlet to create and name the announcement. Perform this step to create announcements with an audio prompt, a text-to-speech (TTS) prompt, or no prompt.

Assign the new announcement to a number range in the unassigned number table.

Reference:

9.You need to ensure that the users in all of the offices can dial in to conferences by using a local phone number.

What should you create?

- A. An additional dial plan
- B. Five conferencing policies
- C. Five dial-in numbers
- D. Five additional call routes

Answer: C

10.DRAG DROP

You need to configure UM to meet the UM requirements.

Which UM component should you use to meet each requirement?

To answer, drag the appropriate components to the correct requirements in the answer area. Each setting may be used once, more than once, or not at all. Additionally, you can split bar between panes or scroll to

view content.

| Components | Answer Area |
|----------------------|--|
| an auto attendant | All users must be able to use the Play on Phone feature in Microsoft Outlook. <input type="text" value="Component"/> |
| a dial plan | UM administrators must be able to configure calls to be redirected to external phone numbers. <input type="text" value="Component"/> |
| a UM IP gateway | Users must be prevented from navigating the voice mail system menu by using their voice. <input type="text" value="Component"/> |
| a UM mailbox policy | |
| a UM mailbox setting | |

Answer:

Box 1: a UM mailbox policy

Box 2: a dial plan

Box 3: a UM mailbox setting

Note:

* You can enable or disable the Play on Phone feature for users associated with the Unified Messaging (UM) mailbox policy. This option is enabled by default and allows users to play their voice mail messages over a phone. The phone can be any phone, including an office or a mobile phone.

* A Unified Messaging (UM) dial plan is created using an organization-wide scope and contains configuration information related to your telephony network. A UM dial plan establishes a link from the telephone extension number of a Microsoft Exchange Server 2010 recipient in Active Directory to a UM-enabled mailbox.

* Manage Voice Mail Settings for a User

You can view or set the Unified Messaging (UM) and voice mail features and configuration settings for a user that's been enabled for UM and voice mail. For example, you can do the following:

- Reset their Outlook Voice Access PIN.
- Add a personal operator extension number.
- Add other extension numbers.
- Enable or disable Automatic Speech Recognition (ASR).
- Enable or disable Call Answering Rules.
- Enable or disable access to their email or calendar.

* You can create a Unified Messaging (UM) mailbox policy to apply a common set of UM policy settings, such as PIN policy settings or dialing restrictions, to a collection of UM-enabled mailboxes. UM mailbox policies link a UM-enabled user with a UM dial plan and apply a common set of policies or security settings to a collection of UM-enabled mailboxes. UM mailbox policies are useful for applying and standardizing UM configuration settings for UM-enabled users.

* Incorrect: After you create a Unified Messaging (UM) auto attendant, incoming calls to an external telephone number that a human operator would ordinarily answer are answered by the auto attendant.

Topic 2, Wingtip Toys

Overview

Wingtip Toys is a toy manufacturer and distributor in North America. The company has a main office and two branch offices. The main office is located in New York. The branch offices are located in Boston and Chicago.

The number of users in each office is shown in the following table.

| Office | Number of users |
|----------|-----------------|
| New York | 4,000 |
| Boston | 200 |
| Chicago | 300 |

Existing Environment

Network Infrastructure

The network contains an Active Directory forest named wingtip toys.com.

The New York and Boston offices connect to each other by using a 100-megabit per second (Mbps) WAN link. The New York and Chicago offices connect to each other by using a 40-Mbps WAN link.

Exchange Server Infrastructure

The company has a Microsoft Exchange Server 2010 Service Pack 2 (SP2) organization. All of the users in the New York and Chicago offices have Exchange Server mailboxes. The users in the Boston offices do not have mailboxes.

The Exchange Server organization contains two servers. The servers are configured as shown in the following table.

| Server name | Office | Role |
|-------------|----------|--|
| Exch1 | New York | Mailbox server Client Access server Hub Transport server |
| Exch2 | New York | Unified Messaging server |

Lync Server 2010 Environment

The company has a Lync Server 2010 infrastructure that contains four components. The components are configured as shown in the following table.

| Component name | Office | Role |
|----------------|----------|---|
| Pool1 | New York | Enterprise Edition Front End pool |
| Lync1 | New York | Enterprise Edition Front End Server in a pool named Pool1 |
| Lync2 | New York | Enterprise Edition Front End Server in a pool named Pool1 |
| Lync3 | Chicago | Standard Edition Front End Server |

All of the New York and Chicago users use Lync services. The Boston users only use IP-PBX phones. Only the New York users are configured for on-premises Exchange Server Unified Messaging (UM).

Voice Infrastructure

The hardware components of the current voice infrastructure are configured as shown in the following table.

| Component name | Office | Component |
|----------------|----------|--------------------|
| Pstn1 | New York | PSTN gateway |
| Pstn2 | New York | PSTN gateway |
| PBX1 | New York | IP-PBX (certified) |
| PBX2 | Boston | IP-PBX (certified) |

At any given time, a maximum of 25 percent of the users in the New York office are on the phone. A maximum of twenty percent of the calls are to the PSTN.

Lync Online

The company is evaluating Microsoft Lync Online.

The company moves 20 Chicago users to a Lync Online subscription. The subscription is configured to use a SIP domain of tailspintoys.com.

You did not implement directory synchronization or federation.

User Issues

Currently, all of the calls between the New York and Boston offices are routed through the PSTN.

User Issues

Currently, all of the calls between the New York and Boston offices are routed through the PSTN.

The audio and video quality during web conferences between the Lync users in the Chicago and New York offices often is poor.

Inbound and outbound PSTN calls from the New York office are not redundant. If a PSTN gateway fails, calls are not rerouted to another PSTN gateway.

Requirements

Planned Changes

The company plans to implement the following changes:

- Upgrade the Lync Server 2010 infrastructure to Lync Server 2013.
- Pilot Lync Online for 100 users in the Chicago office.
- Ensure that Lync Online users can find on-premises Lync users in the Lync Address Book.
- Ensure that Lync on-premises users and Lync Online users can communicate with each other by using instant messaging (IM).

Lync Server Requirements

The company identifies the following Lync Server requirements:

- Ensure that the New York users and the Boston users who have IP-PBX phones can call each other without using the PSTN.
- Improve the audio and video quality during the web conferences between the Chicago users and the New York users.

Unified Messaging Requirements

The company identifies the following Unified Messaging requirements:

- Pilot integrated voice mail in Microsoft Exchange Online for 100 New York users.
- Configure all users to have a five-digit extension.
- Ensure that users can retrieve their voice mail remotely by dialing +1 516 555 1212.
- Ensure that callers can reach the company directory by dialing +1 516 555 1213.
- Prevent users from receiving an email message when they miss a call.

Business Requirements

Three company executives require a second phone number for their existing Lync account. This second phone number must not appear in any Lync address books or contact lists generated from Active Directory.

Any planned changes must minimize administrative and financial costs.

Network Requirements

You identify the following network requirements for the planned deployment of Lync Server 2013:

- Limit the total bandwidth of all audio and video sessions from the Chicago office.
- Reduce the network utilization of Mediation servers.
- Prioritize Lync audio traffic on the network.

Enterprise Voice Requirements

Voice call routing in the New York office must be redundant. All outbound or inbound PSTN call routes must not depend on a single component.

1.You implement synchronization between Active Directory and Microsoft Office 365.

You need to recommend which tool is required to manage the phone numbers of the Exchange Online pilot users.

What should you recommend?

- A. The Microsoft Online Services Module for Windows PowerShell
- B. The Office 365 Exchange Online Portal
- C. Active Directory Users and Computers
- D. The Office 365 Lync Online Portal

Answer: C

Explanation:

<http://technet.microsoft.com/en-us/library/hh852469.aspx>

2.You are planning the deployment of two Mediation Servers in the New York office.

You need to identify the minimum number of network ports that must be configured on each Mediation Server. The solution must meet the Enterprise Voice requirements.

How many ports should you identify?

To answer, configure the appropriate number of network ports for the component in the answer area.

Answer Area

Number of ports on each Mediation Server:

Answer Area

Number of ports on each Mediation Server:

1
2
3
4

- A. 1
- B. 2

C. 3

D. 4

Answer: B

Explanation:

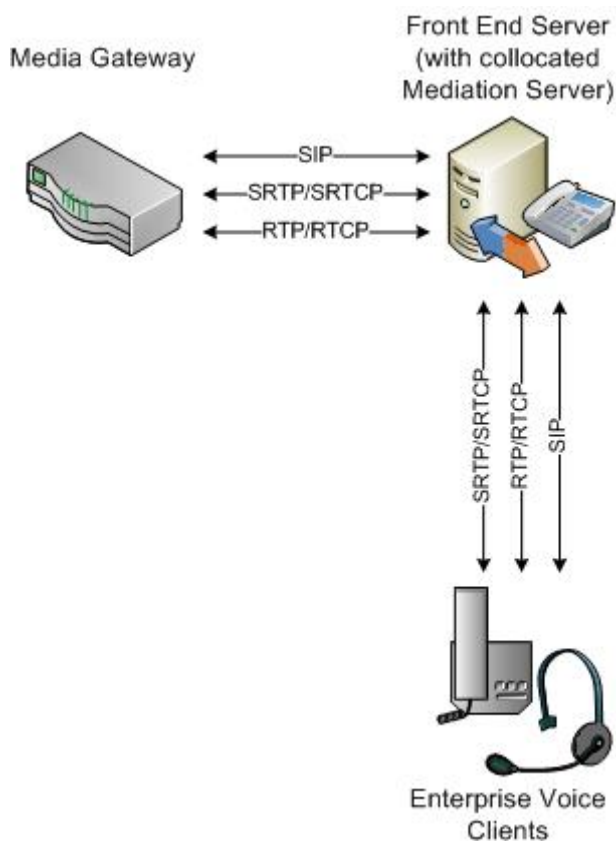
<http://technet.microsoft.com/en-us/library/gg398399.aspx>

Note: The Mediation Server translates signaling and, in some configurations, media between your internal Lync Server 2013, Enterprise Voice infrastructure and a public switched telephone network (PSTN) gateway or a Session Initiation Protocol (SIP) trunk. On the Lync Server 2013 side, Mediation Server listens on a single mutual TLS (MTLS) transport address. On the gateway side, Mediation Server listens on all associated listening ports associated with trunks defined in the Topology document. All qualified gateways must support TLS, but can enable TCP as well. TCP is supported for gateways that do not support TLS.

The main functions of the Mediation Server are as follows:

- Encrypting and decrypting SRTP on the Lync Server side
- Translating SIP over TCP (for gateways that do not support TLS) to SIP over mutual TLS
- Translating media streams between Lync Server and the gateway peer of the Mediation Server
- Connecting clients that are outside the network to internal ICE components, which enable media traversal of NAT and firewalls
- Acting as an intermediary for call flows that a gateway does not support, such as calls from remote workers on an Enterprise Voice client
- In deployments that include SIP trunking, working with the SIP trunking service provider to provide PSTN support, which eliminates the need for a PSTN gateway

The following figure shows the signaling and media protocols that are used by the Mediation Server when communicating with a basic PSTN gateway and the Enterprise Voice infrastructure.



3.You need to configure the second phone number for the executives. The solution must meet the business requirements.

What should you use?

- A. The Lync Server Control Panel
- B. The Set-CsUser cmdlet
- C. The Set-CsAdUser cmdlet
- D. The Topology Builder

Answer: B

4 .DRAG DROP

You need to recommend a solution to meet the UM requirements.

What should you configure to meet each requirement?

To answer, drag the appropriate configurations to the correct requirements in the answer area.

Each configuration may be used once, more than once, or not at all. Additionally, you may need to drag the split bar between panes or scroll to view content.

| Configurations | Answer Area |
|---------------------|---|
| A UM dial plan | Configure all users to have a five-digit extension. Configuration |
| A UM mailbox policy | Ensure that users can retrieve their voice mail remotely by dialing +1 516 555 1212. Configuration |
| A UM auto attendant | Ensure that callers can reach the company directory by dialing +1 516 555 1213. Configuration |
| | Prevent users from receiving an email message when they miss a call. Configuration |

Answer:

Box 1: A UM Dial plan

Box 2: A UM Dial plan

Box 3: A UM auto attendant

Box 4: A UM mailbox policy

Note:

* A Unified Messaging (UM) dial plan is created using an organization-wide scope and contains configuration information related to your telephony network. A UM dial plan establishes a link from the telephone extension number of a Microsoft Exchange Server 2010 recipient in Active Directory to a UM-enabled mailbox.

* You can create a Unified Messaging (UM) mailbox policy to apply a common set of UM policy settings, such as PIN policy settings or dialing restrictions, to a collection of UM-enabled mailboxes. UM mailbox policies link a UM-enabled user with a UM dial plan and apply a common set of policies or security settings to a collection of UM-enabled mailboxes. UM mailbox policies are useful for applying and

standardizing UM configuration settings for UM-enabled users.

* Incorrect: After you create a Unified Messaging (UM) auto attendant, incoming calls to an external telephone number that a human operator would ordinarily answer are answered by the auto attendant.

5.You need to recommend a solution to prevent calls to the Boston office from being routed over the PSTN. The solution must meet the Lync Server requirements.

What should you include in the recommendation?

- A. A Lync Server 2013 Director pool
- B. Two Lync Server 2013 trunks
- C. Two Lync Server 2013 Edge Servers
- D. A Lync Server 2010 A/V Conferencing pool

Answer: B

6.You need to recommend a solution to integrate the planned on-premises Lync Server 2013 infrastructure and Lync Online.

Which two components should you include in the recommendation? (Each correct answer presents part of the solution. Choose two.)

- A. A Lync Server 2013 partner application
- B. A new certificate issue by a trusted third-party certification authority (CA)
- C. The Microsoft Online Services Directory Synchronization tool
- D. A Session Border Controller
- E. A Lync Server 2013 Edge pool

Answer: C, E

7.You are evaluating whether the PSTN gateways must be upgraded to support the planned migration to Lync Server 2013.

You need to identify the minimum number of ports required for each PSTN gateway in the New York office. How many ports should you identify?

- A. 10
- B. 20
- C. 100
- D. 200

Answer: D

Enterprise Voice Requirements

Voice call routing in the New York office must be redundant. All outbound or inbound PSTN call routes must not depend on a single component.

8.You need to recommend changes to the Exchange Server organization to ensure that callers can leave voice mails if a server fails.

Which component should you recommend?

- A. Two Edge servers that have Exchange Server 2010 deployed
- B. An additional UM IP gateway
- C. An additional Client Access server that has Exchange Server 2010 deployed

D. An additional Unified Messaging server that has Exchange Server 2010 deployed

Answer: D

9.HOTSPOT

You are designing the Lync Server 2013 infrastructure.

You need to identify the minimum number of Lync Server 2013 Mediation Servers, Lync Server 2013 trunks, and PSTN gateways that must be added to the New York office. The solution must meet the Enterprise Voice requirements.

What should you identify?

To answer, configure the appropriate number for each component in the answer area.

Answer Area

Lync Server 2013 Mediation Servers:

PSTN Gateways:

Lync Server 2013 Trunks:

Answer Area

Lync Server 2013 Mediation Servers:

0
1
2
3
4

PSTN Gateways:

0
1
2
3
4

Lync Server 2013 Trunks:

0
1
2
3
4

Answer:

Answer Area

Lync Server 2013 Mediation Servers:

0
1
2
3
4

PSTN Gateways:

0
1
2
3
4

Lync Server 2013 Trunks:

0
1
2
3
4

Explanation:

<http://lync70337.freeforums.org/wingtip-lync-server-2013-infrastructure-t40.html>

2 Mediation server matches Enterprise Voice Requirement.

MUST not depend on a single component.

2 lync trunks are to Chicago and Boston

NY already has 2 gateways. No more need to be added.

10.DRAG DROP

You need to identify which configurations must be implemented for the planned Lync Server 2013 deployment. The solution must meet the network requirements.

Which features should you use?

To answer, drag the appropriate features to the correct requirements in the answer area. Each feature may be used once, more than once, or not at all. Additionally, you may need to drag the split bar between panes or scroll to view content.

| Features | Answer Area |
|------------------------------------|---|
| Call Admission Control (CAC) | Limit the total bandwidth of all audio and video sessions from the Chicago office. Feature |
| Differentiated Services (DiffServ) | Reduce the network utilization of Mediation servers. Feature |
| Media bypass | Prioritize Lync audio traffic on the network. Feature |
| Quality of Experience (QoE) | |

Answer:

| | |
|--|------------------------------------|
| Limit the total bandwidth of all audio and video sessions from the Chicago office. | Call Admission Control (CAC) |
| Reduce the network utilization of Mediation servers. | Media bypass |
| Prioritize Lync audio traffic on the network. | Differentiated Services (DiffServ) |

Differentiated services

Note:

- * Real-time communications are sensitive to the latency and packet loss that can occur on congested networks. Call admission control (CAC) determines, based on available network bandwidth, whether to allow real-time communications sessions such as voice or video calls to be established.
- * Media bypass is a Lync Server capability that enables an administrator to configure call routing to flow directly between the user endpoint and the public switched telephone network (PSTN) gateway without traversing the Mediation Server. Media bypass improves call quality by reducing latency, unnecessary translation, possibility of packet loss, and the number of potential points of failure. Where a remote site without a Mediation Server is connected to a central site by one or more WAN links with constrained bandwidth, media bypass lowers the bandwidth requirement by enabling media from a client at a remote site to flow directly to its local gateway without first having to flow across the WAN link to a Mediation Server at the central site and back. This reduction in media processing also complements the Mediation Server's ability to control multiple gateways.
- * Differentiated Services code points (DSCPs) mark IP packets with the type of traffic that is contained in each packet. This information is used by QoS to determine the priority of the packet relative to other network traffic. If QoS is enabled on your network, you can take advantage of it by enabling DSCP marking on servers running Microsoft Lync Server and on Lync clients. Because Lync Server and Lync clients require that different media use different port ranges, the Windows or Windows Server operating system can identify the traffic type and apply the appropriate DSCP to each packet according to the port that it uses.