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70-227

Installing, Configuring and Administering
ISA Server 2000, Enterprise Edition

Q&A

DEMO Version

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QUESTION NO: 1

You are the network administrator for your company. You install ISA Server on three computers named ISA-Server1, ISA-server2, and ISA-server3. During installation, you join each server to the same array. You configure each server as shown in this table:

Host Name	Internal IP address	External IP Address	Load factor
ISA server1	10.10.100.100/24	131.107.200.1/24	100
ISA server2	10.10.100.101/24	131.107.200.2/24	100
ISA server3	10.10.100.102/24	131.107.200.3/24	100

Users now report that Internet access is very slow. Using network monitor, you discover that HTTP objects duplicated and cached on all three ISA server computers. You want to reduce traffic over your WAN connection.

What should you do?

- A. Resolve requests within the array before routing incoming web requests.
- B. Resolve requests within the array before routing outgoing web requests.
- C. Increase the load factor on all three computers to 1,000
- D. Increase the cache size on the three computers.

Answer: B

Explanation: Apparently the Cache Array Routing Protocol (CARP) is not used in this scenario since HTTP objects are duplicated and cached on all three ISA server computers. CARP would ensure that all ISA servers in the array use the same cache. We can enable CARP by selecting to resolve requests within the array before routing the request. We should enable CARP for outgoing web requests since only Internet access seems to be used in this scenario.

Note: ISA Server uses the Cache Array Routing Protocol (CARP) to provide seamless scaling and efficiency when using multiple ISA Server computers that are arrayed as a single logical cache.

Reference:

Technet, Configuring outgoing Web request properties

Technet, Configuring incoming Web request properties

ISA Server 2000 Administration Study Guide (Sybex), page 289-290, Cache Array Routing Protocol (CARP)

ISA Server 2000 Administration Study Guide (Sybex), page 280, Network Load Balancing

Incorrect Answers

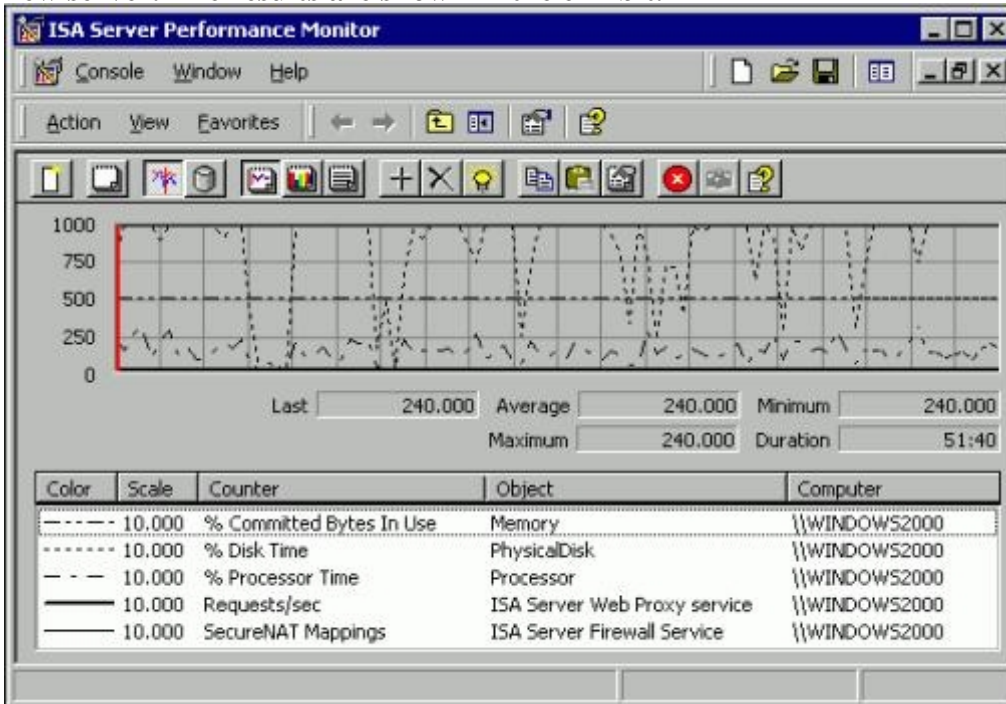
A: The scenario does not mention any incoming web traffic, only Internet access for the local users.

C: The load factor is a relative number that compared the array members with each other. The higher load factor the greater the load. Changing the load factor from the default 100 to 1,000 would not change anything. Each array member would still take 33% of the load.

D: We should ensure that the ISA servers use a single cache. The size of the cache is not the problem in this scenario.

QUESTION NO 2

You are the network administrator for your company. You install ISA Server on a network computer in integrated mode. You configure the firewall service to use the ISA Server file format for logging. You configure the web proxy service to use the W3C extended log file format for logging. Users now report that access to the Internet is very slow. You use performance monitor to monitor your new server. The results are shown in the exhibit.



You need to configure the ISA server computer to improve logging performance. Which two actions should you take? Each correct answer presents part of the solution. (Choose two.)

- A. Monitor for frequently accessed web sites. Create and schedule a content download job for those sites.
- B. Configure the logging properties of the firewall service and the web proxy service to limit the number of fields.
- C. Modify the firewall service and the web proxy service to log information to an ODBC-compliant database.
- D. Increase the size of the URL disk cache on the server.
- E. Move the location of the log files for the firewall service and web proxy service to another hard disk drive on the server.

Answer: B, E

Explanation: We must improve logging performance

B: With the W3C log format only the selected fields are included in the log file. This would reduce the size of the log file and increase logging performance.

E: By moving the log file to a separate physical disk, ISA disk access performance would improve.

Note: ISA server supports the following log file formats

- W3C extended file format.
- ISA Server text file format.
- Any Open Database Connectivity (ODBC)-compliant database.

Reference: ISA Server 2000 Administration Study Guide (Sybex), Log File Format, Page 381

Incorrect Answers

- A:** Downloading the contents of frequently visited sites might improve web access performance, but it would not improve logging performance.
- C:** Storing log information in an ODBC-compliant database would increase overhead.
- D:** Increasing the size of the URL disk cache would to make an impact on the logging performance.

QUESTION NO 3

You are the enterprise administrator for your company's network, which consists of one Microsoft Windows 2000 domain and four sites. You plan to deploy the network configuration shown in the exhibit.

The Seattle, Las Vegas, and Atlanta arrays should use the same enterprise policy. Only the Chicago site has a connection to the Internet. You want the other three sites to use dial-up connections to the Chicago site.

The ISA Server computers at the Seattle, Las Vegas, and Atlanta sites should provide Internet access to client computers on the network. At what level should you configure dial-up connections, dial-up entry policy elements, and routing rules at these three sites.

To answer, click the select and place button and drag the check box from the right side to the appropriate empty boxes on the left side. You may reuse the check box as often as necessary. You might not need to fill all the empty boxes.

Quick drop

	At each ISA server computer	At the array level	At the enterprise level	Check box
Dial-up connections	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Dial-up entry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Routing Rule	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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Answer:

	At each ISA server computer	At the array level	At the enterprise level	Check box
Dial-up connections	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Dial-up entry	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Routing Rule	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

Explanation: Only the Chicago site has a connection to the Internet so Dial-up connection must be configured at ISA server level.

Dial-up entries should be defined at the array level.

Routing rules should be defined both at the Array level and at the Enterprise level.

QUESTION NO: 4

You are the network administrator for your company. You install ISA server on a Microsoft Windows 2000 Server computer and configure it with the settings shown in the exhibit.

ISA Management

Name	Scope	Protocol	Action	Applies to	Schedule
FTP_Users	Enterprise	FTP,FTP download only	Allow	Accounts: MILLERTEXTILES\Domain Users	Always
Global Catalog	Enterprise	Any RPC Server	Allow	Any Request	Always
HTTP_Users	Enterprise	HTTP	Allow	Accounts: MILLERTEXTILES\Sales	Always
HTTPS	Enterprise	HTTPS	Allow	Accounts: MILLERTEXTILES\Marketing	Always
LDAP	Enterprise	LDAP GC (Global Catalog)	Allow	Any Request	Always

Mail	Enterprise	POP3, SMTP	Deny	Accounts: MILLERTEXTILES\Graphics	Weekends
NNTP	Enterprise	NNTP, NNTP and NNTPS	Allow	Accounts: MILLERTEXTILES\Sales	Work Hours

Client computers on your network use DHCP.

The Sales group on your network can now access external web sites, but the Marketing group cannot. You need to enable only the Marketing and Sales groups to access external web sites. What should you do?

- A. Add the marketing group to the existing HTTP_Users protocol rule.
- B. Add the domain users group to the existing HTTP protocol rule.
- C. Create a new site and content rule and add the Marketing group.
- D. Create a new destination set and enter the range of IP addresses of the Marketing group computers.
- E. Create a new protocol rule to allow the HTTP protocol. Include the IP addresses of the marketing group computers.

Answer: A

Explanation: The Marketing users must be able to access external web sites. This is achieved by enabling the HTTP protocol for this group. The Sales groups already have access to external web sites through the HTTP_Users protocol rule. We enable web access to the Marketing group by adding them to this group as well.

Incorrect Answers

B: Not all domain users should have access to external web sites.

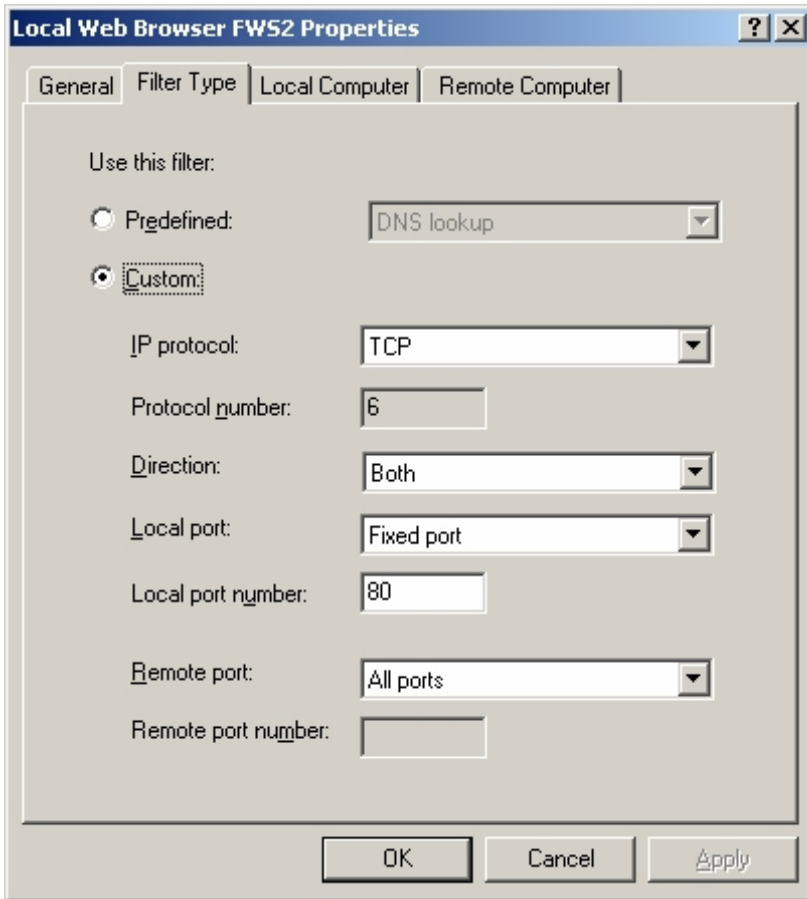
C: A site and content rule would not, by itself, give web access to the Marketing group. A HTTP protocol rule is required.

D: A HTTP protocol rule is required.

E: It is not possible to use the IP addresses of the Marketing group computers since DHCP is used for IP configuration. If static IP addresses were in use this proposed solution would work.

QUESTION NO 5

You are the administrator of an ISA Server computer named FWS2, which has two network adapters. One network adapter is connected to the Internet, and the other is connected to your internal network. You want to run a web browser on FWS2 to diagnose connectivity speed to the Internet. You do not want to use the ISA Server cache. You create an IP packet filter named local web browser FWS2. This packet filter applies only to FWS2. It is enabled and can be used by all remote computers. The configuration of the packet filter is shown in the exhibit.



When you try Research to use your Web browser on FWS2 to connect to the Internet, ISA server do not allow the connection. How should you correct this problem?

- A. Configure ISA Server to enable IP routing.
- B. Change the properties of the local web browser packet filter to use the predefined filter named HTTP server.
- C. Change the properties of the local web browser packet filter to use a dynamic local port and remote port 80.
- D. Create a new protocol rule that applies to FWS2 and allows the use of the HTTP protocol to access the Internet.
- E. Configure your web browser to use a proxy server. Specify the internal IP address of FWS2 and the TCP port for outgoing web requests.

Answer: C

Explanation: We don't want to use caching on ISA Server so we cannot use the local port 80. Instead we have to create a dynamic local port and a static remote port 80.

Incorrect Answers

A: We want to disable caching. Routing does not affect caching.

B, D, E: We must disable caching

QUESTION NO: 6

You administer your company network, which includes an ISA server computer. This computer is connected to the Internet by means of a 56-Kbps dial-on-demand connection. You configure routing and remote access to connect the network to your local ISP.

Using network monitor, you discover that daily network traffic over the 56-Kbps connection is nearing capacity. You need to configure ISA server to decrease the volume of HTTP traffic over this connection during working hours. You also need to allocate as much bandwidth as possible to users during working hours.

What should you do?

- A. Create a new bandwidth rule for HTML documents and configure it with an inbound bandwidth priority of 100.
- B. Create a new bandwidth rule for HTML documents and configure it with an inbound bandwidth priority of 10.
- C. Schedule content downloads from frequently visited web sites to occur during working hours.
- D. Schedule content downloads from frequently visited web sites to occur during non-working hours.

Answer: D

Explanation: The ISA Server scheduled content download feature downloads the Hypertext Transfer Protocol (HTTP) content directly to the ISA Server cache, upon request or as scheduled. It updates the ISA Server cache with HTTP content that you anticipate will be requested by clients in your organization. This content will be available for access directly from the ISA Server cache, rather than from the Internet. By scheduling this download to non-working hours, HTTP traffic would decrease during working hours.

Reference:

ISA Server 2000 Product Guide, Scheduled Content Download, Page 22

ISA Server 2000 Administration Study Guide (Sybex), Creating Bandwidth Rules, Page 271

Incorrect Answers

- A:** 100 is the default bandwidth priority. Nothing would be changed.
- B:** A bandwidth priority of 10 would increase the priority of HTTP traffic. HTTP traffic would not be decreased-
- C:** The content download must not be scheduled during working hours. We want to decrease HTTP traffic during working hours.

QUESTION NO: 7

You are the administrator of your company's ISA server computer. Users need to connect to an internal Microsoft Windows 2000 Server computer named TS1, which runs Terminal services. TS1 is configured

as a SecureNAT client. However, when you run the server publishing wizard, you cannot select the Terminal services protocol.

You need to configure your ISA server computer to provide external access to TS1. What should you do?

- A. Install the firewall client software on TS1. Ensure that the mspcint.ini file is downloaded to the directory where the firewall client software is installed.
- B. Create a protocol definition for the remote desktop protocol. Specify the direction as inbound with no secondary connections.
- C. Install the firewall client software on TS1. Create a wspcfg.ini file for the remote desktop protocol settings. Place the file in the directory where the firewall client software is installed.
- D. Create a protocol definition for the remote desktop protocol. Specify the direction as outbound and configure a secondary connection for TCP ports above 1042.

Answer: B

Explanation: Terminal Services use the Remote Desktop Protocol (RDP). The Terminal session will be initiated from client computer TS1. We must therefore allow inbound RDP traffic. There already exists a predefined Protocol Definition for RDP. However, we create a new protocol definition for RDP and specify the direction as inbound only.

Reference: Technet, ISA Server Product Definition, Configuring protocol definitions

Incorrect Answers

A, C: We must allow RDP traffic.

D: The Terminal services session will be initiated at the client. We must allow inbound, not outbound, RDP traffic.

QUESTION NO: 8

You are the network administrator for Fabrikam, Inc. Your company specializes in manufacturing and selling fly fishing reels. Quarterly sales are declining. To increase sales, management wants you and your staff to create and maintain an Internet storefront.

You install and configure ISA server and Internet information services 5.0 on six computers. You also install network load balancing on each one. You configure all six with an NLB cluster whose IP address is 131.107.200.10/24. Each computer is now configured as shown in this table:

Host Name	Internal IP Address	External IP Address	Load Factor
ISA-server1	10.10.100.100/24	131.107.200.1/24	100
ISA-server2	10.10.100.101/24	131.107.200.2/24	25
ISA-server3	10.10.100.102/24	131.107.200.3/24	100
ISA-server4	10.10.100.103/24	131.107.200.4/24	25
ISA-server5	10.10.100.104/24	131.107.200.5/24	200
ISA-server6	10.10.100.105/24	131.107.200.6/24	100

Using network monitor, you discover that your communication link to the Internet is operating at full capacity. However, only two of the computers are processing orders.

You need to reconfigure your ISA server computers to handle inbound and outbound traffic more efficiently. Which three actions should you take? Each correct answer presents parts of the solution. (Choose three)

- A. Add a host record for the web site name with the IP address 131.107.200.10.
- B. Change the client computer configuration to use secure network address translation.
- C. Configure each computer with the internal IP address for intra-array communication.
- D. Install DNS on each computer and implement round-robin DNS.
- E. Change the load factors on ISA-server2 and ISA-server4 to 1
- F. Choose the **Use Automatic Configuration Script** option on client Web browsers and include the address of the script.

Answer: A, C, F

Explanation:

A: The clients must be able to resolve a host name to the NLB cluster. We must add a host record mapping the web site name to the IP address of the cluster.

C: The computers in the cluster must be set up for intra-cluster communication.

F: The Automatic Configuration Script option is used for a distributed Web cache which has been set up using Cache Array Routing Protocol (CARP). It distributes the URL cache evenly across a group of ISA servers..

Reference:

ISA Server 2000 Administration Study Guide (Sybex), Enabling and Configuring NLB, Pages 281-287
Technet, ISA Server 2000 Product Documentation, Using Network Load Balancing

Incorrect Answers

B: There is no need to use SecureNAT clients.

D: There is no need to install DNS on each client. Furthermore, NLB is used so there is no need to use Round Robin DNS for load balancing.

E: With a load factor of 1 server2 and server4 would hardly be used at all. This would not improve performance.

QUESTION NO 9

You are the administrator of your company network. You install ISA server with default settings on a network computer. You install the firewall software on client computers and configure them to use an automatic configuration script.

You configure the logging and reporting properties on the ISA server computer and create a report job. It generates the report shown in the exhibit.

Microsoft Internet Security & Acceleration Server 2000

Traffic and Utilization Report

Saturday, October 28, 2000 to Thursday

Cache Hit Ratio Chart

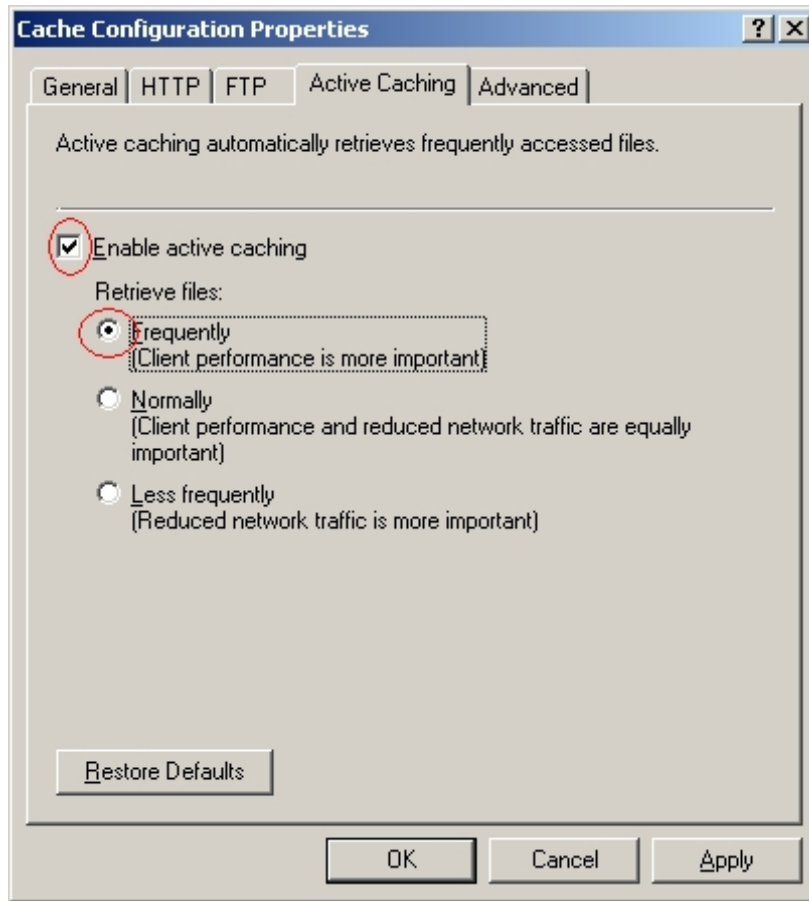
Status	Requests	% of Total Requests
Object returned from the Internet, updating an existing file in the cache	423	83.1 %
Object returned from the cache after verifying that it has not been modified	49	9.6 %
Object returned from the cache without verification	32	6.3 %
Object returned from the Internet	10	2.0 %
Object returned from another array member	0	0.0 %
Source information unavailable, error or undefined	0	0.0 %
Total	509	100 %

You need to configure ISA Server to improve performance for network users. What should you do?

- A. Enable active caching and configure it to reduce network traffic. Configure scheduled content download jobs to include frequently visited web sites. Decrease the time-to-live settings for cached HTTP objects.
- B. Enable active caching and configure it to retrieve files more frequently. Configure scheduled content download jobs to include frequently visited web sites. Increase the time-to-live settings for cached HTTP objects.
- C. Enable HTTP caching. Configure scheduled content download jobs to include frequently visited web sites. Increase the time-to-live settings for cached HTTP objects.
- D. Enable HTTP caching. Configure the ISA server computer to route outgoing web requests to an upstream proxy server. Decrease the time-to-live setting for cached HTTP objects.

Answer: B

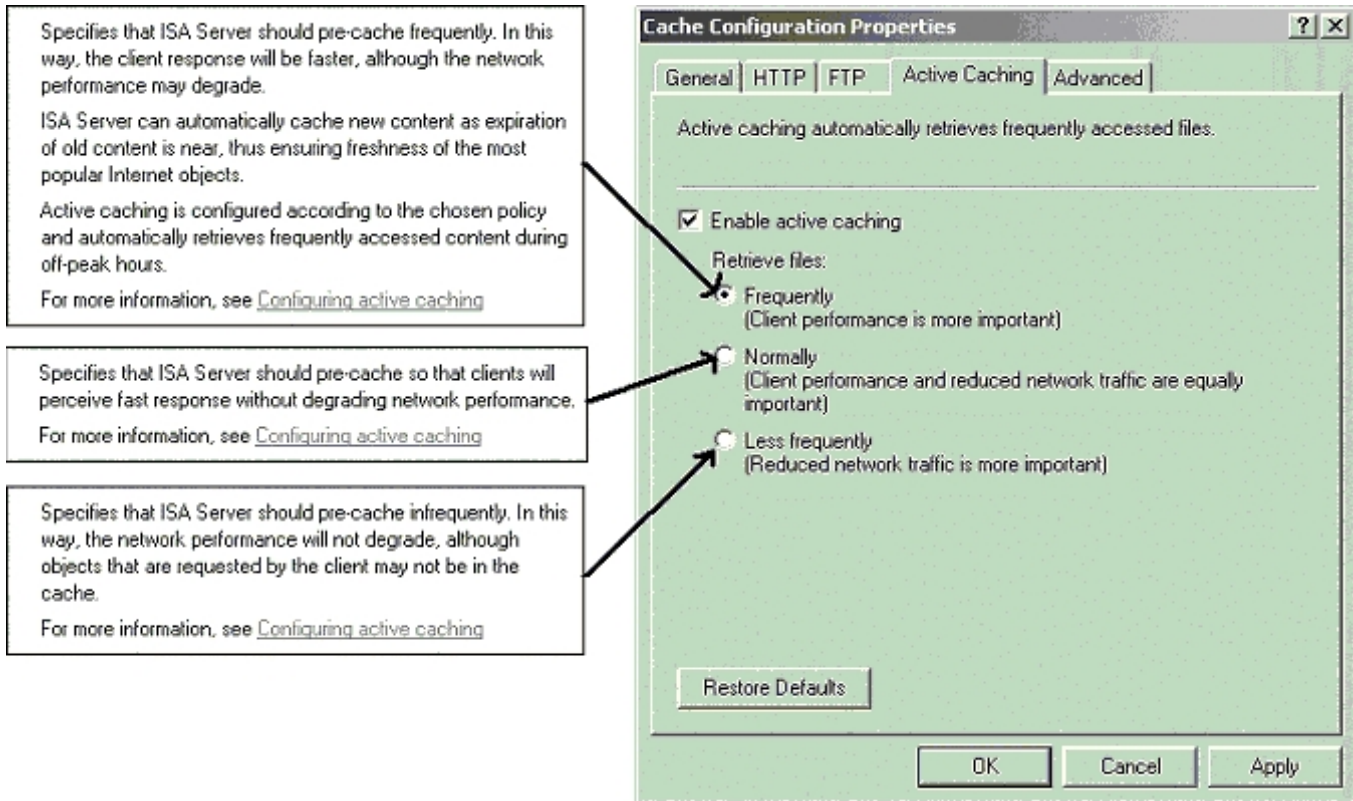
Explanation: Active caching automatically retrieves frequently accessed files. With active caching enabled, ISA Server analyzes objects that are in the cache to determine which are most frequently accessed. When popular objects in the cache get ready to expire, ISA Server automatically refreshes the content in the cache. We should enable active caching and configure it to retrieve files frequently (default setting is normally). See picture. These settings can be configured in ISA management Console->Servers and Arrays->Server->Right-click Cache configuration->Properties->Active Caching.



Furthermore, we should ensure that cached HTTP objects do not expire before they are refreshed. We should therefore increase the time-to-live setting for cached HTTP objects.

Reference:

Technet, ISA Server Product Documentation, Configuring active caching



Specifies that ISA Server should pre-cache frequently. In this way, the client response will be faster, although the network performance may degrade.
 ISA Server can automatically cache new content as expiration of old content is near, thus ensuring freshness of the most popular Internet objects.
 Active caching is configured according to the chosen policy and automatically retrieves frequently accessed content during off-peak hours.
 For more information, see [Configuring active caching](#)

Specifies that ISA Server should pre-cache so that clients will perceive fast response without degrading network performance.
 For more information, see [Configuring active caching](#)

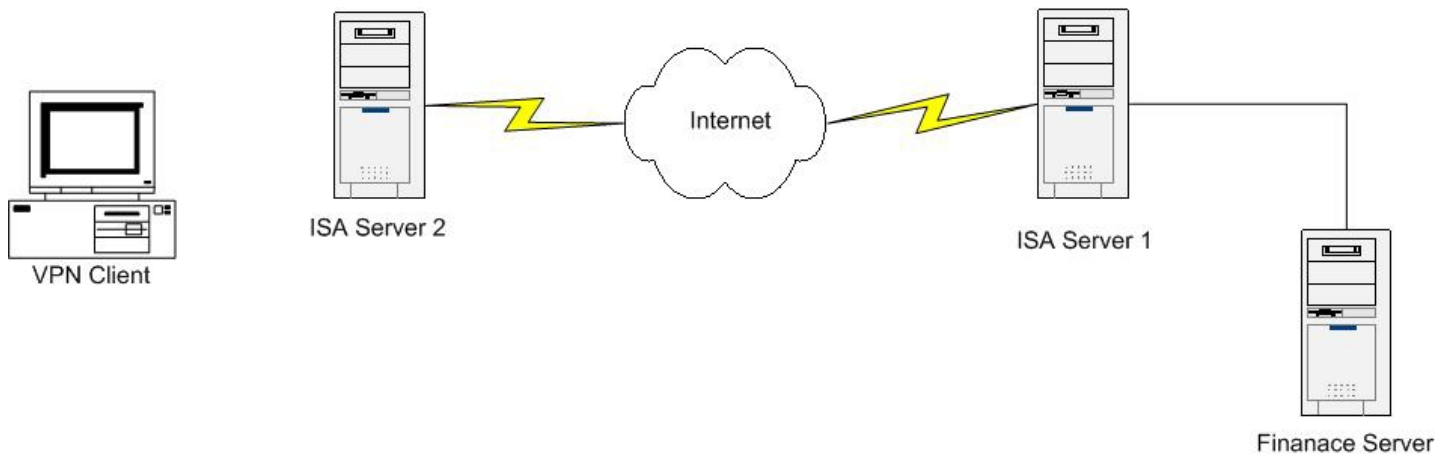
Specifies that ISA Server should pre-cache infrequently. In this way, the network performance will not degrade, although objects that are requested by the client may not be in the cache.
 For more information, see [Configuring active caching](#)

Incorrect Answers

- A:** Active Caching with the Less Frequently option reduce network traffic, but the cache will contain less fresh objects, especially if we decrease the time-to-live setting for cached HTTP objects as well. This is not the optimal configuration to improve performance for network users.
- C:** By looking at the exhibit we see that HTTP caching is already enabled (it is enabled by default). Scheduled content download from frequently visited web sites and increased TTL of HTTP objects could improve performance. However, active caching would most likely improve performance further.
- D:** By looking at the exhibit we see that HTTP caching is already enabled (it is enabled by default). Furthermore there is no mention of a upstream proxy server in the scenario.

QUESTION NO 10

You are the administrator of your company network. The relevant portion of its configuration is shown in the exhibit.



ISA-server2 is configured to allow inbound VPN connections. You create a VPN connection on VPN-client1 to connect to ISA-server1. Now you need to allow the users of VPN-client1 to access resources on the finance server.

What should you do?

- A. On ISA-server1, enable IP routing and enable the PPTP IP protocol to pass through the firewall. Configure VPN-client1 as a SecureNAT client.
- B. On ISA-server2, enable IP routing and enable the PPTP IP protocol to pass through the firewall. Configure VPN-client1 as a SecureNAT client.
- C. Run the remote ISA VPN wizard on ISA-server1. Install the firewall client software on VPN-client1.
- D. Run the remote ISA VPN wizard on ISA-server2. Install the firewall client software on VPN-client1.

Answer: A

Explanation: We must configure the remote ISA Server, the ISA Server closest to the Finance Server. We should enable IP routing and allow the PPTP protocol to pass through the firewall. Furthermore, we should set up the client computer as a SecureNAT client.

Note: ISA Server includes three wizards that you can use to create ISA VPN connections:

- * Local ISA VPN Wizard. Use this wizard to set up the ISA Server computer that receives connections. The local ISA VPN Server can also be set up to initiate connections.
- * Remote ISA VPN Wizard. Use this wizard to set up the ISA Server computer that initiates and receives connections.
- * Set Up Clients to ISA Server VPN Wizard. Use this wizard to allow roaming users to connect to the VPN.

Reference:

Technet, ISA Server Product Documentation, Using an ISA Server virtual private network
ISA Server 2000 Administration Study Guide (Sybex), Configuring ISA Server for VPN Tunnels, page 218.

Incorrect Answers

B: We must configure ISA Server 1, not ISA Server 2.

C, D: There already exists a VPN connection between the two ISA Servers. There is no need to run the Remote ISA VPN Wizard.