

Study guide by [ExamNotes.net](http://ExamNotes.net)

## **Exam 70-227 Installing, Configuring, and Administering Microsoft Internet Security and Acceleration (ISA) Server 2000, Enterprise Edition**

### **Abstract**

This Study guide will begin to prepare you for the ISA server 2000 exam. Do not use this as your sole source of information. It is only a guide highlighting general facts. This exam encompasses a lot of information and you need hands on time with the product not only stand alone but in an array as well. Also, make sure you have networking, security and TCP/IP fundamentals down cold as you will have to know how to configure the LAT table and the server in general. When you pass this exam, you achieve [Microsoft Certified Professional](#) status. You also earn elective credit toward [Microsoft Certified Systems Engineer](#) certification.

### **Exam Info**

- Exam #: 70-227
- Time Limit: 160 min.
- Passing Score: 720
- Questions: 55
- Format: NON-Adaptive

### **Preparation Tools**

In addition to your hands-on experience working with the product, you may want to use the following tools and training to help you prepare for this exam:

#### **[Step-by-Step Guide to Preparing for a Microsoft Certified Professional Exam](#)**

The Step-by-Step Guide describes a concise, six-step approach to preparing for an MCP exam, and is also a compendium of MCP exam-preparation resources.

#### **[Microsoft Official Curriculum](#)**

The Microsoft Official Curriculum (MOC) consists of courses designed by Microsoft product groups that support the certification exam process. You can choose from instructor-led classroom training, self-paced training kits, and online training.

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## Audience Profile

Candidates for this exam operate in medium to very large computing environments that use the Microsoft Windows 2000 Server operating system. They have a minimum of one year's experience implementing and administering network operating systems in environments that have the following characteristics:

- Between 200 and 26,000+ supported users
- Multiple physical locations
- Outbound access for typical client services and applications, such as Web access, e-mail, Telnet, FTP, virtual private networking (VPN), desktop management, and access control policies
- Hosting of network services, such as internal and external Web hosting, messaging, and firewall
- Connectivity needs that include connecting individual offices and users at remote locations to the corporate network and connecting corporate networks to the Internet

## Skills Being Measured

This certification exam measures your ability to implement, administer, and troubleshoot information systems that incorporate the Enterprise Edition of Microsoft Internet Security and Acceleration (ISA) Server 2000. Wherever the term "ISA Server" occurs in this prep guide or in the content of the exam, it refers only to ISA Server 2000, Enterprise Edition. It does not refer to ISA Server 2000, Standard Edition. Before taking the exam, you should be proficient in the job skills listed below:

- Installing ISA Server
- Pre-configure network interfaces
- Verify Internet connectivity before installing ISA Server
- Verify DNS name resolution
- Install ISA Server. Installation modes include integrated, firewall, and cache.
- Construct and modify the local address table (LAT).
- Calculate the size of the cache and configure it.
- Install an ISA Server computer as a member of an array.
- Upgrade a Microsoft Proxy Server 2.0 computer to ISA Server.
- Back up the Proxy Server 2.0 configuration.
- Troubleshoot problems that occur during setup.
- Configuring and Troubleshooting ISA Server Services
- Configure and troubleshoot outbound Internet access.

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- Configure ISA Server hosting roles.
- Configure ISA Server for Web publishing.
- Configure ISA Server for server proxy.
- Configure ISA Server for server publishing.
- Configure H.323 Gatekeeper for audio and video conferencing.
- Configure gatekeeper rules. Rules include telephone, e-mail, and Internet Protocol (IP)
- Configure gatekeeper destinations by using the Add Destination Wizard.
- Set up and troubleshoot dial-up connections and Routing and Remote Access dial-on-demand connections.
- Set up and verify routing rules for static IP routes in Routing and Remote Access
- Configure and troubleshoot virtual private network (VPN) access.
- Configure the ISA Server computer as a VPN endpoint without using the VPN Wizard
- Configure the ISA Server computer for VPN pass-through.
- Configure multiple ISA Server computers for scalability. Configurations include Network Load Balancing (NLB) and Cache Array Routing Protocol (CARP)
- Configuring, Managing, and Troubleshooting Policies and Rules
- Configure and secure the firewall in accordance with corporate standards.
- Configure the packet filter rules for different levels of security, including system hardening.
- Create and configure access control and bandwidth policies.
- Create and configure site and content rules to restrict Internet access.
- Create and configure protocol rules to manage Internet access.
- Create and configure routing rules to restrict Internet access.
- Create and configure bandwidth rules to control bandwidth usage.
- Troubleshoot access problems.
- Troubleshoot user-based access problems
- Troubleshoot packet-based access problems
- Create new policy elements. Elements include schedules, bandwidth priorities, destination sets, client address sets, protocol definitions, and content groups.
- Manage ISA Server arrays in an enterprise.
- Create an array of proxy servers.
- Assign an enterprise policy to an array.
- Deploying, Configuring, and Troubleshooting the Client Computer
- Plan the deployment of client computers to use ISA Server services. Considerations include client authentication, client operating system, network topology, cost, complexity, and client function.
- Configure and troubleshoot the client computer for secure network address translation (SecureNAT).

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- Install the Firewall Client software. Considerations include the cost and complexity of deployment.
- Troubleshoot auto-detection.
- Configure the client computer's Web browser to use ISA Server as an HTTP proxy.
- Monitoring, Managing, and Analyzing ISA Server Use
- Monitor security and network usage by using logging and alerting.
- Configure intrusion detection.
- Configure an alert to send an e-mail message to an administrator.
- Automate alert configuration.
- Monitor alert status.
- Troubleshoot problems with security and network usage.
- Detect connections by using Netstat.
- Test the status of external ports by using Telnet or Network Monitor.
- Analyze the performance of ISA Server by using reports. Report types include summary, Web usage, application usage, traffic and utilization, and security.
- Optimize the performance of the ISA Server computer. Considerations include capacity planning, allocation priorities, and trend analysis.
- Analyze the performance of the ISA Server computer by using Performance Monitor.
- Analyze the performance of the ISA Server computer by using reporting and logging.
- Control the total RAM used by ISA Server for caching

### **Links to use:**

[Configuring Intrusion Detection](#)

[Configuring Protocol Definitions](#)

[Dropping ICMP Packets](#)

[FTP Publishing \(Streaming Video\)](#)

[How Caching Array Routing Protocol \(CARP\) Works](#)

[Intro to Microsoft ISA Server Pt. 1](#)

[Intro to Microsoft ISA Server Pt. 2](#)

[Secure Web Publishing](#)

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[Transferring Digital Certificates](#)

[Deployment Considerations for ISA Server in Education](#)

[Deploying ISA Server at Microsoft](#)

[ISA Server 2000 Enterprise Edition: Deployment Guide](#)

[ISA Server 2000 Standard Edition: Deployment Guide](#)

[ISA Server 2000 Technical Overview](#)

[Lemon Grove Schools Use ISA Server/Chaperon Solution](#)

[MTB Lab: Administering Microsoft Internet Security and Acceleration \(ISA\) Server 2000](#)

[Technical Q and A for ISA Server 2000](#)

[ISA Server Online Help System Main Page](#)

[About ISA Server Clients](#)

[Changing ISA Server Installation Mode](#)

[Changing ISA Server Installation Options](#)

[Configuring DNS for ISA Server Autodiscovery](#)

[Exchange Server on the ISA Server Computer](#)

[Grouping ISA Server Computers for Fault Tolerance](#)

[How to Setup ISA Server to Accept VPN Client Connections](#)

[How to Setup A Local VNP Network](#)

[How to Setup A Remote VPN Network](#)

[ISA Server and IIS Server](#)

[ISA Server and IPSec](#)

[ISA Server Control Service](#)

[ISA Server Events](#)

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[ISA Server Policy at the UK Branch Office](#)

[ISA Server Rules](#)

[ISA Server System Security](#)

[Running Other Services on the ISA Server Computer](#)

[Using an ISA Server VPN](#)

[Using Packet Filters to Publish A Web Server](#)

[Understanding ISA Server](#)

[Web Server on the ISA Server Computer](#)

[ISA Server Enterprise Edition](#)

[Windows 2000 Advanced Server](#)

[MS ISA Server 2000](#)

[ISAServer.org](#)

## **EXAM NOTES**

### **System Requirements**

Before installing this software, refer to any additional release notes that may have accompanied the compact disc. Also, see the ISA Server Support Web site at <http://www.microsoft.com/isaserver/support/> for latest release notes and updated information about ISA Server. The Installation and Deployment Guide (isastart.htm) describes how to install ISA Server, and includes system requirements information. It is located in the \isa folder on the ISA Server CD. ISA Server requires Windows 2000 Server or Advanced Server with Windows 2000 Service Pack (SP) 1 or Datacenter Server. Windows 2000 Service Pack 1 is located under \Support\Windows2000\_SP1 on the ISA CD.

You can obtain localized versions of Windows 2000 SP 1 at:

<http://www.microsoft.com/windows2000/downloads/recommended/sp1>

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There are several known issues in Windows 2000 that affect ISA Server functionality. It is recommended that you install a roll-up package, which includes hot fixes for these issues. The roll-up package is located in the \Support\hotfixes\Win2000 folder on the ISA Server CD. To install the roll-up package, run: Q275286\_W2K\_SP2\_x86\_en.EXE on a computer that already has Windows 2000 SP1 installed. Windows 2000 Service Pack 2 should include these hot fixes. See the ISA Server Support site

## Server Setup

During installation, ISA Server makes the following configuration changes to the operating system:

- The Windows 2000 TCP/IP driver is configured to use a higher range of ports (ports 1024 through 65535). This setting is required for high load.
- Some registry settings are changed so that Windows 2000 QoS settings can be properly applied from ISA Server to the QoS packet scheduler service. These settings are applied only after the ISA Server computer is restarted.

Do not install more than one server at a time to the same array. Similarly, do not uninstall more than one server at a time from the same array. When you reinstall the domain controllers, and then run the ISA Server Enterprise Initialization Tool, many informational events may be logged on the domain controller when the normal schema replication process begins. These events start with the text A schema mismatch encountered while replicating object. You can safely ignore these events.

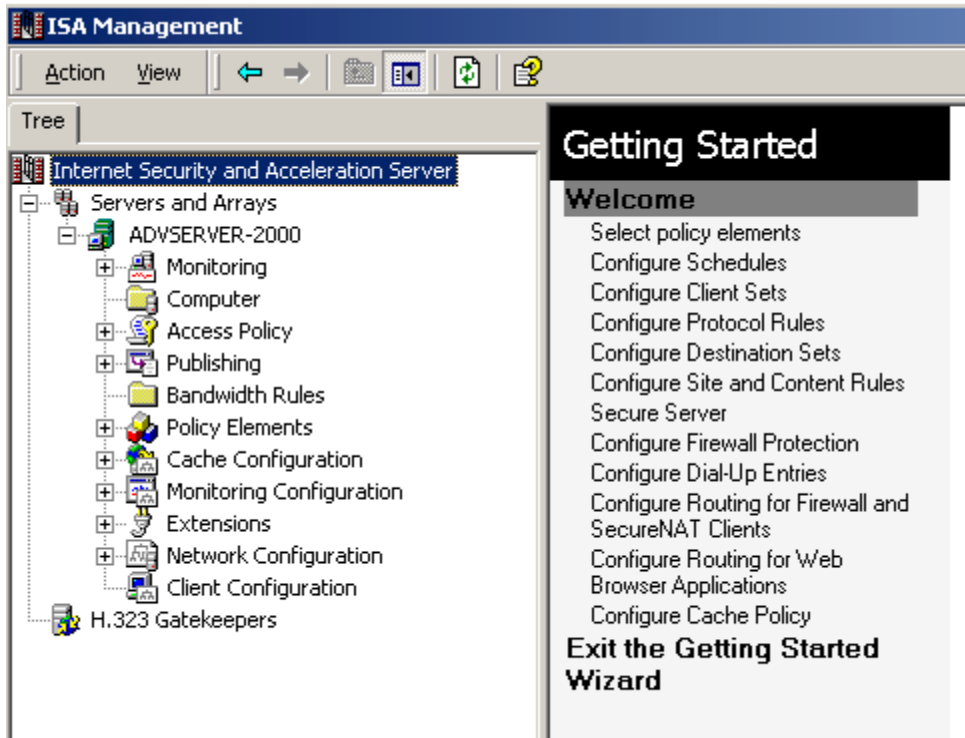
Unattended setup of ISA Server always installs full installation. You cannot run unattended reinstallation and specify a different mode. The mode parameter that you specify in the Features section of the Msisound.ini file must be the same as in the original ISA Server installation. Uninstall ISA Server before moving the computer to another domain. If you uninstall the only computer in the array, then the entire array is removed. Before you uninstall ISA Server, close all active applications. Otherwise, some files may not be deleted. If ISA Server cannot be uninstalled using the Add/Remove Programs Control Panel applet, use the RMISA tool (available in the \isa\i386 folder on the ISA Server CD) to remove the ISA Server installation. If the Active Directory server is unavailable, then some server-specific information will not be removed from the array. For this reason, if this is the only server in the array, the array will not be deleted. You **cannot** use the Add/Remove Programs Control Panel applet to uninstall ISA Server if the server was previously deleted from an array.

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## Server MMC



Make sure you are comfortable with the admin of the MMC

## Client Support

To run unattended Firewall client installation, type the following at a command line:

**Path\Setup /v"/qn"**

Notice that there are no spaces after the quotes (")

After upgrading Windows 95 to Windows NT or Windows 2000, the Firewall Client software must be reinstalled by a user with Administrator privileges. When the Firewall client software is installed, the Web browser on the computer is configured only for the current user. If the Firewall client uses Shift-JIS or EUC character encoding, some of the fields in the log file may be invalid. Automatic discovery can be configured using DHCP or DNS for clients running Windows 2000, Windows 98, and Windows Millennium Edition. *Automatic discovery is not supported for Windows NT 4.0 and Windows 95* (and not as stated in ISA Server Help).

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## Administration

When configuring ISA Server (using ISA Management or the ISA Admin COM objects), the administrator's user account must be in the same domain forest as the ISA Server computer or array.

ISA Server does not support changing the name of the computer. If you are unable to access, and therefore cannot view, objects in ISA Management (alerts, sessions, or others), verify that ISA Server's default authentication level is not set to None. Perform the following steps: Open the Windows Distributed Component Object Model (DCOM) tool.

Type the following at a command line: **dcomcnfg.exe**

In the Distributed COM Configuration Properties dialog box, on the Default Properties tab, verify that the Default Authentication Level is not set to None. ISA Server does not support using double-byte character sets (DBCS) for array's DNS name. Passwords configured for an array are lost when the array has no members.

Passwords modified when no array members are available are also lost. When you add an array member, reset the passwords. Reconfigure permissions for ISA Server objects after you promote a stand-alone server.

See the ISA Server Help for information on configuring permissions

## Network Configuration

If you enable or disable any network adapter on the ISA Server computer, restart the Firewall service and the Web Proxy service. See the ISA Server Help for instructions on stopping and starting these services. If you add or rename network dial-up connections, restart the Web Proxy and Firewall services. If you frequently change your network configuration, then in rare scenarios, you may receive one of the following events:

### messages:

*"The packet filter dial-out interface cannot be rebound"*

*"A packet filter interface could not be bound"*

If you receive these messages, then reboot your computer to ensure that the new settings function properly and securely. When ISA Server receives an HTTP-S client request, it may service the request itself, or it may route the request to an upstream ISA Server, which in turn might also route the request to another ISA Server (and so on). If only one ISA Server (or no ISA Server) requires client

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authentication, the request will be serviced. If more than one ISA Server requires client authentication, the request will not be serviced. When configuring Firewall clients to use the PPTP protocol to access a remote VPN server, be sure that the Local Address Table (LAT) configured on the client computer includes the IP address range of the remote network.

## **Packet Filtering**

The IP half scan attack alert actually notifies that an attempt to send TCP packets with invalid flags were made, and not as described in the ISA Server Help. An IP packet filter configured to filter the ICMP IP protocol with ICMP type set to 255 actually filters all ICMP types. Similarly, an IP packet filter configured to filter the ICMP IP protocol with code set to 255 actually filters all codes. When you configure an IP packet filter, setting the local computer to This ISA server's external IP address, and setting the IP address to 0.0.0.0, the source IP address for outgoing packets and the destination IP address for incoming packets are ignored. IP packet filters configured to filter IP packets destined for or coming from a remote computer whose IP address is 0.0.0.0 applies to all remote IP addresses (and has the same behavior as if configured to All remote computers). When configuring an IP packet filter for a perimeter network (DMZ), if the local computer (or subnet) is set to 0.0.0.0, then ISA Server ignores the IP packet filter. When configuring IP packet filters, use the predefined filter types NetBIOS All and Netbios WINS client only only when Local Computer is set to Default IP address on the external interface. If Local Computer is set, to use any other IP address with the filter types NetBIOS All or Netbios WINS client only, the IP packet filter is ignored.

## **Access Policy and Publishing**

If a SecureNAT client requires name resolution from an external DNS server, you must create a protocol rule that allows the DNS Query protocol. See the ISA Server Help for information on creating protocols. When an ISA Server client uses Outlook Express to connect to a Hotmail account and ISA Server is configured to require authentication, the client request fails. This is because the client sends its Hotmail authentication, rather than the Windows user account authentication. This is a known Outlook Express bug. Clients with IP address 127.0.0.1 (local host) have permission to access all objects, regardless of the access policy or the publishing policy. If ISA Server is installed in cache mode, all destinations are considered internal. No rules are applied to external destinations. In a Web publishing scenario, when ISA Server processes a client request, it replaces the host (HTTP HOST:) headers in the request with the server specified in the applicable Web publishing rule. You can configure ISA Server to leave the original host headers, by selecting the Send the original host header to the publishing server instead of the actual one on the Action page. In some cases, a client may fail to access a server published by ISA Server, even though a server-publishing rule has been configured. This is because some

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publishing servers (including media streaming servers, Microsoft Exchange Server, and others) create secondary, outbound connections when servicing external client requests. Therefore, in addition to configuring server publishing rules that allow external clients permission to access the server, you must also create a site and content rule that allows the publishing server permission to access all clients (who have permission to access the server) on the Internet.

## **SMTP Filter**

The SMTP filter is disabled by default upon installation. If you install the SMTP filter in an array configuration, you must be a member of the Enterprise Admins Windows 2000 group in order to modify the SMTP filter. ISA Server Help describes how to set up the SMTP filter, explaining that you should run the setregs.vbs tool on the SMTP Server. However, the Setregs.vbs tool mentioned in the documentation is no longer available. Instead, use the SMTPCred.exe tool, located in the isa\i386 folder on the ISA Server CD. This tool is required only when ISA Server is installed as a stand-alone server and the Message Screener is installed on a remote computer (not on the ISA Server computer). When an SMTP Server is installed and configured on the ISA Server computer as the only mail gateway to the Internet, then when the SMTP filter is enabled, all outgoing messages are filtered

## **Alerting, Logging, Reporting**

You cannot save logs as Access databases, although the ISA Server Help says that you can. The scripts for use with SQL Server are located in the \ISA folder on the ISA Server CD-ROM, and not as specified in the ISA Server Help. You can log to SQL databases, using either Windows authentication or SQL Server authentication. Note the following: If you configure the DSN to use Windows authentication, grant appropriate access to the ISA Server computer. Note that in this case, credentials configured in ISA Management's logging properties are ignored for the specific log. If you configure the DSN to use SQL Server authentication, configure ISA Management logging properties to use the DSN with appropriate credentials of an SQL user. When creating a report job, specify a domain administrator credentials.

You can set different credentials, but then you should set the DCOM security settings of the ISA report data collector object in every ISA Server in the array accordingly. Reports created during the first 24 hours after installation will be empty. ISA server limits the number of daily and monthly log summaries kept on the disk. You can use ISA Management to configure the number of summaries. If a report is generated, that includes dates for which there are no daily summaries, the corresponding monthly summary is used and the entire month is included in the report. This is indicated in the report time interval in both ISA Management and the generated report (in HTML format)

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## ISA Server overview

There is an explosion of business activities taking place on the Internet. Vast numbers of corporate networks are now connected to the Internet and the need is greater than ever for a powerful and easy-to-administer Internet gateway that provides a secure connection while also enhancing and improving network performance. Microsoft Internet Security and Acceleration (ISA) Server meets these demands by offering a complete Internet connectivity solution that contains both an enterprise firewall and a complete Web cache solution. These services are complementary—you can use either or both of these functions when you install ISA Server in your network

ISA Server secures your network, allowing you to implement your business security policy by configuring a broad set of rules that specify which sites, protocols, and content can be passed through the ISA Server computer.

ISA Server monitors requests and responses between the Internet and internal client computers, controlling who can access which computers on the corporate network. ISA Server also controls which computers on the Internet can be accessed by internal clients.

## Firewall and security overview

Microsoft Internet Security and Acceleration (ISA) Server can be deployed as a dedicated firewall that acts as the secure gateway to the Internet for internal clients. ISA Server protects all communication between internal computers and the Internet. In a simple firewall scenario, the ISA Server computer has two network interface cards, one connected to the local network and one connected to the Internet.

You can use Microsoft Internet and Security (ISA) Server to configure the firewall, configuring policies and creating rules to implement your business guidelines. By setting the security access policies, you prevent unauthorized access and malicious content from entering the network. You can also restrict what traffic is allowed for each user and group, application, destination, content type, and schedule

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# ISA Server firewall and security features

## Outgoing access policy

You can use ISA Server to configure site and content rules and protocol rules that control how your internal clients access the Internet. Site and content rules specify which sites and content can be accessed. Protocol rules indicate whether a particular protocol is accessible for inbound and outbound communication

## Intrusion detection

Integrated intrusion detection mechanisms can alert you when a specific attack is launched against your network. For example, you can configure the ISA Server to alert you if a port-scanning attempt is detected

## Security Wizard

The ISA Server Security Wizard enables you to set the appropriate level of system security, depending on how ISA Server functions in your network

## Application filters

ISA Server controls application-specific traffic with data-aware filters. ISA Server uses the filters to determine if packets should be accepted, rejected, redirected, or modified

## Authentication

ISA Server supports the following user authentication methods: Integrated Windows authentication, client certificates, digest, and basic

## Publishing overview

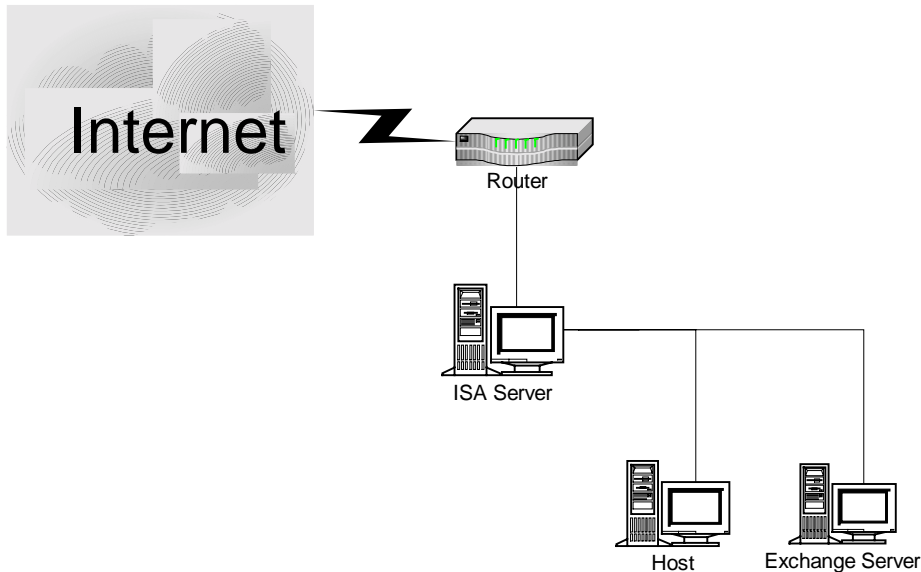
Microsoft Internet Security and Acceleration (ISA) Server allows you to publish internal servers to the Internet without compromising the security of your internal network. (Very Cool) You can configure Web publishing and server-publishing rules that determine which requests should be sent to a server on your local network, providing an increased layer of security for your internal servers.

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For example, you can place your Microsoft Exchange server behind the ISA Server computer and create server-publishing rules that allow the e-mail server to be published to the Internet. Incoming e-mail to the Exchange server is intercepted by the ISA Server computer, which gives the appearance of an e-mail server to clients. ISA Server can filter the traffic and forward it on to the Exchange server. Your Exchange server is never exposed directly to external users and sits in its secure environment, maintaining access to other internal network services.



When a client on the Internet requests an object from a Web server, the request is actually sent to an Internet protocol (IP) address on the ISA Server computer. Web publishing rules that are configured on the ISA Server computer forward the request, as applicable, to the internal Web server.

In both these scenarios, the publishing servers require no special configuration. This is because the servers benefit from the ISA Server extensible network address translation (NAT) architecture

## Cache overview

Microsoft Internet Security and Acceleration (ISA) Server implements a cache of frequently requested objects to improve network performance. You can configure the cache to ensure that it contains the data that is most frequently used by the organization or accessed by your Internet clients

- ISA Server can be used to allow communication between your local network and the Internet

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Communication may be internal clients accessing servers on the Internet—in this case, ISA Server implements forward caching. Communication might be external clients accessing internal, publishing servers—for this case, ISA Server features reverse caching. Both scenarios can benefit from ISA Server's ability to cache information, making it more quickly available to users.

## ISA Server caching features

### Distributed caching

When you set up an array of ISA Server computers, you benefit from distributed content caching. ISA Server uses the **Cache Array Routing Protocol** (CARP) to enable multiple ISA Server computers to be arrayed as a single logical cache

### Hierarchical caching

ISA Server further extends distributed caching by allowing you to set up a hierarchy of caches, chaining together arrays of ISA Server computers, so that clients can access objects from the cache geographically nearest them

### Scheduled caching

Use the scheduled cache content download service to configure when the ISA Server should fetch commonly requested content from the Internet to its cache

### Reverse caching

ISA Server can cache content of publishing Web servers, thereby improving their performance and accessibility. All ISA Server caching features are applicable for the content on published servers.

### Forward caching

ISA Server can be deployed as a forward caching server that provides internal clients with access to the Internet. ISA Server maintains a centralized cache of frequently requested Internet objects that can be accessed by any web browser client. Objects served from the disk cache require significantly less processing than objects served from the Internet. This improves client browser performance,

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decreases user response time, and reduces bandwidth consumption on your Internet connection.

ISA Server can be deployed in front of an organization's Web server that is hosting a commercial Web business or providing access to business partners. With incoming Web requests, ISA Server can impersonate a Web server to the outside world, fulfilling client requests for Web content from its cache. ISA Server forwards requests to the Web server only when the requests cannot be served from its cache.

## **Enterprise management overview**

### **ARRAYS**

You can set up Microsoft Internet Security and Acceleration (ISA) Server computers as stand-alone servers or group them into arrays. Arrays include one or more ISA Server computers, **all of which share the same configuration**. ISA Server extends centralized management for arrays to the enterprise level.

The ISA Server enterprise includes all the arrays in your organization. When you set up the enterprise, you specify the enterprise policy management. You can select a centralized enterprise policy that applies to all arrays in the enterprise or a more flexible policy where each array administrator can define a local policy.

You can create array-level access policies and enterprise-level policies. The enterprise policy can be applied to any array and can be augmented by the array's own policy. This enables administrators at branch and departmental levels to adopt governing enterprise policies.

## **Extensibility overview**

Security policies and implementation vary from organization to organization. Traffic volume and content formats also pose unique concerns. No one product or vendor can meet all of the security and performance needs of a large organization, so Microsoft Internet Security and Acceleration (ISA) Server is highly extensible.

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# ISA Server extensibility mechanisms

## Extensible administration

You can write scripts or management tools using the administration COM object, with programmatic read/write access to all management options

## Application filters

You can develop application filters that intercept, analyze, or modify any data stream

## Web filters

You can create Web filters, based on Internet Server API (ISAPI), for viewing, analyzing, blocking, redirecting, or modifying Hypertext Transfer Protocol (HTTP) and File Transfer Protocol (FTP) traffic

## Extensible user interface

You can extend the ISA Server interface with MMC snap-ins

## Extensible alerts

You can define new events and scripts that are automatically launched in response to events

## Extensible storage

You can register additional information for storage with ISA Server configuration, which centralizes management of add-in filters and tools

## Architecture overview

Microsoft Internet Security and Acceleration (ISA) Server works at various communication layers to protect the corporate network

At the packet layer, ISA Server implements packet filtering. When packet filtering is enabled, ISA Server can statically control data on the external interface, evaluating inbound traffic before it has the chance to reach any resource

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If the data is allowed to pass the packet-filtering layer, it is passed to the Firewall and Web Proxy services, where ISA Server rules are processed to determine if the request should be serviced.

## **ISA Server protects three types of clients**

- **Firewall clients**
  - Firewall clients are computers that have Firewall Client software installed and enabled
  - Requests from firewall clients are directed to the Firewall service on the ISA Server computer to determine if access is allowed
  - They may be filtered by application filters and other add-ins. If the Firewall client requests an Hypertext Transfer Protocol (HTTP) object, then the HTTP redirector redirects the request to the Web Proxy service
  - The Web Proxy service may also cache the requested object or serve the object from the ISA Server cache
  
- **SecureNAT clients**
  - Secure network address translation (SecureNAT) clients are computers that do not have Firewall Client installed
  - Requests from SecureNAT clients are directed first to the network address translation (NAT) driver, which substitutes a global Internet Protocol (IP) address that is valid on the Internet for the internal IP address of the SecureNAT client
  - The client request is then directed to the Firewall service to determine if access is allowed. Finally, the request may be filtered by application filters and other extensions
  - If the SecureNAT client requests an HTTP object, then the HTTP redirector redirects the request to the Web Proxy service
  - The Web Proxy service may also cache the requested object or deliver the object from the ISA Server cache
  
- **Web Proxy clients**
  - Web Proxy clients are any CERN-compatible Web application
  - Requests from Web Proxy clients are directed to the Web Proxy service on the ISA Server computer to determine if access is allowed
  - The Web Proxy service may also cache the requested object or serve the object from the ISA Server cache

Both Firewall client computers and SecureNAT client computers might also be Web Proxy clients. If the Web application on the computer is configured explicitly to use the ISA Server, then all Web requests are sent directly to the Web Proxy service, including HTTP, File Transfer Protocol (FTP), Secure HTTP (HTTPS), and Gopher. All other requests are handled first by the Firewall service

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## Great Information From Microsoft

### [Internet Security and Acceleration Server 2000 Evaluation Edition is Now Available](#)

Download ISA Server today and evaluate the rich features and functionality for improving network performance and security

### [Microsoft Internet Security and Acceleration Server 2000 \(ISA\) Technical Overview](#)

Read about how ISA Server the extensible enterprise firewall and Web cache server that integrates with the Microsoft Windows 2000 operating system can be used to enhance network security, enforce consistent Internet usage policy, accelerate Internet access, and maximize employee productivity for organizations of all sizes.

### [ISA Server Breaks Security Ground](#)

If you're looking for the right firewall for your enterprise, add the ISA Server to the list of contenders.

### [Find out more about Microsoft Internet Security & Acceleration Server 2000](#)

Whether you are looking to implement an enterprise class firewall to secure your network, or to accelerate access to Web content, ISA Server provides an easy-to-manage, extensible platform.

### [Microsoft Internet Security and Acceleration Server Online Seminar](#)

How do you leverage the Internet but mitigate the associated risks? This seminar provides an overview of how ISA answers this question.

### [Technical Questions and Answers for Internet Security & Acceleration Server 2000](#)

An FAQ about Internet Security & Acceleration Server 2000.

### [The Deployment of Internet Security and Acceleration Server 2000 Enterprise Edition](#)

Discover a faster response to security problems with Microsoft's ISA Server. In this online seminar, you'll find out how careful planning pays off, and how quick and easy it is to enable intrusion detection.

### [Deploying the Secure Firewall, Proxy, and Web Cache at Microsoft](#)

Meet your performance, management, and scalability needs for high-volume Internet traffic environments with ISA Server centralized server management, multiple levels of access policy, and fault tolerance.

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### **[Microsoft Internet Security and Acceleration Server 2000 Enterprise Edition - Installation and Deployment Guide](#)**

Plan your implementation of Enterprise Edition. Find detailed procedures on the installation process, checklists for post-installation configuration, and detailed sample scenarios of how ISA Server might be used in your network.

### **[Microsoft ISA Server 2000, Standard Edition - Installation and Deployment Guide](#)**

Plan your implementation of Standard Edition. Find detailed procedures on the installation process, checklists for post-installation configuration, and detailed sample scenarios of how ISA Server might be used in your network. Includes a chapter on how to upgrade to Enterprise Edition

### **[MTB Lab: Administering Microsoft Internet Security and Acceleration \(ISA\) Server 2000](#)**

This lab is intended to familiarize you with the major security, performance, and management features of ISA Server. It does so by walking the reader through how to make administrative settings based on brief, real-world scenarios.

### **[ISA Server 2000 Product Documentation](#)**

View the product documentation for ISA Server 2000.

### **[ISA Event Messages](#)**

Internet Security and Acceleration Server records events that occur during its operation. This section provides information about those ISA Server events.

### **[Internet Security & Acceleration Server Newsgroups](#)**

Join one of the ISA public newsgroups and share your ideas and questions.

Be sure to visit the very comprehensive guide on [Cramsession](#) as well and between all these resources, you should do well.

**Good Luck!**

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