



Exam : **Nortel 920-804**

Title : Nortel technology standards and protocols for converged networks

Update : Demo

1. A customer wants to implement VoIP network in their LAN/WAN environment. Following the network assessment, you have to make the appropriate recommendations to address network issues that can cause problems for real-time VoIP traffic. Based on the following, what should be your first recommendation?

- A. Use media shared hubs for LAN connection.
- B. Change the CODEC selection for LAN devices only.
- C. Put call servers, signaling servers and media gateways on one VLAN.
- D. Configure all interfaces to eliminate duplex mismatch and set to auto negotiate.

Answer: D

2. You are using Net IQ Chariot on a customer's LAN to complete QoS testing with pre-defined data flow emulation templates. You want to check that the current DiffServ settings will achieve the desired results. Which parameters will provide you with the required information? (Choose two.)

- A. transaction rate
- B. network throughput
- C. precedence settings
- D. resource reservation

Answer: AB

3. After assessing a customer's network in preparation for a multi-site LAN/WAN VoIP deployment, you have determined the following: ?Average 5% dropped packets in end to end tests ?Intermittent voice muting ?Unacceptable delay The customer wishes to upgrade their network and correct these deficiencies. Suggest one solution that will give the most noticeable improvement and prepare the network for future growth with the least complexity.

- A. Implement an all optical network.
- B. Reduce frame size for all packets.
- C. Increase LAN/WAN bandwidth by 30%.
- D. Implement QoS technique like DiffServ.

Answer: C

4. Given the following network assessment information: ?At all times of the day there is sufficient bandwidth between all test points sitting on the LAN drops as well as the remote offices across the WAN circuits where Internet Telephones will be placed. ?All the call servers, media gateways and signaling servers are on the same VLAN along with the data network traffic. ?All of the servers are duplicated on the network to ensure five nines (99.999%) of reliability and call handling. ?There is only one physical/logical path to each LAN drop and remote office. ?The architecture of the network is in a physical star topology with all VoIP processing servers at the center of the star, including the duplicate servers. ?Each of the remote sites were built from the ground up for VoIP and data traffic with NO regard for any call processing locally. All calls must go back to the campus network. Which three recommendations should you make to the customer concerning their network to enable it to support VoIP traffic? (Choose three.)

- A. Add data path redundancy to give the network survivability.
- B. Ensure that a backup generator sustains the power of all the network equipment.
- C. Recommend a re-evaluation to obtain network delay and jitter information to ensure that these properties are within the appropriate bounds.
- D. Segment the call server, media gateway, and signaling server to appropriate VLANs to ensure signaling traffic is NOT impacted by standard IP data.

Answer: ACD

5. Which statement about the requirements of VoIP network assessments is true?

- A. Physical diagrams define the network operating systems that will be tested.
- B. Calling patterns define the current peak-period usages of the data networks that will be tested.
- C. Physical diagrams define the network-interface speeds, modes, and protocols that will be tested.
- D. Calling patterns help determine the potential dates for shutting down the network to perform the testing.

Answer: C

6. A company wants its network to be configured and if necessary upgraded to enable it to handle the

addition of VoIP traffic along with other IP data. During the network assessment you identify: ?The core of the network is a high-speed data center where there is ample bandwidth to support the addition of VoIP traffic. ?The remote offices that the data center services are all connected via Frame Relay (FR). After setting up several NetIQ Chariot VoIP endpoints at remote - office locations, you identify the following issues: ?Excessive delays during peak hours, as much as 200 milliseconds on round trips. ?There are dropped packets even at low usage rates. ?The jitter across the FR links is excessive when it is greater than 30 milliseconds. Which two changes should occur before the customer's network is declared VoIP - ready? (Choose two.)

- A. Upgrade the data center to Layer 3 switching.
- B. Modify the 802.1p values on the VLANs to reduce the dropped packets to the remote sites.
- C. Increase the Committed Information Rate (CIR) to guarantee that enough bandwidth is available to the remote sites.
- D. Implement traffic prioritization for shaping and policing on the routers (data center and remote offices) to ensure that VoIP traffic is prioritized over non-time-sensitive traffic.

Answer: CD

7. A customer is planning a new VoIP network based on their existing PBX and corporate network. They need historical information about calling patterns in order to plan for VoIP traffic. What is the best source of this type historical information?

- A. Operational Measurements from switch
- B. Error messages from all networking devices
- C. Alarm indications from all networking devices
- D. Log reports from switch and all networking devices

Answer: A

8. Given the following network information: ?A company with a mixed VoIP and data network is experiencing bad voice quality with VoIP calls during normal business hours. ?Tests within their LAN segments warn of excessive jitter, delay, and in some cases packet retransmissions. ?There is a pair of switches that all traffic converges upon. The link between the two switches is a 100/Full Fast Ethernet

connection that is operating at near maximum capacity for the majority of the day. At any given time, the estimated traffic on the link between the two switches is 200 Mbps. Which two configuration changes will improve the voice quality of the VoIP calls and prevent possible VoIP issues in the future between these two switches? (Choose two.)

- A. Place a router between the two switches and configure the 100 Mbps links to the two switches with a higher QoS for VoIP traffic.
- B. Prioritize the traffic on the switches to give VoIP improved QoS. Prioritize only the traffic on the switches to give VoIP calls improved QoS.
- C. Provide a larger aggregated bandwidth of 300 Mbps by trunking three interfaces together on the two switches using Multilink Trunks (MLTs).
- D. Purchase two new Layer 2 switches that are capable of gigabit Ethernet to replace the Fast Ethernet connection with a single gigabit Ethernet connection.

Answer: BC

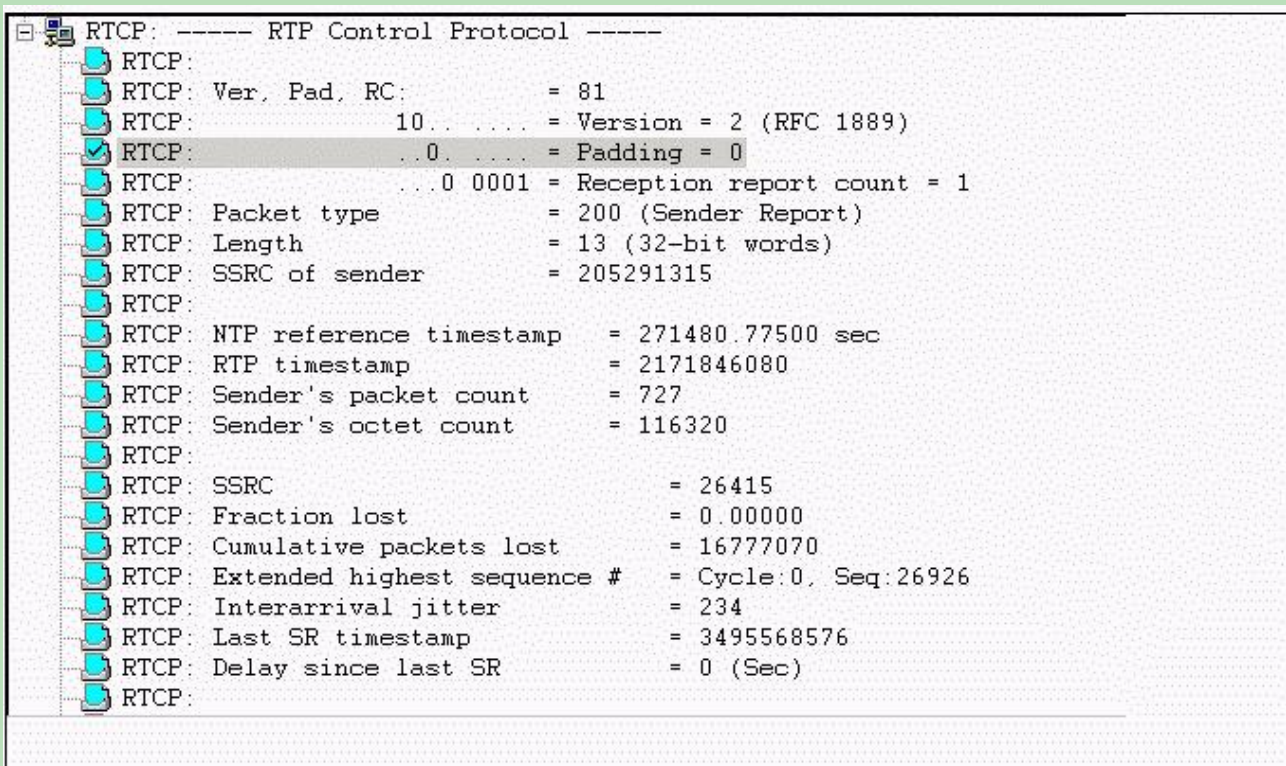
9. A company requests that their VoIP network be assessed to determine if some changes can be made to alleviate bandwidth limitations. Given the following network information: The CODEC is G.711. Voice Activity Detection (VAD) is NOT being used. The company wants to keep the bandwidth usage on its Frame Relay (T1/E1 and T3/E3) circuits less than 50% of the overall bandwidth. The company will allow the quality of the intelligible voice to degrade slightly in favor of a significant increase in total number of calls possible on their circuits. They will NOT accept additional packetization delay since their network is already at the maximum limit of acceptable delay (maximum delay budget) between the Internet Telephones and the call server. Which configuration change will increase the number of VoIP calls possible on the company's Frame Relay circuits?

- A. Increase the packetization rate from 20 milliseconds to 30 milliseconds and decrease the jitter buffer.
- B. Increase the packetization rate from 20 milliseconds to 30 milliseconds to gain approximately 20% more calls.
- C. Change the CODEC to G.729 with the same packetization factor of 20 milliseconds to more than double the possible calls on the Frame Relay circuits.
- D. There is NO way to increase the number of calls possible within the bandwidth restrictions unless they

are willing to re-engineer their network with a larger-bandwidth circuits.

Answer: C

10. Click the exhibit button. An organization with a newly deployed VoIP network is complaining of poor VoIP call quality. Given the following issues that have been reported by the company management: ?VoIP call quality on the first four Internet Telephones is good during non-peak hours of business. ?VoIP call quality degrades during the day around 10:00 a.m. and 2:00 p.m. ?VoIP call quality degrades in the evening hours when more than six Internet Telephones are making calls at the same time. The organization has sent you a protocol decode of a Real Time Protocol Control Protocol (RTCP) packet (see the exhibit). It shows some information about the quality of the VoIP calls during the peak hours. Which two conclusions should you reach from analyzing this datagram? (Choose two.)



```
RTCP: ----- RTP Control Protocol -----
RTCP: Ver, Pad, RC:          = 81
RTCP: 10...          = Version = 2 (RFC 1889)
RTCP: ..0. .... = Padding = 0
RTCP: ...0 0001 = Reception report count = 1
RTCP: Packet type          = 200 (Sender Report)
RTCP: Length               = 13 (32-bit words)
RTCP: SSRC of sender       = 205291315
RTCP:
RTCP: NTP reference timestamp = 271480.77500 sec
RTCP: RTP timestamp        = 2171846080
RTCP: Sender's packet count = 727
RTCP: Sender's octet count  = 116320
RTCP:
RTCP: SSRC                 = 26415
RTCP: Fraction lost        = 0.00000
RTCP: Cumulative packets lost = 16777070
RTCP: Extended highest sequence # = Cycle:0, Seq:26926
RTCP: Interarrival jitter  = 234
RTCP: Last SR timestamp    = 3495568576
RTCP: Delay since last SR  = 0 (Sec)
RTCP:
```

- A. This capture is inconclusive and a long-term detailed capture is required.
- B. The indication of dropped packets is NOT an issue because the fraction-lost value is zero.
- C. Cumulative packets-lost value indicates that the network is dropping VoIP data resulting in lost audio information.
- D. The interarrival-jitter value indicates network issues and the likelihood of delayed audio between

Internet Telephones.

E. The interarrival-jitter value is within typical VoIP functional ranges and does NOT impact Internet Telephone performance.

Answer: CD

11. You are conducting a VoIP network assessment of a data network with existing traffic issues. Which information is required to prevent these issues from interfering with the network assessment?

A. Location of all network users Login names and passwords of each network user

B. Location of all network users Network users' calling patterns for both local and long distance services

C. Location of all network users Network users' traffic patterns for voice and data Location of the issues within the network

D. Types and locations of the network servers Applications and data usages on each server Location of the issues within the server farms

Answer: C

12. During a network assesment, you want to look at historical data (traffic patterns, utilizations, peak bandwidth loads, etc.) of a customer network. Which of the following applications/tools could potentially be used?

A. D-Logs

B. NetIQ Voip Assessor

C. Operational measurements

D. Network Management System

Answer: D

13. A company wants to deploy VoIP and you need to determine the best strategy for migrating the company's existing network to VoIP. The company wants to utilize as much of its existing infrastructure and equipment as possible. Which information should you collect prior to beginning the VoIP network assessment?

A. types and number of routers, WAN/LAN protocols, and building access codes

B. type of PBX, VLAN equipment, Remote Access Service (RAS) usage, and offsite backup storage methodology

C. type of Private Branch Exchange (PBX), LAN/WAN equipment, and LAN/telephony applications currently deployed

D. type of PBX, location of the server room and wiring closets, and the last three systems integrators used for service

Answer: C

14. While assessing QoS on a VoIP network, you are asked to test IP TOS bit settings. Which parameters should you measure?

A. TOS settings (low, medium and high)

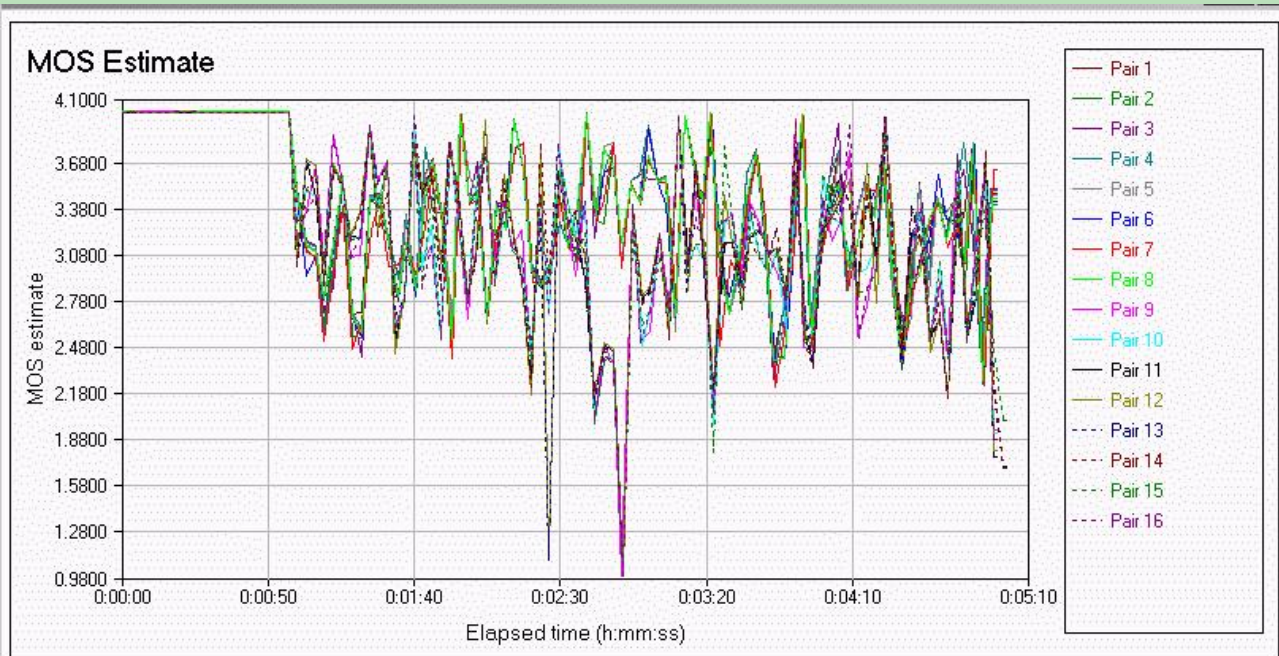
B. DSCP (binary) and DSCP (decimal) settings

C. 3-bit precedence field on 2nd byte of the IP packet header

D. 3-bit precedence field and 3-bit TOS (D/T/R) field of 2nd byte on the IP packet header

Answer: D

15. Click the exhibit button. A company has recently added VoIP traffic to its high-speed switched Ethernet network and is complaining of poor VoIP call quality. The company has requested a VoIP network assessment to determine the cause of the poor voice quality. A test of the VoIP call quality is conducted during normal business hours using the NetIQ tool suite (Chariot, VoIP Assessor, and Qcheck) to obtain the Mean Opinion Score (MOS) values for the VoIP calls (see the exhibit). The traffic loads and types that were on the network during the test are "typical" on a daily basis. Which general conclusion should you reach from analyzing the MOS value estimates of the VoIP calls?



- A. Only the first 50 seconds of the VoIP call-quality test was within the acceptable toll-quality range for MOS values.
- B. The MOS values for this VoIP call-quality test remained above the minimum industry standard value for 95% of the testing time.
- C. The MOS estimate graph is inconclusive by itself. The jitter and dropped packet values should be graphed and then reviewed before making any conclusions.
- D. Although the MOS values do spike down to low numbers briefly during the VoIP call test-window, it is likely that the call quality is still quite high for the majority of the VoIP end users.

Answer: A

16. A company has requested a VoIP network assessment of their existing network. Specifically, the company wants to assess the network's ability to handle additional G.711 - based (PCMu) VoIP - traffic loads. Given the following network information: ?The network is physically accessible from four different ports at desks in two of the company's ten business locations. ?The two test locations each have two points of access terminating on the same Layer 2 switch in the respective facilities. ?There are up to five Layer 2 switches in each location that are interconnected via a router, which also provides the WAN access between facilities. Given a VoIP network assessment toolkit that includes the NetIQ tool suite (Chariot, Qcheck, and VoIP Assessor), NetAlly, and Sniffer Pro, which level of network assessment can

be performed on their network?

- A. A complete network assessment can be performed between all of the ten business locations using any of the network assessment tools provided.
- B. Any of the network assessment tools provided can be used to perform a functional network assessment, but only within the context of the connectivity between the two accessible locations.
- C. A complete network assessment can be performed between the four ports in the two physically accessible locations using a single Sniffer Pro Protocol Analyzer and a single laptop running NetAlly.
- D. Any of the network-assessment tools provided can be used to perform a valid network assessment. However, it is only necessary to have access to one of the two accessible locations to conduct the tests since there are two physical ports available.

Answer: B

17. To reduce operational and management costs within the next five years, a company is interested in deploying VoIP into their existing network. The company supplied you with the following network information: ?Physical and logical diagrams of the network ?The communication and routing protocols in use ?A list of the non-production equipment available for use Which three actions are the next steps in the VoIP network assessment process? (Choose three.)

- A. Determine the types of links in use.
- B. Validate the logical network diagram.
- C. Validate the physical network diagram.
- D. Determine the traffic flows within the network.
- E. Assess the types of test to be run on the network and the tools needed to run the tests.

Answer: ADE

18. A customer wants to run a QoS test to show that the VoIP traffic will NOT be affected by an increase in normal traffic. Which testing area is best used for this type of test?

- A. DiffServ
- B. Generic QoS testing
- C. IPv4 TOS Bit Settings

D. IPv6 TOS bit Settings

Answer: A

19. Given the following network information: ?Reports are being received about intermittent call quality. End users are sometimes unable to complete calls and audio is missing from active calls. ?The company was unable to identify the network issues with its local test gear because the issues disappeared before the test gear was set up. ?The network consists of a star deployment with a main data center. ?The network end users are typically three router - hops from the data center where all of the application servers and VoIP call servers are located. Which network assessment tool should be used to identify the problem and possible solution?

- A. Use the VoIP Bandwidth Demand Calculator to quickly identify the specific location of the issues.
- B. Use the Multi Router Traffic Grapher (MRTG) on a laptop to monitor the routers closest to the end users to identify the VoIP call issues.
- C. Set up NetIQ VoIP Assessor on various points of the network. This will provide a call-capability analysis that will indicate problem areas on the network, when testing at low network-utilization times of the day.
- D. Deploy Sniffer Pro protocol analyzers and LAN/WAN sniffers at key points on the network. This will allow a very high-level overview of the network's capabilities, such as device bandwidth and Mean Opinion Score (MOS)/R-Values.
- E. Set up NetAlly on various points of the network after business hours to generate VoIP calls and to simulate standard user data at high bandwidth. This will identify the points on the network that may be interfering with the VoIP calls.

Answer: E

20. On a best effort VoIP network, a customer has a QoS issue of intermittent voice muting. What are some things that should be tested to determine the cause?

- A. Compatibility of network devices.
- B. Network delay, packet loss and jitter.
- C. VoIP traffic patterns and available bandwidth.
- D. Packet frame size, and fragmentation method.

Answer: B

21. While assessing a customer's network for VoIP feasibility, you begin by reviewing the information in the logical and topological network diagrams. Before you estimate VoIP traffic and implement network resource testing, which information should you obtain from these diagrams? (Choose three.)

- A. the physical paths that the logical data takes
- B. the protocols that are being used on the network
- C. the end-user station placement (physically/logically)
- D. the location of potential issues with network-interface speeds
- E. the location of potential issues with network resource duplexing

Answer: ABC

22. A customer wants to run a QoS test to measure Per Hop Behaviors (PHBs). Which methodology should you use to run this test?

- A. DiffServ
- B. generic QoS testing
- C. IPv4 TOS bit Settings
- D. IPv6 TOS bit Settings

Answer: A

23. A customer's network is using a Meridian Customer Defined Network (MCDN). The network consists of three nodes. By design, when node A calls node B and the call is re-routed to node C, a direct connection is established between node A and node C. Which protocol ensures that calls are handled this way?

- A. Automatic Trunk Utilization
- B. Trunk Anti-Tromboning (TAT)
- C. Trunk Route Optimization (TRO)
- D. Basic Automatic Route Selection (BARS)

Answer: C

24. Which protocol is NOT used in a Nortel Networks VoIP peer networking environment?

- A. Skinny Client Control Protocol (SCCP)
- B. Multi-cast Protocol
- C. Internet Group Management Protocol (IGMP)
- D. Distance Vector Multicast Routing Protocol (DVMRP)

Answer: A

25. A customer has implemented a VoIP network. They use an H.323 gatekeeper for IP Peer Networking. What will prevent the proper implementation of an H.323 gatekeeper?

- A. The gatekeeper is configured in Failsafe mode.
- B. The gatekeeper is configured as the Primary server.
- C. The gatekeeper is configured as an Alternate server.
- D. The gatekeeper is configured on a signaling server that was designated as a Follower.

Answer: D

26. If IP-based calls are placed between various IP-enabled Private Branch Exchange (PBX) systems configured for Vacant Number Routing (VNR) and registered to the same gatekeeper, which two statements are true? (Choose two.)

- A. The gatekeeper's database will typically contain the local steering codes associated with each VNR-enabled VoIP system and its corresponding H.323 gateway.
- B. VNR enables faster call setup because it helps to proactively exchange routing information between the H.323 gateways and the various routers on the network prior to the calls being setup.
- C. Each VoIP system enabled for VNR must have the distance steering codes associated with the dialing plans of the peer systems configured within its own specific call server or call processor.
- D. VNR-enabled systems can be networked to non-VNR systems enabling IP Peer networking via the same H.323 gatekeeper, as long as the distance steering codes with the non-VNR-enabled systems are properly configured to steer IP calls to the correct peer system.

Answer: AD

27. Given the following network information: ?An administrator of a small VoIP network is using H.323 as a messaging protocol. ?The network equipment supports H.323 version 2. ?Over time, the administrator observes latency on call-establishment between terminal devices. ?Over time, an end-user reports that that poor voice quality has increased. ?A sniffer is placed on the network to monitor traffic between terminals and gatekeepers at various sites. ?Sniffer results indicate that latency and voice quality issues are due to scaling issues with H.323 and its usage of messaging on call setup. What is the quickest and the most cost effective action the administrator can take to help ease these issues?

- A. Implement fast Start?H.323. Implement ?fast Start?H.323.
- B. Split up the terminals between LANs.
- C. Add additional VoIP gateways to the network.
- D. Migrate the network to Session Initiation Protocol (SIP).

Answer: A

28. A customer wants to enable IP Peer Networking between Internet Telephones in different zones. How is peer routing information exchanged between the gatekeepers in various zones?

- A. All layer 2 switches should have broadcasting enabled.
- B. The gatekeepers exchange peer routing information by using virtual trunks.
- C. The gatekeepers use an IP Multicast protocol like IGMP to exchange routing information.
- D. All Layer 3 switches should be configured with OSPF for exchanging routing information.

Answer: C

29. A customer has implemented a Meridian Customer Defined Network (MCDN) within their network environment. They encounter a situation where trunks associated with the same D-channel are being used in parallel and that is causing a redundant loop of two channels. Which MCDN networking feature releases the redundant channels in this situation?

- A. Network Call Transfer (NCT)
- B. Trunk Anti-Tromboning (TAT)
- C. Trunk Route Optimization (TRO)

D. Network Call Redirection Information (NCRI)

Answer: B

30. A customer wants to provide support for non-RAS endpoints into their VoIP networks. Which configuration should you perform on the H.323 gatekeeper?

- A. Configure the gatekeeper server as a Leader.
- B. Configure one active Gatekeeper for all network zones.
- C. Configure the gatekeepers in various zones with IP Multicast.
- D. Configure the gatekeepers as Primary, Alternate and Failsafe.

Answer: B



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