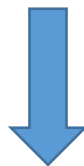# Microsoft MCSE Certification 70-333 Exam

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➢ **Exam Name: Deploying Enterprise Voice with Skype for Business 2015**

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Case Study 1 - Contoso, Ltd.-1 (QUESTION 1 - QUESTION 8)

General Overview

Contoso, Ltd., is a manufacturing company that has 4,000 employees. The company has a sales department, a marketing department, a research department, and a human resources department.

Physical Locations

The company has four offices. The offices are configured as shown in the following table.

Office location	Number of users	Extension prefix	Client subnet
New York	1,500	1	192.168.8.0/21
Miami	100	2	192.168.20.0/24
Los Angeles	400	3	192.168.30.0/23
Houston	200	4	192.168.40.0/24

The New York office contains the main data center. Communications for all of the offices is routed through the New York office. All telephone calls from the Los Angeles office and the Miami office are routed through a public switched telephone network (PSTN) gateway in the New York office. All offices connect to each other by using a wide area network (WAN) link. Each office connects directly to the Internet.

Existing Environment

Active Directory Environment

The company has an Active Directory Domain Services (AD DS) forest named contoso.com. The forest contains a single domain. All domain controllers run Windows Server 2008 R2. Each office contains two domain controllers. Each office is configured as an AD DS site. Each office contains DHCP servers that run on 32-bit servers.

Skype for Business Server Environment

The company has nine servers. The servers are configured as shown in the following table.

Server name	Office	Role	Software
Server1.contoso.com	New York	Front End Server	Skype for Business Server 2015
Server2.contoso.com	New York	Front End Server	Skype for Business Server 2015
Pool1.contoso.com	New York	Front End pool	n/a
Server3.contoso.com	New York	Mediation Server	Skype for Business Server 2015
Server4.contoso.com	New York	Edge Server	Skype for Business Server 2015
Gtwy1.contoso.com	New York	Media gateway	None
Gtwy2.contoso.com	Miami	Media gateway	None
Sba1.contoso.com	Houston	Survivable Branch appliance	Skype for Business Server 2015
Exch1.contoso.com	New York	Client Access Hub Transport Mailbox Unified Messaging	Microsoft Exchange Server 2010

The company uses a SIP domain of contoso.com. The voice infrastructure is configured as shown in the following table.

Office	Phone number range	User dialing habit
New York	+1 212 555 1000-3000	• Local PSTN: 10-digit phone number • Long distance within North America: 11-digit phone number • International: 011 + phone number
Miami	+1 425 555 1000-1100	• Local PSTN: 7-digit phone number • Long distance within North America: 11-digit phone number • International: 011 + phone number
Los Angeles	+1 310 555 4000-4500	• Local PSTN: 10-digit phone number • Long distance within North America: 11-digit phone number • International: 011 + phone number
Houston	+1 713 555 4000-4200	• Local PSTN: 10-digit phone number • Long distance within North America: 11-digit phone number • International: 011 + phone number

All users are enabled for Enterprise Voice. The company also contains two Edge Servers that have Skype for Business Server 2015 deployed. The servers are configured as shown in the following table.

Component	IP addressing	FQDN
A/V Edge service	131.107.100.3/24	Av.contoso.com
Access Edge service	131.107.100.1/24	Sip.contoso.com

The Miami office has a dial plan. The dial plan is configured as shown in the following table.

Normalization rule	Match pattern	Translation pattern
Internal New York	^1(\d{4})$	+1212555$1
Internal Houston	^4(\d{4})$	+1713555$1
Local 7 Digits	^(555\d{4})$	+1425$1
Long Distance	^(1\d{10})$	+$1
International	^(011\d{2}\d+)$	+$1

The Skype for Business Server 2015 configuration has five routes. Location-based routing is not configured. The routes are configured as shown in the following table.

Route name	Pattern to match	Description
LocalHouston	+1713	Local calls in Houston through the gateway in the Houston office
LocalLA	+1310	Local calls in Los Angeles through the gateway in the Los Angeles office
LDNY	+1	Long distance calls through the gateway in the New York office
LDHouston	+1	Long distance calls through the gateway in the Houston office
LDLA	+1	Long distance calls through the gateway in the Los Angeles office

The PSTN usage for the users in the Los Angeles office is configured as shown in the following table.

PSTN usage name	Description
LocalDialing	Local calls within the area code
PrimaryLongDistanceDialing	All long distance calls within North America
BackupLongDistanceDialing	Backup for all long distance calls if PrimaryLongDistanceDialing fails

Problem Statements
The company identifies the following issues with the current infrastructure:
- Los Angeles users report that the audio quality during calls to the New York office is poor and that the calls often disconnect.
- Users in the Miami office report that when their WAN link fails, they cannot establish calls to the PSTN.
- The Miami users report that they cannot call the Los Angeles users by using a five-digit internal phone number.
Requirements
Planned Changes
The company plans to implement the following changes:
- Provide voice resiliency in all of the offices if a WAN link fails.
- Implement Call Pack.
- Implement an unassigned number range that has a voice announcement.
- Add an additional auto attendant.
- Implement a gateway in the Los Angeles office that uses the local PSTN.
- Migrate several users to Skype for Business Online.
- The users will use instant messaging (IM) with Skype for Business users only.
- Client computers will use automatic configuration and open federation.
- The migrated users will use a SIP domain of cloud.contoso.com.
- Provide a backup route for each office if a gateway fails. Provide each office with access to the local PSTN.
Technical Requirements
The company identifies the following technical requirements:
- Enable five-digit internal dialing that uses the site code and the last four digits of the phone number range.
- Configure the New York gateway as the backup route for the local gateway in each office.
Business Requirements

Changes to the infrastructure must minimize the number of new servers deployed.

QUESTION 1
Drag and Drop Question
You need to create the DHCP options required for Skype for Business Phone Edition devices. Which three actions should you perform? (To answer, move the three appropriate actions from the list of actions to the answer area and arrange them in the correct order.)

Actions

From a Skype for Business Server 2015 server, run dhcputil.exe.
From a Skype for Business Server 2015, run dhcpconfigscript.bat.
From a DHCP server, run dhcpconfigscript.bat.
From a DHCP server, run dhcputil.exe
Copy Dhcpconfigscript.bat to a Skype for Business Server 2015 server.
Copy Dhcpconfigscript.bat to a DHCP server.

Answer Area

Answer:

Actions

| From a Skype for Business Server 2015 server, run dhcputil.exe. |
| From a Skype for Business Server 2015, run dhcpconfigscript.bat. |
| |
| |
| Copy Dhcpconfigscript.bat to a Skype for Business Server 2015 server. |
| |

Answer Area

| Copy Dhcpconfigscript.bat to a DHCP server. |
| From a DHCP server, run dhcputil.exe |
| From a DHCP server, run dhcpconfigscript.bat. |

QUESTION 2
You collect the following call statistics for users in Los Angeles:
- Peak call concurrency is 25 percent.
- Fifty percent of all placed calls are routed to the public switched telephone network (PSTN).
- Thirty percent of all placed calls are internal calls to users in the other offices.
- Twenty percent of all placed calls are conference calls.
- The average bandwidth for peer-to-peer calls is 65 kilobits per second (Kbps).
- The average bandwidth used for conference calls is 100 Kbps.
You need to allocate the minimum amount of bandwidth required on the wide area network (WAN) link for the planned implementation of the voice gateway in the Los Angeles office. All calls to the PSTN will be routed through the local voice gateway in the Los Angeles office. How much bandwidth in megabits per second (Mbps) should you allocate?

A. 7.20 Mbps
B. 3.95 Mbps
C. 10.00 Mbps
D. 2.25 Mbps

Answer: B

QUESTION 3
Drag and Drop Question
You need to plan the subnets for Call Admission Control (CAC) and media bypass. Which subnet or subnets should you use for each office? (To answer, drag the appropriate subnet or subnets to the correct office in the answer area. Each subnet 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.)

Subnets	Answer Area	
192.168.0.0/16		
192.168.8.0/21		
192.168.20.0/24		
192.168.30.0/23		
192.168.40.0/24		
131.107.100.0/24		
131.107.100.1/32		
131.107.100.3/32		

Answer Area

	Subnet	Subnet
New York	Subnet	Subnet
Los Angeles	Subnet	
Miami	Subnet	
Houston	Subnet	

Answer:

Subnets
192.168.0.0/16
192.168.8.0/21
192.168.20.0/24
192.168.30.0/23
192.168.40.0/24
131.107.100.0/24
131.107.100.1/32
131.107.100.3/32

Answer Area

New York	192.168.8.0/21	131.107.100.3/32
Los Angeles	192.168.30.0/23	
Miami	192.168.20.0/24	
Houston	192.168.40.0/24	

QUESTION 4
Hotspot Question
You need to design the Call Park solution. Which Call Park design should you choose? (To answer, select the appropriate range and application server in the dialog box in the answer area.)

Range:

| 0-99 |
| 100-199 |
| 200-9999 |
| 999-10000 |

Application server:

| Server1.contoso.com |
| Server2.contoso.com |
| Server3.contoso.com |
| Pool1.contoso.com |

Answer:

Range:

| 0-99 |
| 100-199 |
| 200-9999 |
| 999-10000 |

Application server:

| Server1.contoso.com |
| Server2.contoso.com |
| Server3.contoso.com |
| Pool1.contoso.com |

QUESTION 5
Drag and Drop Question
You need to configure the unassigned numbers range to support the planned changes. 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

| Run the
Import-CsAnnouncementFile
Skype for Business
Management Shell cmdlet. |

| Run the
New-CsAnnouncement
Skype for Business
Management Shell cmdlet. |

| Create an .mp3 file that
contains the announcement. |

| Create an unassigned number
range. |

| Run the
Set-CsApplicationServer
Skype for Business
Management Shell cmdlet. |

| Create a .wav file that
contains the announcement. |

(>)
(<)

(^)
(v)

Answer:

Actions

Run the
Import-CsAnnouncementFile
Skype for Business
Management Shell cmdlet.

Run the
New-CsAnnouncement
Skype for Business
Management Shell cmdlet.

Create an .mp3 file that
contains the announcement.

Create an unassigned number
range.

Run the
Set-CsApplicationServer
Skype for Business
Management Shell cmdlet.

Create a .wav file that
contains the announcement.

Answer Area

Create a .wav file that
contains the announcement.

Run the
Import-CsAnnouncementFile
Skype for Business

Run the
New-CsAnnouncement
Skype for Business
Management Shell cmdlet.

Create an unassigned number
range.

QUESTION 6
Hotspot Question
You need to ensure that the Miami users can use a five-digit extension when they call the Los Angeles users. What should you include in the normalization rule? (To answer, configure the appropriate match pattern and translation pattern in the dialog box in the answer area.)

Normalization rule	Match pattern	Translation pattern
Internal Los Angeles	▼	▼
	^1(\d{5})$	+1$1
	^2(\d{4})$	+1310$1
	^3(\d{4})$	+1310555$1
	^3(\d{5})$	+555$1

Answer:

Normalization rule	Match pattern	Translation pattern
Internal Los Angeles	^1(\d{5})$ **^2(\d{4})$** ^3(\d{4})$ ^3(\d{5})$	+1$1 +1310$1 **+1310555$1** +555$1

QUESTION 7
Hotspot Question
You need to deploy the Skype for Business components that are necessary to support the planned changes for voice resiliency. Which component should you deploy at each office? (To answer, select the appropriate component for each office in the answer area.)

Answer Area

Office	Component to Deploy
New York	a voice gateway a Standard Edition Front End server a Survivable Branch Appliance Do not deploy additional components
Miami	a voice gateway a Standard Edition Front End server a Survivable Branch Appliance Do not deploy additional components
Los Angeles	a voice gateway a Standard Edition Front End server a Survivable Branch Appliance Do not deploy additional components
Houston	a voice gateway a Standard Edition Front End server a Survivable Branch Appliance Do not deploy additional components

Answer:

Answer Area

Office	Component to Deploy
New York	▼
	a voice gateway
	a Standard Edition Front End server
	a Survivable Branch Appliance
	Do not deploy additional components
Miami	▼
	a voice gateway
	a Standard Edition Front End server
	a Survivable Branch Appliance
	Do not deploy additional components
Los Angeles	▼
	a voice gateway
	a Standard Edition Front End server
	a Survivable Branch Appliance
	Do not deploy additional components
Houston	▼
	a voice gateway
	a Standard Edition Front End server
	a Survivable Branch Appliance
	Do not deploy additional components

QUESTION 8
Drag and Drop Question
You are evaluating the implementation of the gateway in the Los Angeles office. You need to ensure that least cost routing is used in the Los Angeles and Houston offices for local calls after the gateway is deployed. The solution must meet the technical requirements. Which route should you assign to each public switched telephone network (PSTN) usage? (To answer, drag the appropriate route to the correct PSTN usage in the answer area. Each route 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.)

Routes

LocalHouston
LocalLA
LDNY
LDHouston
LDLA

Answer Area

LocalDialing	Route	Route
PrimaryLongDistanceDialing	Route	
BackupLongDistanceDialing	Route	

Answer:

Routes

LDHouston

Answer Area

LocalDialing	LocalLA	LocalHouston
PrimaryLongDistanceDialing	LDLA	
BackupLongDistanceDialing	LDNY	

Case Study 2 - Litware, Inc. (QUESTION 9 - QUESTION 14)

General Overview

Litware, Inc. is a marketing company that has 20,000 users.

Physical Locations

Litware has a main office and a branch office. The main office is located in New York. The branch office is located in Montreal. The offices connect to each other by using a WAN link. Each office connects directly to the Internet. Each office has a firewall between the internal network and the perimeter network. Each office has a firewall between the perimeter network and the Internet.

Existing Environment

Active Directory Infrastructure

The network contains an Active Directory Domain Services (AD DS) forest named litware.com. The forest contains a single domain. All domain controllers run Windows Server 2012. Each office contains two domain controllers. Each office is configured as an Active Directory site.

Skype for Business Server Infrastructure

The network contains a Skype for Business Server 2015 infrastructure. The infrastructure contains 12 servers. The servers are configured as shown in the following table. Litware uses the following Skype for Business features:

- Instant messaging (IM)
- A/V conferencing

The Skype for Business Server 2015 infrastructure is configured to use federation with users at a partner company, which is named Contoso, Ltd. Contoso has a SIP domain named contoso.com. The users at Contoso use Microsoft Skype for Business Online. Litware has a Microsoft Exchange Server 2013 organization. You integrate Exchange 2013 with Skype for Business Server 2015.

Planned Changes

Litware plans to implement the following changes:

- Enable Enterprise Voice for all users.
- Add IP phones to the existing VLANs.
- Add a SIP trunk to each site.

Problem Statements

Litware identifies the following issues:

- The current firewall configurations allow all ports and all protocols to the Skype for Business Server 2015 infrastructure.
- A change to the Skype for Business hosted provider proxy FQDN recently caused the federation with contoso.com to become unavailable.

Requirements

Business Goals

Litware plans to minimize hardware and software purchasing costs.

Technical Requirements

Litware identities the following technical requirements:

- The Enterprise Voice solution must ensure that calls to Canada are routed through the SIP trunk in the Montreal office. Litware identifies 39 area codes and a country code of 1 for Canada. You must minimize the number of voice routes that you must create.
- The Enterprise Voice solution must ensure that calls to any country besides Canada are routed through the SIP trunk in the New York office. Litware identifies 269 area codes and a country code of 1 for the United States.
- If the SIP trunk in the New York office fails, users in the Montreal office must be able to place international calls.
- The provider of the New York SIP trunk requires that the 011 prefix be used to make all international calls. Rules exist to ensure that dialed numbers conform to E.164 standards. - Application sharing for up to 200 simultaneous remote users and 100 simultaneous internal users in a single conference must be supported. Each application sharing session uses 500 Kbps. Only users on the internal network are presenters of the conferences. You must minimize the amount of bandwidth needed to application sharing.
- Users in the New York and Montreal offices must be able to dial a local number to access their voice mail remotely. Subscriber access must be available in French for the Montreal office users and in English and Spanish for the New York office users.
- Skype for Business Phone Edition devices must be supported. Users must be able to access their voice mail only from the Skype for Business client by clicking Call Voice Mail.
- You must minimize the number of access numbers and UM dial plans that you create.

Security Requirements

Allow only the required communications through the firewalls for the supported Lync services.

Response Group Requirements

Litware plans to create a response group for support calls to meet the following requirements:

- Incoming calls must be routed to any support staff who are online and available.
- If the support call is not answered by a support staff member, the call must be forwarded to the group of managers on call that day.
- Calls forwarded to the managers must be sent to the manager who has not answered a support call in the longest amount of time.

QUESTION 9

Hotspot Question

You need to create the Unified Messaging (UM) dial plans and access numbers for subscriber access. How many UM dial plans and access numbers should you create? (To answer, select the appropriate number of UM dial plans and access numbers in the answer area.)

Answer Area

4
2
1

Number of UM dial plans: | 0 ▲▼ |

Number of access numbers: | 0 ▲▼ |

1
2
4

Answer:

Answer Area

4
2
1

Number of UM dial plans: | 0 ▲▼ |

Number of access numbers: | 0 ▲▼ |

1
2
4

QUESTION 10
You need to create a rule to meet the technical requirements for international dialing from the SIP trunk in the New York office. Which type of rule should you create?

A. called number translation

B. normalization
C. dialing
D. calling number translation

Answer: A

QUESTION 11
Hotspot Question
You need to allocate bandwidth required for application sharing. How much bandwidth in kilobits per second (Kbps) should you allocate? (To answer, select the appropriate amount of bandwidth for each network connection in the answer area.)

From the client computer of the conference presenter to a Front End pool:
- 500 Kbps
- 50,000 Kbps
- 100,000 Kbps

From a Front End pool to an Edge Server:
- 500 Kbps
- 50,000 Kbps
- 100,000 Kbps

From an Edge Server to the Internet:
- 500 Kbps
- 50,000 Kbps
- 100,000 Kbps

Answer:

From the client computer of the conference presenter to a Front End pool:
- **500 Kbps**
- 50,000 Kbps
- 100,000 Kbps

From a Front End pool to an Edge Server:
- 500 Kbps
- 50,000 Kbps
- **100,000 Kbps**

From an Edge Server to the Internet:
- 500 Kbps
- 50,000 Kbps
- **100,000 Kbps**

QUESTION 12
You need to create the voice routes. How many voice routes should you create?

A. 1
B. 2
C. 4
D. 40
E. 270

Answer: C

QUESTION 13
You are implementing the Enterprise Voice solution. You create the objects described as shown in the following table.

Object name	Object description
PSTN1	The PSTN usage record for international calls from the Montreal office
PSTN2	The PSTN usage record for international calls from the New Your office
VR1	The voice route that uses the trunk in the Montreal office and is associated to PSTN1
VR2	The voice route that uses the trunk in the New York office and is associated to PSTN2
VP1	The voice policy for the Montreal office users
VP2	The voice policy for the New York office users

You need to recommend which action must be performed to meet the technical requirements for Enterprise Voice routing. What should you add?

A. PSTN1 to VP1
B. PSTN1 to VP2
C. PSTN2 to VP1
D. PSTN2 to VP2

Answer: C

QUESTION 14
Remote users report that they fail to access their voice mail by using the Call Voice Mail option in the Skype tor Business client. Remote users can access voice mail by using the subscriber access number. Internal users do not report any issues accessing voice mail. You need to enable voice mail access without manually dialing the subscriber number. Which two sets of ports should you open? (Each correct answer presents part of the solution. Choose two.)

A. TCP 443 and UDP 3478 on the external firewall
B. TCP 5062 and 8057 on the internal firewall. TCP 5062 and 8057 on the external firewall
C. TCP 443 and UDP 3478 on the internal firewall
D. UDP 50,000 to 59,999 on the internal firewall
E. UDP 50,000 to 59,999 on the external firewall

Answer: AD

Case Study 3 - Humongous Insurance (QUESTION 15 - QUESTION 19)

Humongous Insurance currently employs 7,500 people and is based in the United States. The company has 4,000 users in its main office in Chicago. It also has two branch offices, one in New York with 2,000 users and the other in Los Angeles with 1,500 users. The company has 30 executives located across the offices. The company recently migrated from Lync Server 2010 to Skype for Business Server 2015. The company plans to increase the use of audio and video (A/V) conferencing to reduce travel costs. Employees have been asked to use A/V, telephony, and instant messaging (IM) conferencing solutions whenever possible for communication with clients and users in the branch offices. Humongous Insurance is federated with Trey Research Corporation, which uses a third- party IM solution. Users at both companies need to communicate with each other by using their respective IM client. The company plans to continuously analyze the network to identify:
```
- potential network delay points.
- availability of adequate bandwidth to meet current requirements and
anticipated growth.
```
The company plans to continuously analyze the Skype for Business Server 2015 servers for performance metrics.

Planned Changes

Humongous is in discussion to acquire the Southbridge Video company. Southbridge Video has 2,000 users in two sites. Employees of Humongous Insurance use a variety of mobile devices, including Windows Phones and iOS phones. All iOS phone users must be notified of events, such as new or missed IM invitations and voice mail messages, even when they are using the corporate wireless network. All public switched telephone network (PSTN) traffic will use the G.711 codec. All voice will use the RTAudio Wideband codec. All peer-to peer (P2P) video sessions will support H.264 and RTVideo codecs. Audio bandwidth between the Los Angeles and New York offices is limited.

Challenges

All users report poor audio and video quality. Calls are dropped or suffer from jitter and lag. These issues exist when users are using the Skype for Business client or Skype for Business Phone Edition. Humongous Insurance users currently are unable to IM with external clients that use different IM programs. Currently there is no network oversight for Skype for Business communications. The company has no plans to increase the bandwidth at any sites. Humongous Insurance does not have a defined remote user access policy.

Existing Environment

The three offices are connected to one another as shown in the following network diagram:
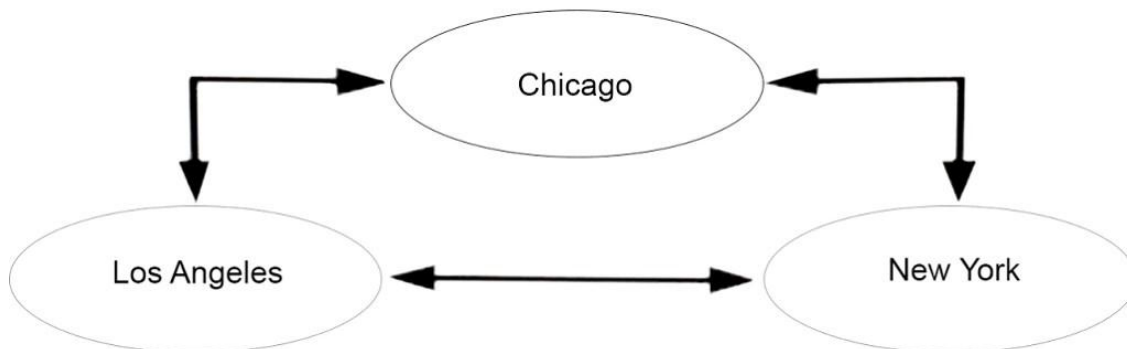
Additional information about the existing environment is shown in the Supporting Information section:
```
- Overview of data centers
```

- Detail of the Chicago data center
- Overview of audio and video codec bandwidths

Employees of Humongous Insurance use various operating systems, including Windows 7 Enterprise, and Windows 8. All users are enabled for Enterprise Voice, and many have Skype for Business Phone Edition. The concurrent communication modalities usage of the three offices is shown in the following table.

Role	Concurrent usage percentage Chicago office	Concurrent usage percentage New York office	Concurrent usage percentage Los Angeles office
PSTN	5%	5%	5%
Voice	10%	10%	15%
H.264/RTVideo	5%	5%	5%

Humongous Insurance expects to see the number of video users increase by as much as 10 percent. The company expects to see the number of voice users increase by as much as 15 percent. All users at Humongous Insurance will be Skype for Business enabled. The network team configures Quality of Service (QoS) as follows:

Media type	Starting port	Port count
Audio	49152	4,174
Video	57501	4,017

The Skype for Business Server 2015 media configuration matches the port settings used on the network. The company uses synthetic transactions to perform call and voice tests. Many of the employees of Humongous Insurance work from home and sign in securely to the corporate environment in order to use Skype for Business.

Business Requirements

Humongous Insurance would like to review the existing network topology and wants to ensure that network capacity will meet current Skype for Business Server 2015 infrastructure capacity requirements for audio and video usage, as well as meet the anticipated increases. All existing issues relating to the poor quality of Skype for Business Server 2015 calls and conferencing need to be addressed. Company policy allows for all employees to have the option to use video conferencing. Employees will be limited to VGA video quality. Company executives will not have these limitations. Quality of Service (QoS) ports must be unique for audio and video traffic. The company wants to confirm that the current network bandwidth allocated for the network is sufficient for all current and anticipated growth in Skype for Business Server 2015 traffic and would like to guarantee high-quality Skype for Business Server 2015 calls and video conferencing. Humongous Insurance wants to ensure that the volume of Skype for Business Server 2015 traffic does not exceed 50 percent of WAN bandwidth. The recommended design solution needs to eliminate the possibility of WAN oversubscription by Skype for Business Server 2015 traffic. Humongous Insurance wants to use only dedicated computers to monitor the network and perform synthetic transactions to limit the load on the computers. The proposed Skype for Business Server 2015 solution needs to provide scalability to accommodate the company's future acquisition of Trey Research. The proposed Skype for Business Server 2015 solution should be readily available for users in all three sites.

Technical Requirements

The company wants to allow only authorized employees to connect remotely. All remote users will use a secure method when remotely connecting to the network and the Skype for Business environment. The number of open and listening ports must be kept to a minimum. All maintenance and tests of network policies must be done outside of normal business hours. Bandwidth between sites cannot be increased. The quality of voice and video traffic must be increased. The number of dropped calls must be reduced. The corporate information technology (IT) department must be able to push updates and scan users' computers when they are connected remotely. All push

notifications must be able to be sent mobile clients on all supported cell phone manufactures. Many users do not use Windows mobile phones. IM users must be able to IM with users who are using other IM programs. The Skype for Business Server 2015 Bandwidth Calculator must be used to analyze Skype for Business traffic. It is recommended to deploy QoS for end-to-end support. Mobile client users are supported only with Lync 2013 Mobile clients.

Supporting Information

Overview of data centers

Role	Chicago data center	New York data center	Los Angeles data center
Skype for Business 2015 Front End Servers	CHI-FE1 CHI-FE2 CHI-FE3	NYC-FE1 NYC-FE2	LA-FE1 LA-FE2
Skype for Business 2015 Mediation Server	CHI-ME1 CHI-ME2	NYC-ME1 NYC-ME2	LA-ME1 LA-ME2

Detail of the Chicago data center

Role	Name
Active Directory Domain Controllers	CHI-DC1 CHI-DC2
Exchange 2013 Servers	CHI-EXCH1 CHI-EXCH2
Skype for Business 2015 Back-End Server	CHI-BE1
Skype for Business 2015 Edge Servers	CHI-SfBEdge1 CHI-SfBEdge2
Windows Server 2008	CHI-Edge1
Windows Server 2012	CHI-Edge2

Overview of audio and video codec bandwidths

Audio Codec	Bandwidth audio payload, IP header, UDP, RTP, and STRP (Kbps)
G.711	92.0
G.722	95.6
G.722 Stereo	159.6
Siren	47.6
RTAudio Narrowband	39.8
RTAudio Wideband	57

Video Codec	Maximum bandwidth (Kbps)
H.264/RTVideo (320x240) 4:3	350
H.264/RTVideo (640x480) 4:3	800
H.264/RTVideo (1280x720) 16:9	2,500
H.264 (1920x288) 20:3	2,000
H.264 (1920x1080) 16:9	4,000

QUESTION 15

You need to recommend a solution to test users' ability to schedule, join, and conduct an audio/video (A/V) conference. What should you do?

A. Run the Test-CsAVConference Skype for Business Management Shell cmdlet and then analyze the trace call flow in Snooper.
B. Run the Test-CsMcxConference Skype for Business Management Shell cmdlet and save the results.
   View the results by using the Skype for Business Server 2015 Logging Tool.
C. Run the Test-CsUcwaConference Skype for Business Management Shell cmdlet.
D   Run the Test-CsAudioConferencingProvider Skype for Business Management Shell cmdlet and save the results.
   View the results by using the Central Logging Service.

Answer: A

QUESTION 16
You need to recommend a solution that will improve voice quality for Skype for Business clients.
What should you recommend?

A. Change the Voice802lp value to 46.
B. Ensure that VoiceDiffservtag values are set to 46 for all Skype for Business Phone Edition devices at all sites.
C. Configure an Audio and Video Quality of Service (QoS) to use a DSCP value of 40 and a port range of 57501:65535.
D. Configure a Domain Group Policy object (GPO) configuring Quality of Service (QoS) and set it to Enforced for all Windows 7 clients.

Answer: B

QUESTION 17
You need to configure the Skype for Business Server 2015 environment to meet the technical requirements for push notifications to mobile users. Which two actions should you perform? (Each correct answer presents part of the solution. Choose two.)

A. Open port 23457 on the Enterprise Wi-Fi network.
B. Open port 5223 on the Enterprise Wi-Fi network.
C. Configure NAME redirection over HTTPS for the acquired domain.
D. Configure a web publishing rule for port 80 on the reverse proxy for the acquired domain.

Answer: BC

QUESTION 18
You need to allocate the current average amount of bandwidth that is required for peer-to-peer (P2P) voice calls for all three sites. How much bandwidth in kilobits per second (Kbps) should you allocate?

A. 36,960 Kbps
B. 51,150 Kbps
C. 80,025 Kbps
D. 135,795 Kbps

Answer: B

QUESTION 19
Drag and Drop Question

You need to prepare the Quality of Service (QoS) policy for the Skype for Business environment. Which values should you use for each configuration? (To answer, drag the appropriate value or values to the correct configuration or configurations in the answer area. Each value may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content. Each correct set of answers is worth one point.)

Values	Answer Area	
49152:57500	Configure a Group Policy object (GPO) for Skype for Business audio and apply it to the organizational unit that contains the Skype for Business 2015 servers, and then configure a port range of _____...	Value
49152:53326		
57501:65535	...and a differentiated services code point (DSCP) value of _____.	Value
57501:61518		
32		
34	Configure a Group Policy object (GPO) for Skype for Business video and apply it to the organizational unit that contains the Skype for Business 2015 servers, and then configure a port range of _____...	Value
46		
40	...and a differentiated services code point (DSCP) value of _____	Value

Answer:

Values	Answer Area	
49152:57500	Configure a Group Policy object (GPO) for Skype for Business audio and apply it to the organizational unit that contains the Skype for Business 2015 servers, and then configure a port range of _____...	49152:53326
49152:53326		
57501:65535	...and a differentiated services code point (DSCP) value of _____.	46
57501:61518		
32		
34	Configure a Group Policy object (GPO) for Skype for Business video and apply it to the organizational unit that contains the Skype for Business 2015 servers, and then configure a port range of _____...	57501:61518
46		
40	...and a differentiated services code point (DSCP) value of _____	34

Case Study 4 - Trey Research (QUESTION 20 - QUESTION 27)

Trey Research is a global marketing research organization that has a main office in Moscow and branch offices in Los Angeles, London, Berlin, Copenhagen, and Jakarta. The number of users per office is shown below.

Sites	Number of users
Moscow, Russia	14,000
London, United Kingdom	5,000
Jakarta, Indonesia	3,000
Copenhagen, Denmark	500
Berlin, Germany	7,000

Existing systems and telephones
The company has existing IP-PBX systems that are reaching end of life. They use an automatic call distribution (ACD) system for their help desk. This system provides interactive voice response options to users so that they can choose the location for support. This system is also reaching end

of life. The Copenhagen office uses a call group pickup solution that runs on an existing IP-PBX system. All users with the exception of users in Copenhagen have Direct Inward Dialing (DID) numbers. Trey Research has Skype for Business Enterprise pools in the Moscow, London, and Berlin offices, respectively. They run a Unified Communications Managed API (UCMA) based application in a trusted application pool. All users in Trey Research are using Aries phones. Users authenticate by using PIN codes.

Quarterly global town hall meetings

Executive conduct global town hall meetings each quarter. Each meeting occurs in a different office. Employees attend the global town hall meetings in meeting rooms which are equipped with full high definition (HD) screens for video. Ten percent of the employees attend the audio portion of the global town hall meetings from their desk.

Period	Location	Number of meeting rooms
Quarter 1	Moscow	6
Quarter 2	Berlin	2
Quarter 3	London	4
Quarter 4	Jakarta	1

Trey Research plans to implement Skype for Business Enterprise Voice across the company to replace the existing IP-PBX systems. You must use the following typical bandwidth values to determine the bandwidth requirements in kilobits per second (Kbps) for the solution.

Video resolution bandwidth

Video codec	Resolution and aspect ratio	Maximum video payload bit rate (Kbps)	Minimum video payload bit rate (Kbps)
H.264	320x180 (16:9) 212x160 (4:3)	250	15
H.264/RTVideo	424x240 (16:9) 320x240 (4:3)	350	100
H.264	480x270 (16:9) 424x320 (4:3)	450	200
H.264/RTVideo	640x360 (16:9) 640x480 (4:3)	800	300
H.264	848x480 (16:9)	1500	400
H.264	960x540 (16:9)	2000	500
H.264/RTVideo	1280x720 (16:9)	2500	700
H.264	1920x1080 (16:9)	4000	1500
H.264/RTVideo	960x144 (20:3)	500	15
H.264	1280x192 (20:3)	1000	250
H.264	1920x288 (20:3)	2000	500

Audio codec bandwidth

Codec	Typical	Maximum without FEC	Maximum with FEC
SIP / IM / Presence	1.6	2	3
Siren	25.5	52.6	68.6
G711	64.8	97	161
RTAudio Wideband	39.8	62	91
G722 STEREO	73.1	159.6	223.6
G722	46.1	100.6	164.6
RTAudio Narrowband	29.3	44.8	56.6
SILK Wideband	44.3	69	105

You have the following requirements.
General
- You must reduce international long distance calling costs, and lower support and administration costs for the IP-PBX and ACD solutions.
- You must implement voice survivability for all the sites in case of a wide area network (WAN) link failure.
- Where possible, you must optimize media paths.
- The solution must be resilient to the failure of mediation server pools.
- The maximum concurrent peer-to-peer connections between Moscow and Berlin will be 196.
- Response groups must be managed by dedicated response group administrators.
Gateways
- Existing gateways do not support the REFER method. You must use the existing gateways with Skype for Business to provide PSTN connectivity.
- In the event of a failure of both gateways at any office, all international calls from that office must route through the Moscow gateways.
Outbound calls
- All calls placed to Russia from any office must route through the Moscow gateways.
- Germany experiences high public switched telephone network (PSTN) call volume. All calls for Germany must breakout from Berlin in the event of Mediation Server pool failure in Berlin.
- All PSTN calls to Germany must use Berlin gateways in the event of Mediation Server pool failure in Berlin.
You test the Enterprise Voice solution with users in the Copenhagen office. During testing, users reported audio call issues related to the Call Admission Control (CAC) configuration. The relevant portion of the current configuration is shown in the Table below.

Region	Central Site	Sites in Region
MPLS	Moscow	Berlin, Copenhagen

You create the following policies.

Bandwidth Policy	Audio Bandwidth Session Limit (Kbps)	Audio Bandwidth Limit (Kbps)
LOW	75	1000
HIGH	150	2000

QUESTION 20
Hotspot Question
Two users who recently joined the company's finance department report that they are not able to use their Aries phones even when they tether the phone to their computer. You need to design a

solution for the Mediation Server pools and trunks that are required to support London, Berlin, and Moscow users. How many of each component should you deploy? (To answer, select the appropriate number of Mediation Server pools and trunks from the lists in the answer area.)

Answer Area

Component	Number to deploy
Mediation Server pools	▼
	3
	4
	5
	6
Trunks	▼
	3
	4
	5
	6

Answer:

Answer Area

Component	Number to deploy
Mediation Server pools	▼
	3
	4
	5
	6
Trunks	▼
	3
	4
	5
	6

QUESTION 21
Drag and Drop Question
You need to replace the existing automatic call distribution (ACD) helpdesk with Skype for Business Server 2015 solution. Which three actions should you perform in sequence to recreate the ACD in Skype for Business Server 2015? (To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.)

Possible Actions   Actions to Perfrom

Create a managed workflow.

Restart the responsegroup service.

Create and configure the agent group.

Create and configure queue.

Create an unmanaged workflow.

Answer:

Possible Actions   Actions to Perfrom

Possible Actions	Actions to Perfrom
Create a managed workflow.	Create and configure the agent group.
Restart the responsegroup service.	Create and configure queue.
Create and configure the agent group.	Create a managed workflow.
Create and configure queue.	
Create an unmanaged workflow.	

QUESTION 22
You are troubleshooting audio call issues for users in Copenhagen. You need to resolve the issues.
Which three actions should you perform? (Each correct answer presents part of the solution.
Choose three.)

A. Create and configure a new network region and assign Copenhagen to this region.
B. Create an inter-site policy which includes Copenhagen and Berlin and apply the existing BandwidthPolicyProfile "LOW".
C. Create an inter-site policy which includes Copenhagen and Moscow and specify the existing BandwidthPolicyProfile "LOW".
D. Add Copenhagen to the Berlin network region.

E. Create and configure a new network region and assign Berlin and Copenhagen to this region.

Answer: BCE

QUESTION 23
You need to plan a solution to allow masking of a calling number. How can a calling number of a Skype for Business user be changed to match the main number of the company?

A. Create a new normalization rule and add it to the global dial plan.
B. Use the Skype for Business control panel to mask the calling number.
C. Create a trunk translation rule that masks the called number.
D. Use the voice gateway to mask the called number.

Answer: AD

QUESTION 24
You need to configure the trunks defined in the Skype for Business topology based on the requirements. Which two actions should you perform? (Each correct answer presents part of the solution. Choose two.)

A. Enable media bypass.
B. Enable centralized media processing.
C. Set Encryption Support Level to required.
D. Disable REFER support.

Answer: AD

QUESTION 25
Drag and Drop Question
You need to configure the Berlin public switched telephone network (PSTN) usages and voice routes. In which order will the PSTN usage policies be applied? (To answer, move all PSTN usage policies from the list of PSTN usage policies to the answer area and arrange them in which they should be applied.)

PSTN usage policies

Berlin_National_pstnusage

Moscow_International

Moscow_National_pstnusage

Berlin_International

PSTN usage policy application order

Answer:

PSTN usage policies

PSTN usage policy application order

Moscow_International

Berlin_National_pstnusage

Moscow_National_pstnusage

Berlin_International

QUESTION 26
Users in Copenhagen report frequent audio call issues. You need to resolve the issues. Which three actions should you perform? (Each correct answer presents part of the solution. Choose three.)

A. Create a new region link between the MPLS region and the Berlin region.
B. Create and configure a new network region and assign only Copenhagen to this region.
C. Create an inter-site policy which includes Copenhagen and Moscow and specify the existing BandwidthPolicyProfile "LOW".
D. Create an inter-site policy which includes Copenhagen and Berlin and apply the existing BandwidthPolicyProfile "LOW".
E. Create and configure a new network region and assign Berlin and Copenhagen to this region.

Answer: CDE

QUESTION 27
Drag and Drop Question
You need to replace the existing call group pickup solution in Denmark with a Skype for Business solution. You need to prepare the Skype for Business Server 2015 environment to provide call group pickup functionality. Which three Skype for Business Management Shell cmdlets should you run in sequence? (To answer, move the appropriate Skype for Business Management Shell cmdlets from the list of cmdlets to the answer area and arrange them in the correct order.)

Possible actions

Actions to perform

Enable-CsTopology

New-CsTrustedApplication

New-CsCallParkOrbit

New-CsTrustedApplicationPool

New-CsTrustedApplicationEndpoint

Answer:

Possible actions

- New-CsCallParkOrbit
- New-CsTrustedApplicationEndpoint

Actions to perform

- New-CsTrustedApplicationPool
- New-CsTrustedApplication
- Enable-CsTopology

Explanation:
"You need to prepare the Skype for Business Server 2015 environment to provide call group pickup functionality." We're just preparing the environment. We're not creating the call park yet. After running the three cmdlets above, you can then run the NewCsCallParkOrbit cmdlet.

Case Study 5 - Tailspin Toys (QUESTION 28 - QUESTION 32)

Tailspin toys is a toy manufacturer. The company headquarters is located in Melbourne. The company has a design and development office located in Singapore. The company also has branch offices in Hong Kong, Jakarta, Tokyo, Sydney, and Auckland. Tailspin Toys has implemented Skype for Business Server 2015 and is actively using instant messaging (IM), presence, peer-to-peer audio and video, conferencing, remote access, and federation. The company uses Exchange Online. The number of users in each office is shown in the following table.

Office	Number of Users
Melbourne	4,000
Sydney	2,000
Auckland	700
Singapore	3,000
Hong Kong	1,500
Jakarta	150
Tokyo	1,500

Existing Environment
Networks
You have the following networks.
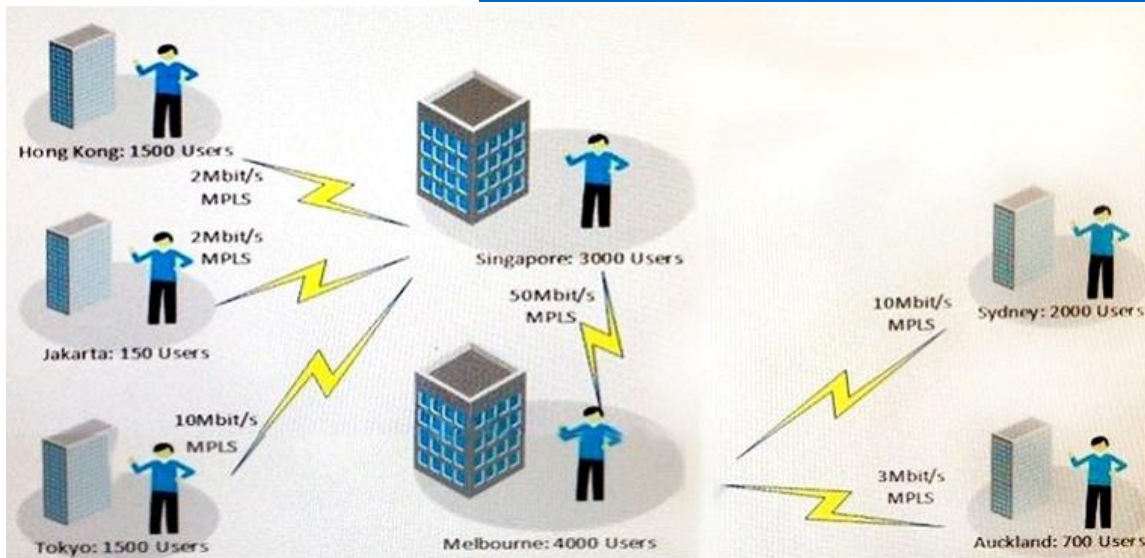
The network latency between each branch site and the central site is more than 25ms. Based on the network latency, you use the RTAudio codec for all public switched telephone network (PSTN) calls from the branch sites. All Windows desktop client computers run Windows 7, Windows 8.1, or Windows 10 and are domain joined.

Skype for Business

Singapore and Melbourne each have the following Skype for Business Server 2015 components.
- A front-end pool with three front-end servers.
- A back-end pool that is configured as a two server SQL AlwaysOn availability group.
- A single Edge Server.
- A single Reverse Proxy server.
- A single Office Web App server.

Tailspin Toys currently uses a third-party dial-in conferencing provider. Moving dial-in conferencing from the third-party dial-in conferencing provider to the new Skype for Business solution will add a maximum concurrency of 50 PSTN calls to the Melbourne and Singapore sites, respectively.

Codec	RTAudio − 8 Khz	RTAudio − 16 Khz	Siren	G.711	G.722	G.722 Stereo	Silk − 8 Khz	Silk − 16 Khz
Typical Bandwidth − No FEC	30.9 Kbps	39.8 Kbps	25.5 Kbps	64.8 Kbps	46.1 Kbps	73.1 Kbps	30 Kbps	44 Kbps

PBX and Dial plans
The following table shows the call load for the existing IP PBX solution.

Office	Maximum Concurrent Calls
Melbourne	800
Sydney	400
Auckland	140
Singapore	600
Hong Kong	300
Jakarta	30
Tokyo	300
Total	**2570**

The following table details the Dial Plan for the Sydney office.

Name	Pattern	Translation	Description
AU-Mobile	^0[45]\d{8}	+61$1	Australian Mobile Phones, 04 or 05 plus 8 digits

User issues
Users report the following issues:
- Users in Hong Kong report issues with media quality when using Skype for Business conferencing features.
- Users who need to use Call Via Work report that this option is not visible in their desktop client.
- Users in the Auckland office report issues regarding call quality. You identify that the issue relates to use of non-qualified devices. You purchase new qualified devices and have delivered the device to the Auckland office.
- After the migration from the existing IP-PBX, users in Sydney report that they cannot make calls to mobile numbers.

User1 is located in the Auckland office. User1 reports persistent call quality issues. You generate the following diagnostic report for User1.

Caller Device and Signal Metrics

Capture device:	Microphone (Integrated Digital HD Audio)	Capture device driver:	Unknown: x.x.x.x
Render device:	Microphone (Integrated Digital HD Audio)	Render device driver:	Unknown: x.x.x.x
Microphone glitch rate:	1898 per 5 minutes	Speaker glitch rate:	0 per 5 minutes
Microphone timestamp drift:	-0.00871420 %	Speaker timestamp drift:	0.00000000 %
Microphone timestamp error:	0.15610009431839 ms	Speaker timestamp error:	0.0137684997171164 ms
Echo event cause:		Voice switch cause:	
Send signal level:	-10 dBov	Receive signal level:	-17 dBov
Send noise level:	-57 dBov	Receive noise level:	-60 dBov
Echo return:		Initial signal level RMS:	0

Audio Stream (Caller->Callee)

Codec	g722	Sample rate:	16000
Audio FEC:	False	Bandwidth estimates:	99012 Kbps
Packet utilization:	5177		
Avg. packet loss rate:	0.00%	Max. packet loss rate:	0.00 %
Avg. jitter:	19 ms	Max. jitter:	23 ms
Avg. round trip:	0 ms	Max. round trip:	3 ms
Burst duration:	0 ms	Burst gap duration:	5360 ms
Burst density:	0.00 %	Burst gap density:	0.00 %
Avg. concealed samples ratio:	1.00 %	Avg. stretched samples ratio:	1.00 %
Avg. compressed samples ratio:	1.00%		
Avg. network MOS:	4.15	Min. network MOS:	4.03
Avg. network MOS degradation:	0.15	Max. network MOS degradation:	0.26
NMOS degradation (jitter):	100.00 %	NMOS degradation (packet loss):	0.00 %

Audio Stream (Callee -> Caller)

Codec	g722	Sample rate:	16000
Audio FEC:	False	Bandwidth estimates:	99012 Kbps
Packet utilization:	3574		
Avg. packet loss rate:	0.00%	Max. packet loss rate:	0.00 %
Avg. jitter:	1 ms	Max. jitter:	3 ms
Avg. round trip:	1 ms	Max. round trip:	2 ms
Avg. concealed samples ratio:	0.00 %	Avg. stretched samples ratio:	0.00 %
Avg. compressed samples ratio:	0.00%		
Avg. network MOS:	4.29	Min. network MOS:	4.25
Avg. network MOS degradation:	0.01	Max. network MOS degradation:	0.05

Requirements
Business Requirements
You have the following business requirements.
- You must centralize voice services and reduce the costs associated with long distance and international calls.
- You must implement a single voice solution across the enterprise.
- Any planned changes to the solution must minimize administrative and financial costs.
- Executives must be allowed to use third party tablets and mobile devices.
- Executives must be able to receive inbound calls even under bandwidth constrained situations.
Technical Requirements
You have the following technical requirements. The new Skype for Business solution needs to replace the existing third-party party dial-in conferencing provider.
Network requirements
Prioritize Skype for Business traffic on the network where possible. Avoid over-subscription on

bandwidth constraint network sites.
Unified Messaging requirements
Tailspin toys prefers to use voice mail as part of Exchange Online.
Enterprise Voice requirements
Provide enterprise voice to all users in all locations. Ensure that the solution is highly available.
PSTN connections must be centralized to Melbourne and Singapore. You must implement Call Via
Work functionality for specific users.

QUESTION 28
You need to implement the Mediation services solution. What should you do?

A. Use a collocated Mediation server on the existing Front End Servers in Melbourne and Singapore.
B. Deploy a new stand-alone Mediation server pool in Melbourne and Singapore.
C. Deploy a dedicated Mediation server pool at each site.
D. Deploy a Survivable Branch appliance at each site.

Answer: A

QUESTION 29
Hotspot Question
You need to configure the Enterprise Voice deployment for the Hong Kong site. How should you
configure the Hong Kong network link? (To answer, select the appropriate codec and bandwidth in
kilobits per second (Kbps) from the list in the answer area.)

Answer area

Option	Action
Codec	**▼**
	RTAudio NarrowBand (8kHz)
	RTAudio WideBand (16kHz)
	Silk NarrowBand (8kHz)
	Silk WideBand (16kHz)
Bandwidth	**▼**
	9270 Kbps
	11940 Kbps
	18540 Kbps
	9000 Kbps

Answer:

Answer area

Option	Action
Codec	**RTAudio NarrowBand (8kHz)** RTAudio WideBand (16kHz) Silk NarrowBand (8kHz) Silk WideBand (16kHz)
Bandwidth	**9270 Kbps** 11940 Kbps 18540 Kbps 9000 Kbps

QUESTION 30
You need to enable all users for voice mail. Which three configuration steps are required to configure the environment for Exchange Unified Messaging? (Each correct answer presents part of the solution.Choose three.)

A. Run the OcsUMUtil executable on the Skype for Business server.
B. Run ExchUCUtil.ps1 on the Exchange server.
C. Run the New-CsHostingProvider Skype for Business Management Shell cmdlet.
D. Run the New-CsHostedVoicemailPolicy Skype for Business Management Shell cmdlet.
E. Apply the hosted voice mail policy to all users.

Answer: ABD

QUESTION 31
You need to solve the Enterprise Voice issue experienced by Sydney users. Which normalization rule should you use for mobile numbers?

A. ^0[45]\((d8))$
B. ^0([45]\d{6})$
C. ^0[45]\d({8})$
D. ^0([45]\d{8})$

Answer: D

QUESTION 32
Hotspot Question
You need to configure media bypass for Tailspin Toys. What should you do? (To answer, select the appropriate Media Bypass setting from each list in the answer area.)

Site	Media Bypass
Sydney	⌄
	Enabled
	Disabled
Auckland	⌄
	Enabled
	Disabled
Melbourne	⌄
	Enabled
	Disabled
Singapore	⌄
	Enabled
	Disabled
Hong Kong	⌄
	Enabled
	Disabled
Jakarta	⌄
	Enabled
	Disabled
Tokyo	⌄
	Enabled
	Disabled

Answer:

Site	Media Bypass

Sydney

Enabled
Disabled

(Enabled highlighted)

Auckland

Enabled
Disabled

(Enabled highlighted)

Melbourne

Enabled
Disabled

(Disabled highlighted)

Singapore

Enabled
Disabled

(Disabled highlighted)

Hong Kong

Enabled
Disabled

(Enabled highlighted)

Jakarta

Enabled
Disabled

(Enabled highlighted)

Tokyo

Enabled
Disabled

(Enabled highlighted)

Case Study 6 - Contoso, Ltd.-2 (QUESTION 33 - QUESTION 36)

Contoso, Ltd. is a Canadian business law firm that currently employs 300 people. The company operates a main office in Vancouver that houses 250 employees and a branch office in Seattle that houses 50 employees. All Contoso users are Skype for Business- enabled. Contoso is launching a hybrid configuration of Office 365 to validate the cloud- based Exchange Online service. Contoso plans to introduce a remote disaster recovery data center to host remote replicas of key services, including Active Directory Domain Services (AD DS), Skype for Business, Exchange, and files and legal software. The company also plans to acquire a small law firm in Vancouver called Litware, Inc., which has 80 employees. Litware currently uses a 10-megabit per second (Mbps) Internet connection. Half of Litware employees will use Skype for Business services. All Skype for Business-enabled users in Litware will use Instant Messaging only. Currently, Instant Messaging concurrent usage at Litware is 50 percent during peak hours. There is a possibility that Contoso will make two more acquisitions during the next three years. Vancouver and Seattle employees have submitted support tickets to report poor quality of outbound Skype for Business calls to external users. A user

activity report collected by the help desk department is shown in the User Activity Report section. There is a concern that in the future, the volume of Skype for Business traffic may reach up to 50 percent of the current bandwidth available in the Vancouver office.

User Activity Report

Audio Stream (Caller -> Callee)			
Codec:	G722	Sample rate:	16000
Audio FEC:	False	Bandwidth estimates:	8987 Kbps
Packet utilization:	80370		
Avg. packet loss rate:	16%	Max. packet loss rate:	21.00%
Avg jitter:	23 ms	Max. jitter:	29 ms
Avg. round trip:	21 ms	Max. round trip:	24 ms
Burst duration:	0 ms	Burst gap duration:	1606060 ms
Burst density:	0.00%	Burst gap density:	0.00%
Avg. concealed samples ratio:	0 .00 %	Avg. stretched samples ratio:	0.00%
Avg. compressed samples ratio:	0.00%		
Avg. network MOS:	2.21	Min. network MOS:	1.89
Avg. network MOS degradation:	0.08	Max. network MOS degradation:	0.40
NMOS degradation (jitter):	0.00%	NMOS degradation (packet loss):	0.00%
Avg. sending MOS:	1.35	Min. sending MOS:	1.00
Audio Stream (Callee -> Caller)			
Codec:	G722	Sample rate:	16000
Audio FEC:	False	Bandwidth estimates:	9011 Kbps
Packet utilization:	7887		
Avg. packet loss rate:	22.00%	Max. packet loss rate:	29.00%
Avg. jitter:	1.2 ms	Max. jitter	2.2 ms
Avg. round trip:	1.3 ms	Max. round trip:	2.2 ms
Burst duration:	0 ms	Burst gap duration:	156400 ms
Burst density:	0.00%	Burst gap density:	0.00%
Avg. concealed samples ratio:	0.00%	Avg. stretched samples ratio:	0.00%
Avg. compressed samples ratio:	0.00%		
Avg. network MOS:	4.23	Min. network MOS:	4.06
Avg. network MOS degradation:	0.06	Max. network MOS degradation:	0.23
NMOS degradation (jitter)	0.00%	NMOS degradation (packet loss)	0.00%
Avg. listening MOS:	1.58	Min. listening MOS:	1.00

Existing Environment

The core portion of the infrastructure is located in the Vancouver data center, although the Seattle data center also has two servers (listed below) to provide redundancy of Active Directory and data services. The following services and applications comprise Contoso's infrastructure in Vancouver and Seattle.

Vancouver Data Center

Role	Name
Active Directory Domain Controllers	DC1-VAN
	DC2-VAN
Exchange 2013 Servers	EXCH1-VAN
	EXCH2-VAN
Skype for Business Server 2015 Front-End Servers	FE1-VAN
	FE2-VAN
Skype tor Business Server 2015 Back-End server	BE1-VAN
Skype for Business Server 2015 Edge Server	Edge1-VAN
DFS Server	FileSRV1-VAN
Backup Server	BackupSRV1-VAN
Fax and Print server	PrintSRV1-VAN
Application Server	AppSRV1-VAN

Seattle Data Center

Role	Name
Active Directory Domain Controller	DC1-SEA
DFS Server	FileSRV1-SEA

An overview of the network infrastructure of Vancouver and Seattle data centers is shown in the exhibit. All users in the Vancouver and Seattle offices use the Microsoft Windows 8 Enterprise operating system and phones that are enabled for Enterprise voice. Contoso expects to see a growing number of remote users. They anticipate that up to 20 percent of users in Vancouver might work remotely. Contoso has defined a team of 35 users who will participate in a pilot deployment of the Office 365 hybrid configuration. The offices in Vancouver and Seattle are using 5-Mbps Internet connections. Contoso has a site-to-site VPN between the Vancouver office and the Seattle office. All external outbound calls from the Vancouver and Seattle offices are routed outside through the office in Vancouver.

Business Requirements

Contoso needs to review the existing network topology as well as the Skype for Business Server 2015 infrastructure to ensure that network capacity is sufficient to accommodate the Litware, Inc. Skype for Business users in the future. Contoso expects to see up to 85 percent of simultaneous instant messaging, 1% of peer- to-peer traffic and 25 percent of public switched telephone network (PSTN) calls over the WAN during business hours. All existing issues that relate to poor quality of outbound Skype for Business calls need to be addressed as well. Contoso wants to ensure the following.

```
- Current network bandwidth allocated to the Vancouver office is
sufficient to sustain the future volume of Skype for Business traffic and
guarantee high quality of Skype for Business calls.
- Volume the Skype for Business traffic does not exceed 25 percent of the
WAN bandwidth.
```

Contoso plans to redesign the existing site-to-site VPN solution between the Vancouver and Seattle offices to implement a robust and reliable WAN solution with end-to-end support of Quality of Service (QoS). The recommended design solution needs to eliminate the possibility of WAN oversubscription by Skype for Business traffic. The proposed Skype for Business Server 2015 solution needs to be.

```
- Scalable to accommodate the company's future acquisitions.
- Readily available for Vancouver and Seattle users.
```

In case of a disaster, a manual switchover of Skype for Business services to the disaster recovery datacenter should be available.

Technical Requirements

All Session Initiation Protocol traffic (SIP) traffic must be encrypted. All external Skype for Business Server 2015 services must be protected by a firewall. A commercial third-party certificate must be used on the external interface of Skype for Business Server 2015 Edge servers. The Role-Based Access Control (RBAC) model will be implemented to delegate basic administrative tasks to the Skype for Business help desk team. All maintenance of Skype for Business servers must be performed outside of business hours. The proposed architecture solution must support interoperability between Skype for Business Server 2015 and Exchange 2013. The Skype for Business Bandwidth Calculator must be used to analyze Skype for Business traffic. The QoS end-to-end support needs to be implemented.
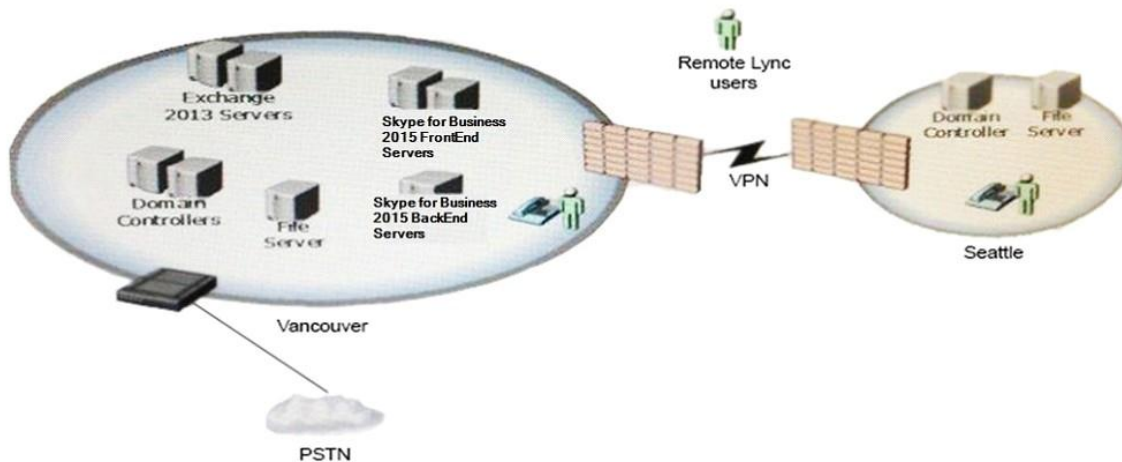
QUESTION 33
Drag and Drop Question
You are developing a design solution to eliminate the possibility of wide area network (WAN) over-subscription by Skype for Business traffic. You need to assign tasks to each office. Which tasks should you assign to each office? (To answer, drag the appropriate task or tasks to the correct office or offices in the answer area. Each task may be used once, more than once, or not at all. You may need to drag the split bar between panels or scroll to view content.)

Answer:

Tasks

Answer Area

Configure Call Admission Control (CAC).

Deploy Quality of Service (QoS).

Deploy sFlow on all network switches.

Create a throttling policy.

Implement Multiprotocol Label Switching (MPLS).

Vancouver office

Implement Multiprotocol Label Switching (MPLS).

Deploy Quality of Service (QoS).

Configure Call Admission Control (CAC).

Seattle office

Implement Multiprotocol Label Switching (MPLS).

Deploy Quality of Service (QoS).

QUESTION 34
Hotspot Question
You need to estimate the volume of Skype for Business traffic. In the Skype for Business Calculator, which options should you select? (To answer, select the appropriate branch site or sites in the Skype for Business Bandwidth Calculator.)

Answer:

QUESTION 35
You need to estimate the future volume of Skype for Business traffic in the Vancouver office. Which two employee totals should you use for the estimate? (Each correct answer presents part of the solution. Choose two.)

A. 300 employees at Contoso, Ltd.
B. 80 employees at Litware, Inc.
C. 40 employees at Litware, Inc.
D. 35 hybrid users at Contoso, Ltd.

Answer: AC

QUESTION 36
You need to define the goals that you would like to achieve after you perform usage modeling of Skype for Business traffic. Which two goals should you establish? (Each correct answer presents part of the solution. Choose two.)

A. Confirm that bandwidth is sufficient for 40 new Litware, Inc. Skype for Business users.
B. Confirm that the volume of Skype for Business traffic does not exceed 5 megabits per second (Mbps).
C. Confirm that bandwidth is sufficient for 80 new Litware, Inc. Skype for Business users.
D. Confirm that the volume of Skype for Business traffic does not exceed 25 percent of wide area network (WAN) bandwidth.
E. Confirm that bandwidth is sufficient for Microsoft Office 365 Hybrid Skype for Business deployment.

Answer: CD

QUESTION 37
You support Skype for Business Server 2015 servers in your customer's network. The network includes two branches connected with an 8 megabits per second (Mbps) network circuit. The circuit has 1 Mbps of dedicated bandwidth for Skype for Business voice traffic. The network is required to handle 50 peer-to-peer (P2P) calls at a minimum. Users report that calls between the branches are being dropped, and voice quality is degraded. Skype for Business audio codecs.

Codec	Typical stream bandwidth kilobits per second (kbps)
RTAudio Wideband	39.8
RTAudio Narrowband	29.3
SILK Wideband	44.3
G.722	46.1
Siren	25.5

You need to calculate appropriate bandwidth for the P2P call volume required. What is the minimum dedicated bandwidth that you should allocate?

A. 1.2 Mbps
B. 1.4 Mbps
C. 1.9 Mbps
D. 2.2 Mbps
E. 2.3 Mbps

Answer: D
Explanation:
https://technet.microsoft.com/en-gb/library/gg425841.aspx

QUESTION 38
You support a Skype for Business Server 2015 environment that consists of the following. A single Skype for Business Server 2015 Standard Edition pool that is located in a main office. Four branch offices that are connected by a 9 megabits per second (Mbps) dedicated wide area network (WAN) link, each of which has 300 users. You need to be able to support 75 concurrent calls. Users in the branch offices report poor quality audio during conferences. You perform the following troubleshooting steps:
```
- Implemented Quality of Service (Qos) and Call Admission Control (CAC).
In CAC, defined the main office and each branch office as a site In CAC,
associated subnets to the relevant sites.
- Provisioned policy-based QoS for media traffic.
```

```
- Poor audio quality persists.
```
You run the Skype for Business Management Shell Get-CsNetworkSite cmdlet. The relevant portion of the results are shown below.

```
C:\...\Get-CsNetworkSite

Identity : DataCenter1
NetworkSiteID : DataCenter1
Description :
NetworkRegionID : Corporate
BypassID : bec84b6e-1874-456d-89eb-b57dac78a2be
BWPolicyProfileID :
LocationPolicy :

Identity : DataCenter2
NetworkSiteID : DataCenter2
Description :
NetworkRegionID : Corporate
BypassID : 2b18787d-699e-44d0-9ee6-d57e4edda60d
BWPolicyProfileID :
LocationPolicy :

Identity : Redmond
NetworkSiteID : Redmond
Description :
NetworkRegionID : Corporate
BypassID : 36b4aadc-4e96-440c-aaf8-00bc22607493
BWPolicyProfileID :
LocationPolicy :

Identity : London
NetworkSiteID : London
Description :
NetworkRegionID : Corporate
BypassID : 8c207f05-4deb-42c6-bb2a-78e39fe84ec0
BWPolicyProfileID :

LocationPolicy :C:\...\
```

You need to improve audio quality. What should you do?

A. Create a region route to route network traffic between the CAC sites.
B. Create a bandwidth policy profile with an Audio Session Limit of 40 Kbps. Assign the profile to the central site.

C. Create a bandwidth policy profile with an Audio Session Limit of 40 Kbps and an Audio Limit of 3 Mbps. Assign the profile to each branch site.
D. Create a bandwidth policy profile with an Audio Session Limit of 40 Kbps and an Audio Limit of 1 Mbps. Assign the profile to each branch site.

Answer: C
Explanation:
https://technet.microsoft.com/en-us/library/gg412785.aspx

QUESTION 39
Drag and Drop Question
You have a Skype for Business Server 2015 infrastructure. You have one Enterprise Edition pool named pool1.contoso.com. Enterprise Voice is enabled for all users. You have a public switched telephone network (PSTN) gateway named mg1.contoso.com that does not support secure signaling. The Encryption support level of the global trunk configuration is set to Not Supported. You add a second PSTN gateway named mg2.contoso.com. The SIP General parameters for mg2.contoso.com are configured as shown in the following table.

Setting	Value
SIP Transport Type	TLS
SIP UDP Local Port	5,060
SIP TCP Local Port	5,060
SIP TLS Local Port	5,067
Enable SIPS	Disable

On mg2.contoso.com, you generate and install a certificate from an internal certification authority (CA). You need to ensure that Skype for Business Server 2015 can use both PSTN gateways to make calls on the PSTN. Which four actions should you perform in sequence? (To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.)

Actions   **Answer Area**

From the Topology Builder, create a new PSTN gateway.

Create a new trunk configuration for mg2.contoso.com and set the Encryption support level to **Required.**

Publish the topology.

Add the trunk to the existing voice routes.

Create a new trunk configuration for mg2.contoso.com and set the Encryption support level to **Not Supported.**

Set the Encryption support level of the global trunk configuration to **Required.**

Answer:

Actions

| From the Topology Builder, create a new PSTN gateway. |
| Create a new trunk configuration for mg2.contoso.com and set the Encryption support level to **Required**. |
| Publish the topology. |
| Add the trunk to the existing voice routes. |
| Create a new trunk configuration for mg2.contoso.com and set the Encryption support level to **Not Supported**. |
| Set the Encryption support level of the global trunk configuration to **Required**. |

Answer Area

| From the Topology Builder, create a new PSTN gateway. |
| Create a new trunk configuration for mg2.contoso.com and set the Encryption support level to **Required**. |
| Add the trunk to the existing voice routes. |
| Publish the topology. |

Explanation:
https://technet.microsoft.com/en-us/library/jj721915.aspx

QUESTION 40
Your company has a Skype for Business Server 2015 infrastructure. You need to ensure that users can answer calls placed to other users by using the Group Call Pickup feature. Which Skype for Business Management Shell cmdlet should you run?

A. New-CsDialPlan
B. New-CsRoutingConfiguration
C. New-CsCallParkOrbit
D. New-CsVoiceRoutingPolicy

Answer: C
Explanation:
https://technet.microsoft.com/en-us/library/jj945627.aspx

QUESTION 41
Tailspin Toys deploys a Skype for Business Enterprise Voice environment that has two paired pools. The pools are located in Sydney and Singapore for high availability (HA). You must collect user opinions about the quality of audio calls. You must survey 60% of the calls for feedback. You need to configure end users ratings for the audio calls. What should you do?

A. Use SQL Management studio to run the SQL query [QoeMetrics].[dbo].[CallQualityFeedbackTokenDef].
B. Deploy Call Quality Dashboard (CQD) to see the Rate My Call reports.
C. Configure Rate My Call percentage to 60% and deploy Call Quality Dashboard (CQD) to see the reports.
D. Use SQL Management studio to run the SQL query [QoeMetrics].[dbo].[CallQualityFeedbackToken].

Answer: B
Explanation:
https://technet.microsoft.com/en-us/library/dn951407.aspx
http://blogs.technet.com/b/jenstr/archive/2015/05/05/rate-my-call-in-skype-for-business-2015.aspx

QUESTION 42
You support a Skype for Business environment. You deploy System Center Operations Manager. You implement Enterprise Voice. Some users use a desktop phone to place and receive public switched telephone network (PSTN) calls with people outside of Skype for Business. Some of these users report intermittent connectivity issues with incoming and outgoing calls. You need to

periodically confirm that users are able to place and receive calls with people outside of Skype for Business. Which two actions should you perform? (Each answer presents part of the solution. Choose two.)

A. In the synthetic transaction, run the Test-CsP2PAV Skype for Business Management Shell cmdlet.
B. Create a watcher node and configure it for an extended, non-default synthetic transaction.
C. In the synthetic transaction, run the Test-CsPstnPeerToPeerCall Skype for Business Management Shell cmdlet.
D. Create a watcher node and configure it for a default synthetic transaction.

Answer: BC
Explanation:
https://technet.microsoft.com/en-us/library/jj204943(v=ocs.15).aspx

QUESTION 43
You create a topology that includes Enterprise Voice. You configure the system to play a message when unassigned numbers are dialed. You need to add the voice announcements. Which two file formats can you use? (Each answer presents a complete solution. Choose two.)

A. WAVE Audio file (*.WAV).
B. Windows Media Audio File (*.WMA)
C. MPEG-4 Audio File (*.M4A)
D. MPEG-2 Audio File (*.MPA)
E. MP3 Audio File (*.MP3)

Answer: AB
Explanation:
https://technet.microsoft.com/en-us/library/gg398649(v=ocs.14).aspx

QUESTION 44
You have a Skype for Business Server 2015 environment. All users are enabled for Enterprise Voice. You have a Microsoft Exchange Server 2013 organization that contains one server named EX01. You plan to implement Unified Messaging (UM). From Skype for Business Management Shell, you run the following commands:
```
New-UMDialPlan-Name UMDialPlan-UriType "SipName" -VoipSecurity Secured
-NumberOfDigitsInExtension 4 ExchUCUtil.ps1
```
From Event Viewer, you discover the following error message when Skype for Business Server 2015 attempts to transfer a call to UM:
```
"Attempts to route servers in an Exchange UM Dialplan failed. No server
in the dialplan UMDialPlan accepted the call with id
[03b5ba2bf7ec4663bc43e8e49c246634].
Cause: Dialplan is not configured properly."
```
You need to ensure that the Enterprise Voice users can receive voice mail. Which two actions should you perform? (Each correct answer presents part of the solution. Choose two.)

A. From the Exchange Management Shell, run the following command:
   `New-UmAutoAttendant -name LyncAa -UmDialPlan LyncUMDialPlan -Status Enabled`
B. From the Exchange Management Shell, run the following command:
   `Set-UmCallRouterSettings EX01 -UmStartupMode Tls -DialPlans "UMDialPlan"`
C. Change the value of the VoipSecurity of the UMDialPlan from Secured to SipSecured.
D. From the Exchange Management Shell, run the following command:
   `Set-UmService EX01 -UmStartupMode Tls -DialPlans "UMDialPlan"`
E. Change the value of the UriType property of the UMDialPlan from SipName to E.164.

Answer: AD
Explanation:
https://technet.microsoft.com/en-gb/library/jj687983.aspx

QUESTION 45
You support a customer whose network environment includes Skype for Business Server 2015 servers. All of the company servers are located in the company datacenter. All users have Skype for Business client installed on their local computers. You deploy a virtual desktop infrastructure (VDI) environment to a pilot group of users. You install the Lync VDI plug-in and plug Skype for Business compatible devices to the users' computers. Users report that Skype for Business fails intermittently when pairing with the Lync VDI plug-in. You need to ensure reliable access to Skype for Business Server 2015 for this pilot group of users. What should you do?

A. For all VDI users, set the value of the EnableMediaRedirection property to $FALSE.
B. Configure the remote desktop client settings so that audio plays on the local computer and remote recordingis disabled.
C. Run Windows 10 or higher on the local computers.
D. Uninstall Skype for Business from the local users' computers.

Answer: D
Explanation:
https://technet.microsoft.com/en-us/library/jj204713(v=ocs.15).aspx

QUESTION 46
You have a Skype for Business Server 2015 infrastructure and a Microsoft Exchange Server 2013 organization. Unified Messaging (UM) integration is enabled. You need to prevent the use of call answering rules. Which Skype for Business Management Shell cmdlet should you run?

A. Set-CSVoicePolicy
B. Remove-UMCallAnsweringRule
C. Set-CSDialPlan
D. Set-UMDialPlan

Answer: D
Explanation:
https://technet.microsoft.com/en-us/library/bb124408(v=exchg.160).aspx

QUESTION 47
Fabrikam has recently deployed Skype for Business Server for all modalities including Enterprise Voice which they manage from central location in Sydney. A recent change in their work from home policies requires users to work from their homes at least 3 days a week. Fabrikam's IT help desk has 10 members in their tier 1 TeleHelp group dedicated to receive incoming support calls of the internal employees. Fabrikam wants to deploy a Skype for Business solution for the TeleHelp group with minimum administrative effort. TeleHelp group members want to get a notification of all the incoming calls to any member of the TeleHelp group. Each member should be able to answer the call as per their availability. You need to deploy Skype for Business solution for TeleHelp group. What two actions should you perform? (Each answer presents part of the solution. Choose two.)

A. Configure Group Call Pickup for TeleHelp group.
B. For every TeleHelp group member configure Forward My Calls to Team-Call Group consisting of all 10 members.
C. For every TeleHelp group member configure Forward My Calls to My Delegates and add each member as adelegate to each other.
D. For every TeleHelp group member configure Simultaneously Ring to My Delegates and add each memberas a

delegate to each other.
E. Configure a response group and add TeleHelp group members as formal agents.
F. Configure a response group and add TeleHelp group members as informal agents.

Answer: A

QUESTION 48
Your network contains the servers shown in the following table.

Server name	Software	Role
Server1	Skype for Business Server 2015	Standard Edition server
Server2	Skype for Business Server 2015	Edge Server
Server3	Microsoft Exchange Server 2013	Mailbox server Client Access server

You configure the infrastructure to use Exchange Unified Messaging (UM). You need to create a new contact object for the UM auto attendant. What should you do?

A. From Server1, run ocsumutil.exe.
B. From Server1, run the New-CsExUmContact Skype for Business Management Shell cmdlet.
C. From Server3, run the New-MailContact Exchange Management Shell cmdlet.
D. From Server3, run the exchucutil.ps1 script.

Answer: A
Explanation:
http://blog.schertz.name/2015/10/skype-for-business-and-exchange-um-integration/

QUESTION 49
You have a Microsoft Exchange Server 2013 organization and a Skype for Business Server 2015 infrastructure. You need to design a Unified Messaging (UM) solution to meet the following requirements:
– Support a peak concurrency of 500 calls.
– Connect to two Skype for Business Server 2015 pools.
What is the minimum number of mailbox servers that are required?
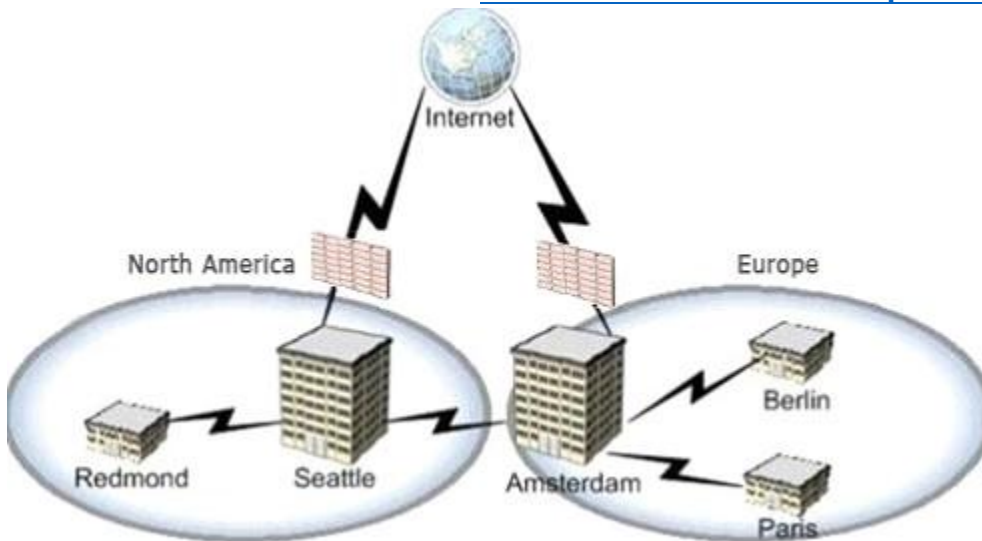
A. 1
B. 2
C. 3
D. 5

Answer: C
Explanation:
http://technet.microsoft.com/en-us/library/aa997637

QUESTION 50
Drag and Drop Question
Contoso, Ltd., has five offices. The offices are configured as shown in the exhibit.

Each office has a local connection to the public switched telephone network (PSTN). The peak usage statistics are shown in the following table.

Office	Number of calls	Percentage of calls to North America	Percentage of calls to Europe
Redmond	10	50 percent	50 percent
Seattle	100	80 percent	20 percent
Amsterdam	50	20 percent	80 percent
Berlin	20	0 percent	100 percent
Paris	20	50 percent	50 percent

Every audio call consumes 100 kilobits per second (Kbps). You plan to replace the PSTN connection with a centralized SIP trunking service. The service will contain a Sip trunk in the Seattle office and a SIP trunk in the Amsterdam office. The solution must use least cost routing. You need to calculate the maximum amount of bandwidth that will be used by each SIP trunk. What is the maximum amount of bandwidth that will be used by each SIP trunk? (To answer, drag the appropriate bandwidth amount to the correct SIP trunk in the answer area. Each bandwidth amount 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.)

Bandwidth

8,500 Kbps

9,500 Kbps

10,000 Kbps

10,500 Kbps

12,500 Kbps

Answer Area

Amsterdam SIP trunk: | Bandwidth |
|---|

Seattle SIP trunk: | Bandwidth |
|---|

Answer:

Bandwidth

8,500 Kbps

9,500 Kbps

10,000 Kbps

10,500 Kbps

12,500 Kbps

Answer Area

Amsterdam SIP trunk: | 9,500 Kbps |
|---|

Seattle SIP trunk: | 10,500 Kbps |
|---|

QUESTION 51
Drag and Drop Question
You have a Skype for Business Server 2015 infrastructure. You have a Virtual Desktop Infrastructure (VDI) that uses Hyper-V. You use the VDI templates based on Windows 8.1. All thin clients run Windows 8.1. Each thin client has a Skype for Business-qualified headset. You need to prepare all of the thin clients and all of the VDI templates so that users can place calls by using the headset. Which components should you install on the thin clients and the VDI templates? (To answer, drag the appropriate components to the correct location in the answer area. Each component 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. Each correct answer is worth one point.)

Components

Answer Area

| Skype for Business Phone Edition |
| Skype for Business |
| Skype for Business VDI plug-in |
| Windows 8 RDS client |

Thin clients:
- Component
- Component

VDI templates:
- Component

Answer:

Components

Answer Area

| Skype for Business Phone Edition |

Thin clients:
- Windows 8 RDS client
- Skype for Business VDI plug-in

VDI templates:
- Skype for Business

Explanation:
https://itbasedtelco.wordpress.com/2013/06/17/lync-deployment-using-virtual-desktops-vdi/
https://technet.microsoft.com/en-us/library/jj205304(v=ocs.15).aspx

QUESTION 52
You have a Skype for Business Server 2015 infrastructure. You configure the Skype for Business Server to require that each user has a location. You configure a location for each subnet. Users report that when they sign in, they are prompted for their location information. You need to prevent the users from being prompted for their location information when they sign in to Skype for Business on the internal network. Which Skype for Business Management Shell cmdlet should you run?

A. Publish-CsLISConfiguration
B. Publish-CsTopology
C. Set-CsNetworkSubnet
D. Export-CsLISconfiguration

Answer: A
Explanation:
https://technet.microsoft.com/en-us/library/gg398364.aspx

QUESTION 53
You have a Skype for Business Server 2015 infrastructure. The infrastructure contains one central site. The infrastructure contains a Standard Edition server that has the Mediation Server role installed and is located in the central site. You configure a trunk to an IP-PBX. The IP-PBX is qualified for integration with Skype for Business. You have 300 users who are enabled for Enterprise Voice. You need to provide public switched telephone network (PSTN) services to the Enterprise Voice users if the IPPBX fails. Which two actions will achieve the goal? (Each answer presents a complete solution. Choose two.)

A. Install a Survivable Branch appliance that connects directly to the PSTN.
Configure a new trunk and add the trunk to the existing route.
Add the route to the PSTN usage and add the PSTN usage to the voice policy.
B. Install an additional IP-PBX that connects directly to the PSTN.
Configure the existing trunk to use both IP-PBXs in resiliency mode.
C. Install a PSTN gateway that connects directly to the PSTN.
Configure a new trunk to the new PSTNgateway.
Create a new route and a new PSTN usage.
Add the route to the PSTN usage and add the PSTN usage to the voice policy.
D. Install a new trunk to a certified SIP trunk provider.
Add the trunk to the existing PSTN usage.
Add the PSTN usage to the voice policy.

Answer: CD
Explanation:
https://technet.microsoft.com/en-us/library/jj721915.aspx
http://www.gecko-studio.co.uk/sip-trunk-lync-sir/

QUESTION 54
You have a Skype for Business Server 2015 infrastructure that has Enterprise Voice enabled. When a caller dials an unassigned number, the caller hears a custom message, and then the caller is forwarded to a user named User1. Several months later, User1 leaves the company. You need to ensure that when a caller dials an unassigned number, the caller hears the custom message and is forwarded to a user named User2. Which Skype for Business Management Shell cmdlet should you run?

A. Set-CsVoiceRoute
B. Set-CsAnnouncement
C. Set-CsUnassignedNumber
D. Set-CsUser

Answer: B
Explanation:
https://technet.microsoft.com/en-us/library/gg425752.aspx

QUESTION 55
You support a customer's Skype for Business Server 2015 environment. Your customer has granted User1 Conferencing Policy A, and User 2 Conferencing Policy B. When User2 joins a video conference that is hosted by User1, User2 sees only a single video window. Other users who are joined to the same conference see up to five concurrent video streams. You need to configure the environment to allow User2 to view multiple concurrent video streams. You need to achieve the goal with the fewest changes to the environment. Which Skype for Business Management Shell command should you run?

A. `Set-CSClientPolicy -EnableFullScreenVideo $True`
B. `Get-CSConferencingPolicy -Identity `Conferencing Policy B' | Set-CSConferencingPolicy -EnableMultiViewJoin $True`
C. `Set-CSClientPolicy -EnableMediaRedirection $True`
D. `Get-CSConferencingPolicy -Identity `Conferencing Policy B' | Set-CSConferencingPolicy -AllowMultiView $True`

Answer: B

Explanation:
https://technet.microsoft.com/en-us/library/gg425788.aspx

QUESTION 56
Hotspot Question
A company has two offices. The offices are located in New York and Amsterdam. The dialing habits of the users in each office are shown in the following table.

Office	Phone number range	Dialing habit
New York	+1 212 555 1000 - 3000	- Local public switched telephone network (PSTN): 10-digit phone number - Long distance calls within North America: 1 + 10-digit phone number - International calls outside of North America: 011 + phone number
Amsterdam	+31 20 1234 500 - 510	- Local PSTN: 7-digital phone number - Long distance calls within the Netherlands: 0 + 9-digit phone number - International: 00 + phone number

You need to create a dial plan for the users in the New York office. Which match patterns should you use in the normalization rules? (To answer, select the appropriate normalization rule from each list in the answer area.)

Answer Area

Local PSTN:
- ^(\d{7})$
- ^(\d{10})$
- ^+1(\d{10})$
- ^(10\d{10})$
- ^7(\d{212})$

Long Distance within North America:
- ^(4\d{7})$
- ^+1(3\d{7})$
- ^1(\d{10})$
- ^1(\d{11})$
- ^011(\d{6}\d+)$

International outside North America:
- ^(00\d{7})$
- ^+0(\d{11})$
- ^(*\d{011})$
- ^(011\d{*})$
- ^011(\d{6}\d+)$

Answer:

Answer Area

Local PSTN:

▼
^(\d{7})$
^(\d{10})$
^+1(\d{10})$
^(10\d{10})$
^7(\d{212})$

Long Distance within North America:

▼
^(4\d{7})$
^+1(3\d{7})$
^1(\d{10})$
^1(\d{11})$
^011(\d{6}\d+)$

International outside North America:

▼
^(00\d{7})$
^+0(\d{11})$
^(*\d{011})$
^(011\d{*})$
^011(\d{6}\d+)$

QUESTION 57
Tailspin Toys deploys Skype for Business Enterprise Voice. Tailspin Toys executives must be able to call each other directly at any time irrespective of their presence status. You need to configure the Enterprise Voice solution. What should you do?

A. Set the value of the privacy relationship setting for each executive team contact to the value Workgroup.
B. Set the value of the simultaneous ring setting for all executives to Ring my delegates after 10 seconds.
C. Set the value of the simultaneous ring setting for all executives to Ring my team call group.
   Add all of the members of the leadership team to the team call group.
D. Create a private telephone line for each executive and implement Call Via Work.

Answer: A
Explanation:
http://blogs.technet.com/b/seanearp/archive/2011/09/06/leave-me-alone-using-lync-to-not-communicate.aspx

QUESTION 58
Drag and Drop Question
A company implements Enterprise Voice. All users are assigned a direct inward dialing (DID) phone number. Due to the increased fees for direct inward dialing (DID) phone ranges, the company must make the following changes:
`uk.co.certification.simulator.questionpool.PList@dba2cc0`
You need to implement a solution. Which four actions should you perform in sequence? (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

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

Answer:

Answer Area

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

Explanation:
https://technet.microsoft.com/en-us/library/gg412783.aspx
https://technet.microsoft.com/en-us/library/gg412748(v=ocs.15).aspx

QUESTION 59
Your company has a Skype for Business Server 2015 infrastructure that contains two topology sites named London and Seattle. Each site contains an Enterprise Edition Front End pool and an Edge Server. The external DNS records are configured as shown in the following table.

DNS record name	Record type	Destination
sip.contoso.com	Host (A)	Edge Server in the Seattle site
sip2.contoso.com	Host (A)	Edge Server in the London site
rp.contoso.com	Host (A)	Reverse proxy in the Seattle site
rp2.contoso.com	Host (A)	Reverse proxy in the London site
_sip._tls.contoso.com	Service location (SRV)	sip.contoso.com

All users use the Skype for Business client. Some of the users use the Skype for Business client from their personal computer. You need to ensure that the users in the London site use the Edge Server in the London site for authentication and the users in the Seattle site use the Edge Server in the Seattle site for authentication. The solution must minimize administrative effort. What should you do?

A. Create an SRV record named _sipexternal._tls.contoso.com that points to sip2.contoso.com.
B. Create an SRV record named _sip._tls.contoso.com that points to sip2.contoso.com.
C. Create an A record for discover.contoso.com that points to the reverse proxy in the Seattle site.

D. Configure a Group Policy object (GPO) for the London site that configures the Skype for Business client touse an external server name of sip2.contoso.com.

Answer: B
Explanation:
https://technet.microsoft.com/en-us/library/gg398758(v=ocs.15).aspx

QUESTION 60
A company plans to implement Skype for Business Server 2015. Before they start deploying the solution, they want to ensure that the network can handle the media traffic that the solution produces. You must perform a network traffic simulation on their network. You need to ensure that the correct network metrics are collected during the network traffic simulation. Which three network metrics should you collect? (Each answer presents part of the solution. Choose three.)

A. packet loss
B. one-way network delay
C. average jitter
D. forward error correction overhead
E. number of media streams

Answer: ABC

QUESTION 61
A company has an Office 365 tenant and uses Exchange Online and Skype for Business Online. User1 is scheduling a Skype meeting with User2. User 1 is not able to see availability information for User2. You need to troubleshoot the issue. What should you use?

A. Microsoft Lync Connectivity Analyzer Tool
B. OCSLogger
C. ClsController
D. Remote Connectivity Analyzer

Answer: C

QUESTION 62
You have a Skype for Business Server 2015 infrastructure. You configure the Skype for Business Server to require that each user has a location. You configure a location for each subnet. Users report that when they sign in, they are prompted for their location information. You need to prevent the users from being prompted for their location information when they sign in to Skype for Business on the internal network. Which Skype for Business Management Shell cmdlet should you run?

A. Publish-CsLISConfiguration
B. Publish-CsTopology
C. Set-CsNetworkSubnet
D. Export-CsLISconfiguration

Answer: A
Explanation:
https://technet.microsoft.com/en-us/library/gg398364.aspx

QUESTION 63
You perform a network readiness assessment for a Skype for Business deployment. The

organization's network includes a head office and 400 branch offices. All branch offices are connected to the head office with a Multiprotocol Label Switching (MPLS) link. You have completed the traffic simulation. The Usage Modeling Data for the Beijing site is shown in the following table.

Metric	Value
Total users	500
Wide area network (WAN) link speed megabits per second (Mbps)	20
Peak users signed in	320
Total WAN BW	3,728.4
Total WAN BW no video	2,848.4
% of WAN link	18.21%
% of WAN link no video	13.91%
% of WAN BW for RTC traffic	182.05%
% of WAN BW for RTC traffic no video	139.08%

A summary of the simulation results is shown in the table below.

Metric	Value
Traffic Simulated	Beijing: 18 calls
Average MOS	4.36
Average Delay	39.57 ms
Average Jitter	0.31 ms
Maximum Jitter	30 ms
Average Packet Loss	0%
Maximum Consecutive Datagram Loss	1
General Comments	Overall the network performed extremely well, with optimal scores throughout.

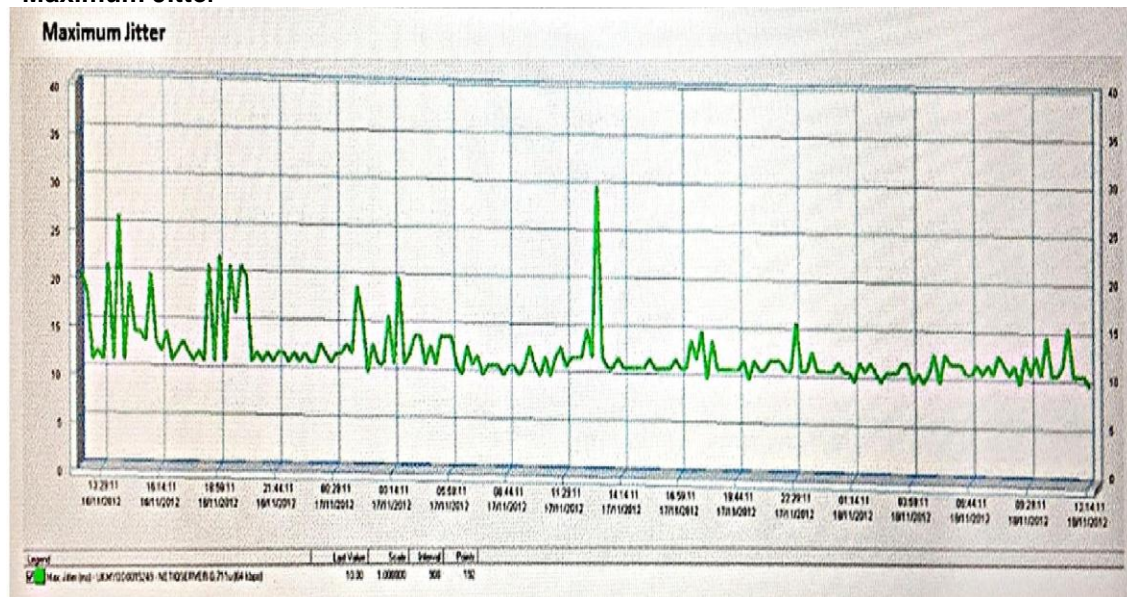Detailed simulation results are shown in the following exhibits.
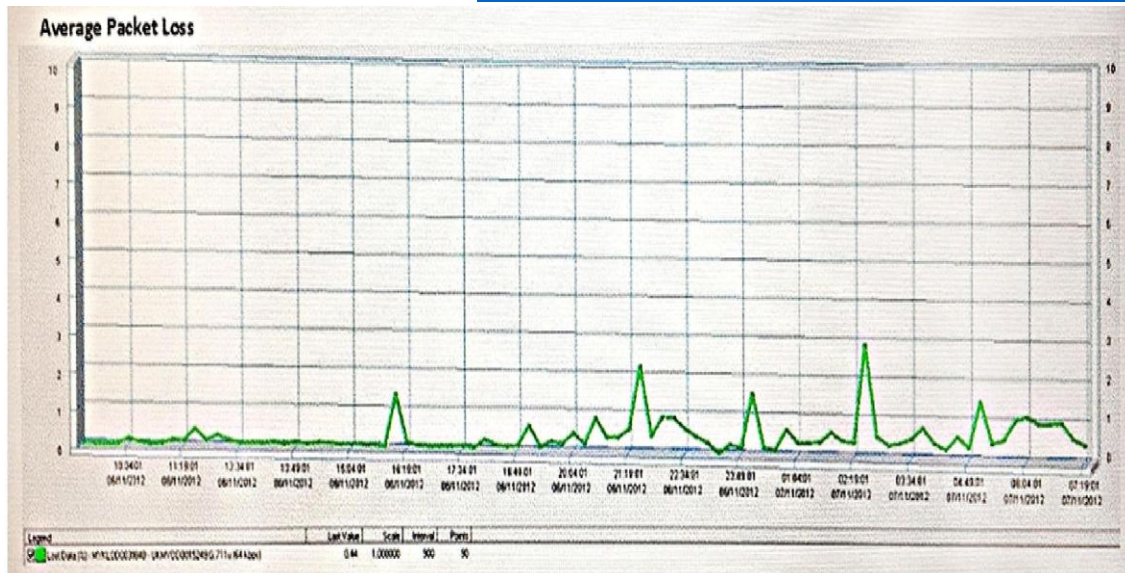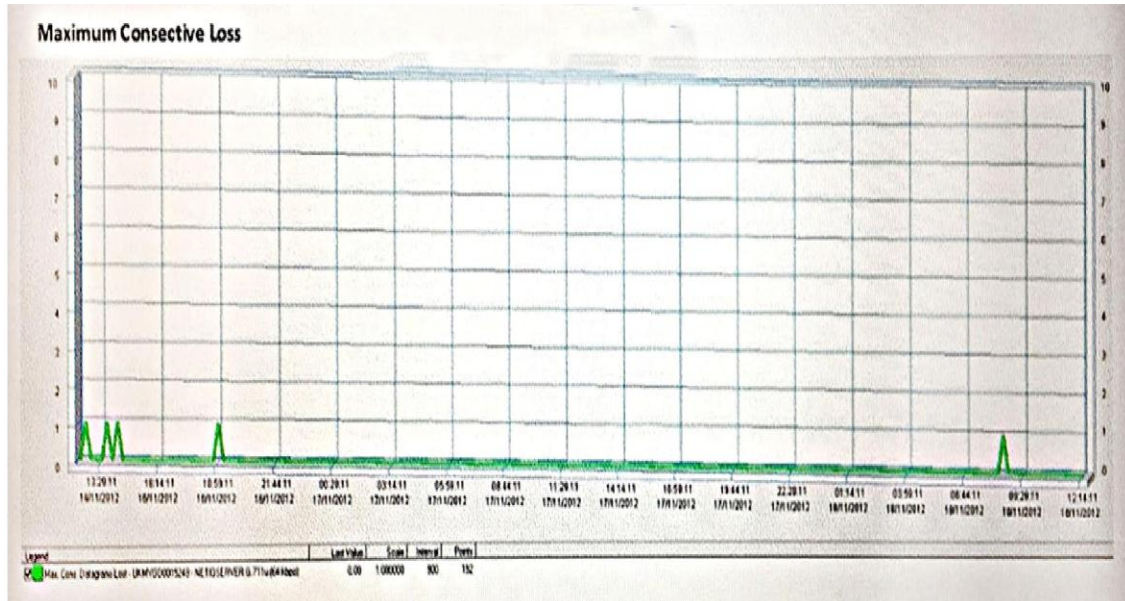**- One Way Network Delay**
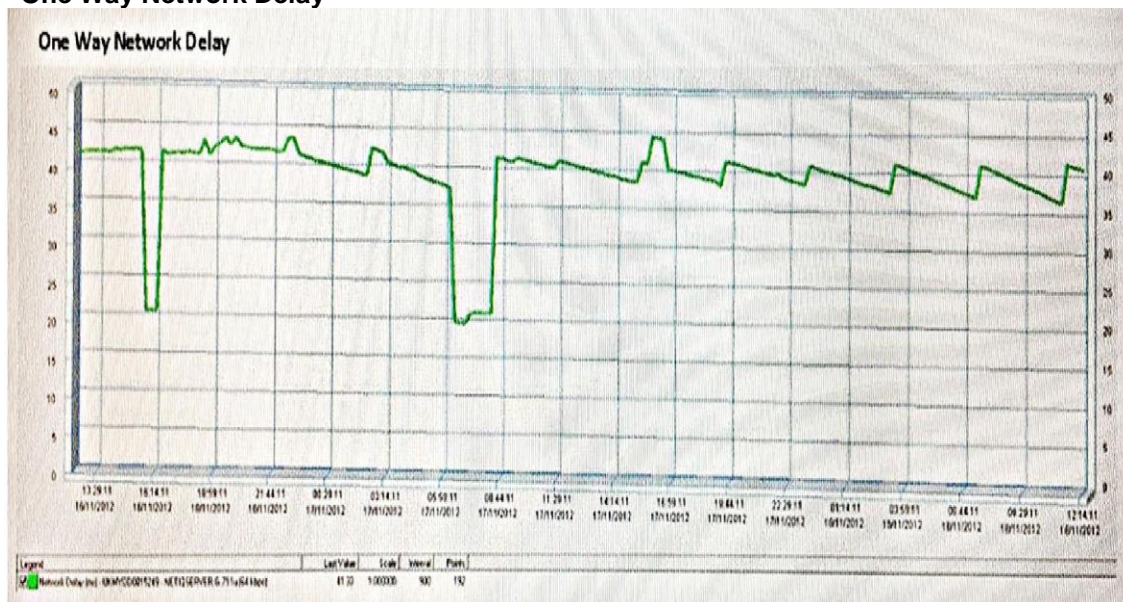
- Average Jitter

Average Jitter
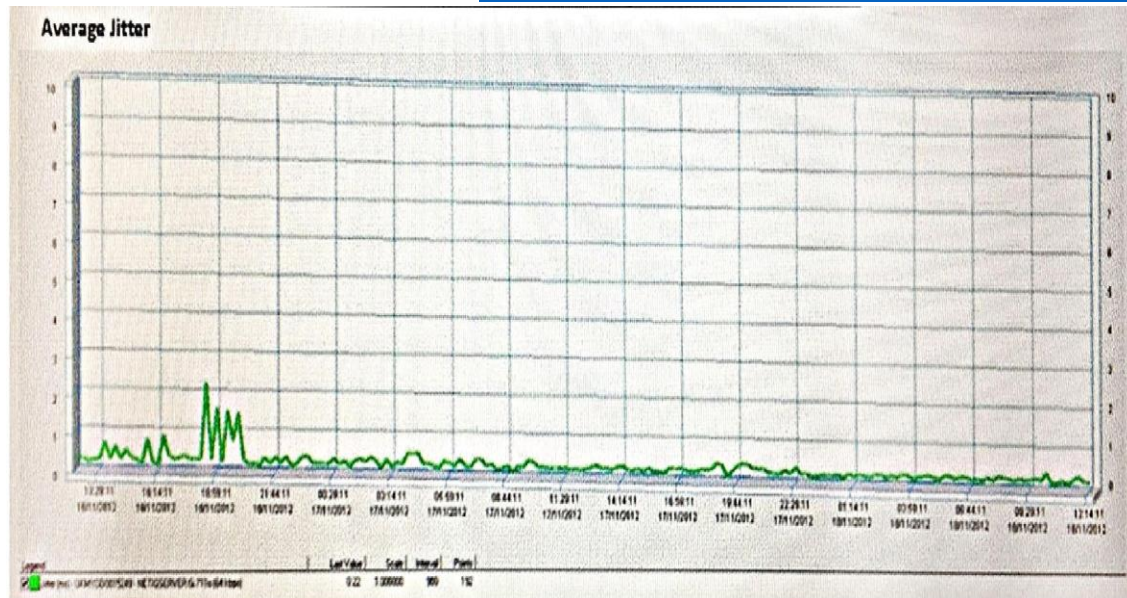
- Maximum Jitter

Maximum Jitter

- Average Packet Loss

Average Packet Loss

- Maximum Consecutive Loss

Maximum Consective Loss

You need to provide recommendations based on the simulation results. What should you recommend?

A. Increase WAN link bandwidth.
B. Monitor Quality of Experience (QoE).
C. Implement Call Admission Control (CAC) on Skype for Business for the affected sites.
D. Restrict video capability or reduce quality codec usage for certain user groups.

Answer: A

QUESTION 64
Drag and Drop Question
Your company has three offices. The network is configured as shown in the exhibit.
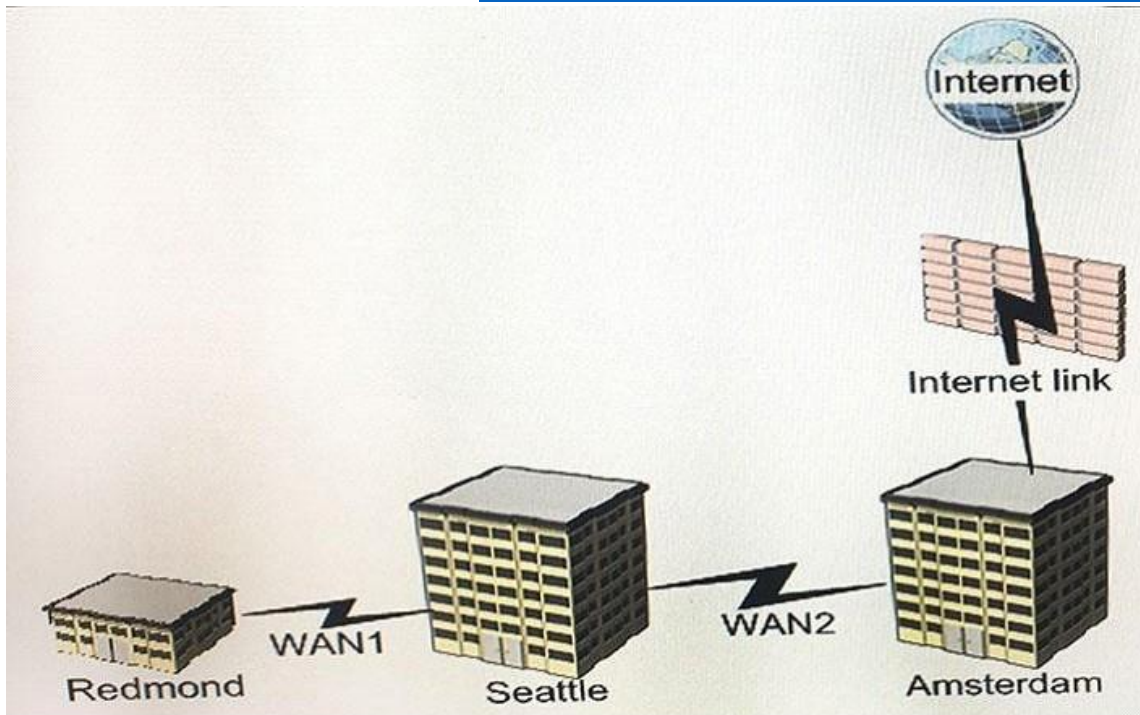
You have a Skype for Business Server 2015 infrastructure. All of the Skype for Business Server components are located in the Amsterdam office. The conference call will contain the attendees shown in the following table.

Attendee location	Number of attendees
Seattle	50
Redmond	10
Amsterdam	100
Internet (Remote)	20

Each audio call consumes 100 kilobits per second (Kbps). You need to allocate network bandwidth for each attendee location. How much bandwidth should you allocate for each attendee location? (To answer, drag the appropriate bandwidth amounts to the correct attendee locations in the answer area. Each bandwidth amount 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.)

Bandwidths

- 1,000 Kbps
- 2,000 Kbps
- 5,000 Kbps
- 6,000 Kbps
- 10,000 Kbps
- 15,000 Kbps

Answer Area

- WAN1: Bandwidth
- WAN2: Bandwidth
- Internet link: Bandwidth

Answer:

Bandwidths

-
-
- 5,000 Kbps
-
- 10,000 Kbps
- 15,000 Kbps

Answer Area

- WAN1: 1,000 Kbps
- WAN2: 6,000 Kbps
- Internet link: 2,000 Kbps

QUESTION 65
Hotspot Question
Parnell Aerospace has a Skype for Business Server 2015 environment. The company plans to implement response groups for their internal Help Desk and Accounting teams. The two teams have the following requirements for their individual response groups.

Help Desk Response Group
- Agents must sign in to the response group before they can accept calls.
- Must offer new calls to the agents in the order in which they are listed in the Agent list.
- Need to share queues with other Response Groups.

Accounting Response Group
- Agents must not need to sign in to the response group before they can accept calls.
- Must offer new calls to each agent in turn.

- Must be managed by a dedicated Response Group Manager.

You need to configure the response groups for the Help Desk and Accounting teams. How should you configure the response groups? (To answer, select the appropriate configuration option from each list in the answer area.)

Answer Area

Response group configuration options	Help Desk response group	Accounting response group
Participation Policy	Formal	Informal
Routing Method	Longest Idle / Parallel / Round Robin / Serial ▼	Longest Idle / Parallel / Round Robin / Serial ▼
Workflow Type	Managed / Unmanaged ▼	Managed / Unmanaged ▼

Answer:

Answer Area

Response group configuration options	Help Desk response group	Accounting response group
Participation Policy	Formal	Informal
Routing Method	Longest Idle / Parallel / Round Robin / **Serial** ▼	Longest Idle / Parallel / **Round Robin** / Serial ▼
Workflow Type	Managed / **Unmanaged** ▼	**Managed** / Unmanaged ▼

QUESTION 66
Hotspot Question
You have a Skype for Business Server 2015 infrastructure. The infrastructure contains three servers. The servers are configured as shown in the following table.

Server name	Role
Server1	Standard Edition server
Server2	Mediation Server
Owa01	Office Web Apps Server

You plan to provide users with the ability to use desktop sharing and to display Microsoft PowerPoint presentations during conference. You need to create the firewall rules. How should you configure the firewall rules? (To answer, select the appropriate servers and ports for each feature in the answer area.)

Answer Area

Feature	Server	Ports
Desktop Sharing	▼ Server1 / Server2 / Owa1	▼ 443 / 5061 / 5350 to 5389 / 49,152 to 65,535
Display PowerPoint presentations	▼ Server1 / Server2 / Owa1	▼ 443 / 5061 / 5350 to 5389 / 49,152 to 65,535

Answer:

Answer Area

Feature	Server	Ports
Desktop Sharing	▼ **Server1** / Server2 / Owa1	▼ 443 / 5061 / 5350 to 5389 / **49,152 to 65,535**
Display PowerPoint presentations	▼ Server1 / Server2 / **Owa1**	▼ **443** / 5061 / 5350 to 5389 / 49,152 to 65,535

QUESTION 67
You have a Skype for Business Server 2015 Infrastructure. The infrastructure contains two sites and is configured for Enterprise Voice. The sites are located in Chicago and Toronto. Each site has a distinct voice policy, public switched telephone network (PSTN) usage, voice route, and trunk transaction rule as shown in the following table.

Site name	Dial plan name	Voice policy name	PSTN usage name	Voice route name	Trunk name
Toronto	Toronto-DP	Toronto-VP	Toronto-Usage	Toronto-AllCalls	Toronto-PSTN
Chicago	Chicago-DP	Chicago-VP	Chicago-Usage	Chicago-AllCalls	Chicago-PSTN

You need to ensure that all outbound voice calls to the PSTN from the users in the Toronto site are routed through the trunk at the Toronto site. Calls must use the Mediation Server at the Chicago site if the Mediation Server at the Toronto site is unavailable. What should you do?

A. Add the Chicago-PSTN trunk to the Toronto-AllCalls voice route.
B. Add the Chicago-AllCalls voice route to the Toronto-Usage PSTN usage record.
C. Add the Chicago-Usage PSTN usage record to the Toronto-PSTN trunk.
D. Add the Chicago-Usage PSTN usage record to the Toronto-VP voice policy.

Answer: A

QUESTION 68
Your company has a Skype for Business Server 2015 infrastructure that contains two topology sites named London and Seattle. Each site contains an Enterprise Edition Front End pool and an Edge Server. The external DNS records are configured as shown in the following table.

DNS record name	Record Type	Destination
sip.contoso.com	Host (A)	Edge Server in the Seattle site
sip2.contoso.com	Host (A)	Edge Server in the London site
rp.contoso.com	Host (A)	Reverse proxy in the Seattle site
rp2.contoso.com	Host (A)	Reserve proxy in the London site
_sip._tls.contoso.com	Service location (SRV)	sip.contoso.com

All users use the Skype for Business client. Some of the users use the Skype for Business client from non- domain joined computers. You need to ensure that the users in the London site use the Edge Server in the London for authentication and the users in the Seattle site use the Edge Server in the Seattle site for authentication. The solution must minimize administrative effort. What should you do?

A. Create an A record for lyncdiscover.contoso.com that points to the server proxy in the Seattle site.
B. Create an SRV record named _sipexternal._tls.contoso.com that points sip2.contoso.com.
C. Create an SRV record named _sip._tls.contoso.com that points sip2.contoso.com.
D. Configure a Group Policy object (GPO) for the London site that configures the Skype for Business client to use an external server name of sip2.contoso.com.

Answer: C

QUESTION 69
Drag and Drop Question
You have a Skype for Business Server 2015 infrastructure that contains two offices. The offices are located in Amsterdam and Seattle. The offices have the phone numbers ranges shown in the following table.

Office	Total phone number range
Amsterdam	+31 20 1234 5 00 to +31 20 1234 5 99
Amsterdam	+31 20 1234 7 00 to +31 20 1234 7 99
Seattle	+1 425 555 1200 to +1 425 555 1299

You plan to deploy Enterprise Voice. You also plan to use a global dial plan that will use three-digit dialing. You need to create the normalization rules for the planned deployment. Which match patterns should you use? (To answer, drag the appropriate match patterns to the correct translation patterns on the answer area. Each match pattern may be used once, more than once, or not at all. Additionally, you may need to drag the split bar or scroll to view content.)

Match Patternns

^(5\d{2})$

^([57]\d{2})$

^([57])(\d{2})$

^(2\d{2})$

^12(\d{2})$

^1(2\d{2})$

Answer Area

Translation pattern	Match pattern
+31201234$1	Match pattern
+14255551$1	Match pattern

Answer:

Match Patternns

^(5\d{2})$

^([57])(\d{2})$

^12(\d{2})$

^1(2\d{2})$

Answer Area

Translation pattern	Match pattern
+31201234$1	^([57]\d{2})$
+14255551$1	^(2\d{2})$

QUESTION 70

Your network contains the servers shown in the following table.

Server name	Software	Role
Server1	Skype for Business Server 2015	Standard Edition server
Server2	Skype for Business Server 2015	Edge Server
Server3	Microsoft Exchange Server 2013	Mailbox server Client Access server

You configure the infrastructure to use hosted Exchange Unified Messaging (UM). You need to create a new contact object for the hosted UM auto attendant. What should you do?

A. From Server1, run ocsumutil.exe.

B. From Server1, run the New-CsExUmContact Skype for Business Management Shell cmdlet.
C. From Server3, run the New-MailContact Exchange Management Shell cmdlet.
D. From Server3, run the exhucutil.ps1 script.

Answer: D

QUESTION 71
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