Contents

List of Figures .................................................................................. 5
List of Tables .................................................................................. 7

Chapter 1  Introduction ....................................................................... 9
- Websense Components ................................................................. 11
- Reporting Components ............................................................... 14

Chapter 2  General Deployment Recommendations .......................... 17
- Operating system requirements .................................................. 18
- VMware support ........................................................................ 25
  - Network considerations ......................................................... 25
  - System recommendations ......................................................... 26
  - Deployment configurations ..................................................... 26
- Component limits ....................................................................... 27
- Component suggestions ............................................................... 28
  - Network considerations ......................................................... 28
- Network Agent suggestions ....................................................... 29
  - Number of Filtering Services allowed per Policy Server ........... 29
- Required external resources ....................................................... 31
  - Supported directory services .................................................... 31
- Deploying transparent identification agents .................................. 32
  - Combining transparent identification agents ............................. 33
- Maximizing system performance ................................................. 34
  - Network Agent ....................................................................... 35
  - HTTP reporting ...................................................................... 35
  - Database Engine ...................................................................... 36
  - Log Database disk space recommendations ............................. 37
- Stand-Alone Edition ................................................................. 40
- Remote Filtering ................................................................. 43
- Supported integrations .............................................................. 45

Chapter 3  Deploying Network Agent .................................................. 47
- Network Agent ........................................................................ 47
  - Network Agent settings ........................................................ 48
  - Network Agent location ......................................................... 49
### Contents

- Single-segment network ........................................... 50
- Multiple-segment network ........................................ 51
  - Deploying multiple Network Agents .......................... 51
  - Central Network Agent placement .............................. 52
  - Distributed Network Agent placement ....................... 53
- Hub configuration .................................................. 54
- Switched networks with a single Network Agent .............. 55
  - Switched networks with multiple Network Agents ........... 58
- Gateway configuration ............................................ 59
- Using multiple NICs ................................................ 61
- NAT and Network Agent deployment .............................. 62

**Chapter 4**

**Integration Deployment** ........................................ 63

- Websense Content Gateway ........................................ 63
- Cisco deployment ................................................... 66
  - Cisco Content Engine ........................................... 67
  - Cisco IOS Routers ................................................ 68
- Check Point .......................................................... 69
  - Simple ............................................................. 69
  - Distributed ....................................................... 70
- Microsoft ISA Server ............................................. 71
  - Single Microsoft ISA Server configuration ................... 72
  - Array configuration ............................................... 74
- Squid Web Proxy Cache deployment ............................... 76
  - Single Squid Web Proxy Cache configuration .................. 76
  - Array configuration ............................................... 78
- NetCache integration .............................................. 80
- Universal integration .............................................. 81
- Citrix ............................................................... 82

**Index** .................................................................. 83
List of Figures

Figure 1, Example of Remote Filtering Deployment .......................... 44
Figure 2, Websense software in a single-segment network ............. 50
Figure 3, Websense software in a multiple-segment network ....... 52
Figure 4, Multiple Network Agents in a multiple-segment network .. 53
Figure 5, Network Agent connected to a hub ............................... 54
Figure 6, Simple deployment in a switched environment ............... 55
Figure 7, Multiple subnets in a switched environment .................. 56
Figure 8, Switched environment with a remote office connection .... 57
Figure 9, Multiple Network Agents in a switched environment ....... 58
Figure 10, Network Agent installed on the gateway ..................... 59
Figure 11, Network Agent deployed with Websense Content Gateway ... 60
Figure 12, Dual NIC configuration ........................................... 62
Figure 13, Integration with Websense Content Gateway ............... 65
Figure 14, Common Windows Network Configuration for Cisco PIX Firewall or ASA ............................................. 66
Figure 15, Common Windows network configuration for Cisco Content Engine 67
Figure 16, Common Windows network configuration for Cisco IOS Routers ... 68
Figure 17, Simple network configuration ................................... 69
Figure 18, Multiple-Segment network configuration .................... 70
Figure 19, Filtering components installed with Microsoft ISA Server ... 72
Figure 20, Filtering components installed separately from Microsoft ISA Server 73
Figure 21, Microsoft ISA Server array configuration #1 ............... 74
Figure 22, Microsoft ISA Server array configuration #2 ............... 75
Figure 23, Filtering components installed with Squid Web Proxy Cache ... 76
Figure 24, Filtering components and Squid Web Proxy Cache on separate machines ................................................ 77
Figure 25, Squid Web Proxy Cache array configuration #1 ............ 78
Figure 26, Squid Web Proxy Cache array configuration #2 ............ 79
Figure 27, Common network configuration ................................. 80
Figure 28, Common network configuration ................................. 81
Figure 29, Citrix integration .................................................. 82
List of Tables

Table 1, Websense Components .................................................................11
Table 2, Reporting Components ...............................................................14
Table 3, Components and Required Software .........................................18
Table 4, Operating Systems .................................................................24
Table 5, Distributed Layout .................................................................27
Table 6, Deploying Multiple Transparent ID Agents ..........................33
Table 7, Stand-Alone System Recommendations ..................................41
Table 8, Remote Filtering Server System Recommendations .............43
Table 9, Supported Integrations ...........................................................45
Introduction

Use this guide to plan your Websense software deployment before installation. The guide provides an overview of how Websense software can be deployed in a network, as well as operating system and hardware requirements.

This guide applies to Websense Web Security and Websense Web Filter, Version 7.1. References to Websense software or Websense Web Security include both products, unless otherwise indicated.

Websense software consists of components that work together to monitor Internet requests, log activity, apply Internet usage filters, and report on activity. Websense components can be installed together on one machine, or distributed across multiple machines. The appropriate deployment is determined by the network size and configuration, Internet request volume, hardware available, and filtering needs.

This manual provides system recommendations to optimize Websense component performance. Performance can also be improved by using more powerful machines for resource-intensive components.

This chapter introduces the Websense filtering and reporting components. See also:

- **Chapter 2: General Deployment Recommendations**—operating system requirements for running Websense components, component limits, tips for maximizing performance, plus recommendations for deploying transparent identification agents, Remote Filtering, and the Stand-Alone Edition. Version requirements are also included for various integrations.

- **Chapter 3: Deploying Network Agent**—information for deploying across single and multiple segment networks. Also provides Network Agent placement details; settings; and relationship to hubs, switches, and gateways.

- **Chapter 4: Integration Deployment**—overview of deploying Websense software with firewalls, proxy servers, caching applications, network appliances, or other integration products or devices.

Note

The technical papers and other documents mentioned in this guide are available from the Documentation > Planning, Installation, and Upgrade folder in the Websense Knowledge Base (www.websense.com/docs).
A series of supplements to this document provide deployment and hardware recommendations based on network size:

- Small network: 1 – 500 users, or 1 – 25 requests/second
- Medium network: 500 – 2,500 users, or 25 – 125 requests/second
- Large network: 2,500 – 10,000 users, or 125 – 500 requests/second
- Enterprise network: 10,000 – 25,000 users, or 500 – 1250 requests/second
- Very large enterprise network: 25,000+ users, or more than 1250 requests/second

Requests per second estimates are based on average usage with “medium”—neither light nor heavy—Internet access needs.

---

**Note**

Deployment recommendations allow for some network growth and an increase in Internet requests.

As your network reaches the upper limits of its size classification (small, medium, and so on), review the deployment documents to ensure an optimal system configuration.

---

Deploying in a distributed environment is the topic of another supplement. A distributed enterprise can have any number of remote offices/workers located within a single region or across the globe. The challenge of a decentralized network is providing consistent, cost-effective Internet content filtering across all remote locations.

A deployment supplement is also included for Websense Content Gateway. The gateway provides Web and proxy caching, dynamic classification of Web sites, Web 2.0 categorization, and an optional SSL manager. See the Websense Content Gateway documentation for more information on this product.

---

**Note**

Please contact Websense Sales Engineering for assistance in designing your Websense software deployment. A Sales Engineer can help you optimize Websense component deployment and understand the associated hardware needs.
Websense Components

- Table 1 provides a brief description of the Websense filtering components. This table groups the components into core (included in a standard deployment) and optional.
- Table 2, on page 14, provides a brief description of the Websense reporting components.

Review these descriptions to better understand the interaction between components. See Table 3, on page 18, and Table 4, on page 24, for information on the operating system versions needed to run these components.

NOTE
Certain integrations include Websense plug-ins. These are discussed in Table 9, on page 45.

Table 1 Websense Components

<table>
<thead>
<tr>
<th>Component</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Core Components</strong></td>
<td></td>
</tr>
</tbody>
</table>
| Policy Database | Stores global Websense software settings (configured in Websense Manager) and policy information (including clients, filters, and filter components)  
• Is installed in the background together with Policy Broker  
• Settings specific to a single Policy Server instance are stored separately.  
In multiple Policy Server environments, a single Policy Database holds policy and general configuration data for multiple Policy Servers. |
| Policy Broker   | Manages requests from Websense components for policy and general configuration information stored in the Policy Database. A deployment can have only 1 Policy Broker, which is bundled with Policy Database.               |
| Policy Server   | • Identifies and tracks the location and status of other Websense components  
• Logs event messages for Websense components  
• Stores configuration information specific to a single Policy Server instance  
• Communicates configuration data to Filtering Service for use in filtering Internet requests  
Policy and most configuration settings are shared between Policy Servers that share a Policy Database.  
Policy Server is typically installed on the same machine as Filtering Service. Large or distributed environments can include multiple Policy Servers. Each Policy Server may communicate with up to 10 Filtering Services. |
Introduction

Websense Web Security and Websense Web Filter

Filtering Service
Works with Network Agent or an integration product to provide Internet filtering. When a user requests a site, Filtering Service receives the request and determines which policy applies.
- Filtering Service must be running for Internet requests to be filtered and logged.
- Each Filtering Service instance downloads its own copy of the Websense Master Database.
Filtering Service is typically installed on the same machine as Policy Server. Large or distributed environments may include multiple Filtering Service instances, up to 10 per Policy Server.

Network Agent
Works with Filtering Service to enable protocol management, bandwidth-based filtering, and reporting on bytes transferred
- In a stand-alone deployment, enables HTTP and non-HTTP filtering
- In an integrated deployment, enables filtering for protocols not managed by your integration product and provides enhanced logging information
A deployment may have up to 4 Network Agents per Filtering Service.

Master Database
- Includes millions of Web sites, sorted into more than 90 categories and subcategories
- Contains more than 100 protocol definitions for use in filtering protocols
Download the Websense Master Database to activate Internet filtering, and make sure that the database is kept up to date. If the Master Database is more than 2 weeks old, no filtering can occur.
A copy of the Master Database is downloaded by each Filtering Service instance.

Websense Manager
Serves as the configuration and management interface to Websense software. A deployment can have only 1 Websense Manager per Policy Broker.
Use Websense Manager to define and customize Internet access policies, add or remove filtering clients, configure Websense software components, and more.
In a Windows installation, Websense Manager also provides reporting functionality.

Usage Monitor
Enables alerting based on Internet usage
Usage Monitor tracks URL category and protocol access, and generates alert messages according to the alerting behavior you have configured.
Alerts can be sent via email or on-screen display, or an SNMP alert can be sent to an SNMP Trap Server.
A deployment can have only 1 Usage Monitor per Policy Server.

<table>
<thead>
<tr>
<th>Component</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filtering Service</td>
<td>Works with Network Agent or an integration product to provide Internet filtering. When a user requests a site, Filtering Service receives the request and determines which policy applies.</td>
</tr>
<tr>
<td></td>
<td>• Filtering Service must be running for Internet requests to be filtered and logged.</td>
</tr>
<tr>
<td></td>
<td>• Each Filtering Service instance downloads its own copy of the Websense Master Database.</td>
</tr>
<tr>
<td></td>
<td>Filtering Service is typically installed on the same machine as Policy Server. Large or distributed environments may include multiple Filtering Service instances, up to 10 per Policy Server.</td>
</tr>
<tr>
<td>Network Agent</td>
<td>Works with Filtering Service to enable protocol management, bandwidth-based filtering, and reporting on bytes transferred</td>
</tr>
<tr>
<td></td>
<td>• In a stand-alone deployment, enables HTTP and non-HTTP filtering</td>
</tr>
<tr>
<td></td>
<td>• In an integrated deployment, enables filtering for protocols not managed by your integration product and provides enhanced logging information</td>
</tr>
<tr>
<td></td>
<td>A deployment may have up to 4 Network Agents per Filtering Service.</td>
</tr>
<tr>
<td>Master Database</td>
<td>• Includes millions of Web sites, sorted into more than 90 categories and subcategories</td>
</tr>
<tr>
<td></td>
<td>• Contains more than 100 protocol definitions for use in filtering protocols</td>
</tr>
<tr>
<td></td>
<td>Download the Websense Master Database to activate Internet filtering, and make sure that the database is kept up to date. If the Master Database is more than 2 weeks old, no filtering can occur.</td>
</tr>
<tr>
<td></td>
<td>A copy of the Master Database is downloaded by each Filtering Service instance.</td>
</tr>
<tr>
<td>Websense Manager</td>
<td>Serves as the configuration and management interface to Websense software. A deployment can have only 1 Websense Manager per Policy Broker.</td>
</tr>
<tr>
<td></td>
<td>Use Websense Manager to define and customize Internet access policies, add or remove filtering clients, configure Websense software components, and more.</td>
</tr>
<tr>
<td></td>
<td>In a Windows installation, Websense Manager also provides reporting functionality.</td>
</tr>
<tr>
<td>Usage Monitor</td>
<td>Enables alerting based on Internet usage</td>
</tr>
<tr>
<td></td>
<td>Usage Monitor tracks URL category and protocol access, and generates alert messages according to the alerting behavior you have configured.</td>
</tr>
<tr>
<td></td>
<td>Alerts can be sent via email or on-screen display, or an SNMP alert can be sent to an SNMP Trap Server.</td>
</tr>
<tr>
<td></td>
<td>A deployment can have only 1 Usage Monitor per Policy Server.</td>
</tr>
</tbody>
</table>
Introduction

User Service Communicates with an LDAP or NTLM-based directory service to apply filtering policies based on users, groups, domains, and organizational units.
A deployment can have only 1 User Service per Policy Server. The directory service is not a Websense product or component.

Optional Components

**DC Agent**
- Offers transparent user identification for users in a Windows-based directory service.
- Polls domain controllers in the network to transparently identify users.
- Communicates with User Service to provide up-to-date user logon session information to Websense software for use in filtering.

**eDirectory Agent**
- Works with Novell eDirectory to transparently identify users.
- Gathers user logon session information from Novell eDirectory, which authenticates users logging on to the network.
- Associates each authenticated user with an IP address, and then works with User Service to supply the information to Filtering Service.

**Logon Agent**
- Provides unsurpassed accuracy in transparent user identification in Linux and Windows networks.
- Does not rely on a directory service or other intermediary when capturing user logon sessions.
- Detects user logon sessions as they occur.
Logon Agent communicates with the logon application on client machines to ensure that individual user logon sessions are captured and processed directly by Websense software.

**Logon Application**
- Runs from a logon script on a domain controller to capture logon sessions as users log on to, or log off of, Windows domains in the network. The application, LogonApp.exe, identifies the user and sends the information to the Logon Agent.

**RADIUS Agent**
- Enables transparent identification of users who use a dial-up, Virtual Private Network (VPN), Digital Subscriber Line (DSL), or other remote connection to access the network.

**Remote Filtering Client**
- Resides on client machines outside the network firewall.
- Identifies the machines as clients to be filtered.
- Communicates with Remote Filtering Server, installed inside the organization’s firewall.

**Remote Filtering Server**
- Allows filtering of clients outside a network firewall.
- Acts as a proxy that accepts requests from Remote Filtering Client and submits them for filtering.
- Communicates with Filtering Service to provide Internet access management of remote machines.
Websense Web Security and Websense Web Filter Reporting Components

All reporting components rely on the Websense filtering components. Install reporting components after installing the filtering components.

The filtering components (including Filtering Service, Policy Server, and User Service) must be running in order for complete log records to be generated.

Installation instructions for Websense reporting components can be found in the *Installation Guide*. Consult the Websense Manager Help for information about using Websense reporting tools.

### Table 1 Websense Components

<table>
<thead>
<tr>
<th>Component</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linking Service</td>
<td>Allows Websense Data Security Suite to access user information and URL categorization details from Websense Web security software.</td>
</tr>
</tbody>
</table>
| Filter Plug-in       | • When installed with Filtering Service on a Microsoft ISA Server, allows the ISA server to communicate with Filtering Service  
                      | • When installed on a Squid Web Proxy, allows the Squid proxy to communicate with Filtering Service |

1. Websense, Inc. supports certain combinations of transparent identification agents within the same network, or on the same machine. For more information, see *Deploying transparent identification agents*, page 32.

2. Running eDirectory Agent and DC Agent in the same deployment is not currently supported.

### Reporting Components

All reporting components rely on the Websense filtering components. Install reporting components after installing the filtering components.

The filtering components (including Filtering Service, Policy Server, and User Service) must be running in order for complete log records to be generated.

Installation instructions for Websense reporting components can be found in the *Installation Guide*. Consult the Websense Manager Help for information about using Websense reporting tools.

### Table 2 Reporting Components

<table>
<thead>
<tr>
<th>Component</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Database Components</strong></td>
<td></td>
</tr>
</tbody>
</table>
| Log Database          | Stores Internet request data collected by Log Server for use by Websense reporting tools  
                      | The database is created when Log Server is installed.  
                      | • In Windows environments, reporting components require either Microsoft® SQL Server or MSDE. (MSDE can be installed from the Websense Web site.)  
                      | Note that SQL Server Express is not supported, and that MSDE is not supported on Windows 2008.  
                      | • MySQL is required for Explorer for Linux. |

In Windows environments, reporting components require either Microsoft® SQL Server or MSDE. (MSDE can be installed from the Websense Web site.)

Note that SQL Server Express is not supported, and that MSDE is not supported on Windows 2008.

MySQL is required for Explorer for Linux.
Log Server, or Linux Log Server

Log Server, or Linux Log Server is required for Websense reporting. It logs Internet request data, including:

- The request source
- The category or protocol associated with the request
- Whether the request was permitted or blocked
- Whether keyword blocking, file type blocking, quota allocations, bandwidth levels, or password protection were applied

Log Server can log to only one Log Database at a time, and only one Log Server can be installed for each Policy Server. Log Server must be installed on a Windows machine to enable investigative and presentation reports, and Today and History page charts, in Websense Manager. Environments with a high volume of Internet activity should place Log Server on a separate machine. Log Server processing can consume considerable system resources.

### Reporting applications

**Websense Manager**

When Websense Manager and Log Server are installed on Windows machines, Websense Manager includes multiple, graphical reporting options:

- Charts on the Today and History pages show current and recent Internet activity.
- Investigative reports provide an interactive way to view information in the Log Database.
- Presentation reports include a series of templates that you can use to generate graphical reports.

Real-time reporting features are not available when Websense Manager is installed on Linux.

**Explorer for Linux**

Generates a variety of easy-to-understand detail and summary reports using data from the Log Database. Explorer for Linux requires:

- Apache 2.0.50 (Web server; included in the installation package)
- Firefox 2.x. or later (Web browser)

### Table 2 Reporting Components

<table>
<thead>
<tr>
<th>Component</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log Server, or Linux Log Server</td>
<td>Required for Websense reporting. Logs Internet request data, including: The request source, the category or protocol associated with the request, whether the request was permitted or blocked, whether keyword blocking, file type blocking, quota allocations, bandwidth levels, or password protection were applied. Log Server can log to only one Log Database at a time, and only one Log Server can be installed for each Policy Server. Log Server must be installed on a Windows machine to enable investigative and presentation reports, and Today and History page charts, in Websense Manager. Environments with a high volume of Internet activity should place Log Server on a separate machine. Log Server processing can consume considerable system resources.</td>
</tr>
<tr>
<td>Websense Manager</td>
<td>When Websense Manager and Log Server are installed on Windows machines, Websense Manager includes multiple, graphical reporting options: Charts on the Today and History pages show current and recent Internet activity. Investigative reports provide an interactive way to view information in the Log Database. Presentation reports include a series of templates that you can use to generate graphical reports. Real-time reporting features are not available when Websense Manager is installed on Linux.</td>
</tr>
<tr>
<td>Explorer for Linux</td>
<td>Generates a variety of easy-to-understand detail and summary reports using data from the Log Database. Explorer for Linux requires: Apache 2.0.50 (Web server; included in the installation package). Firefox 2.x. or later (Web browser).</td>
</tr>
</tbody>
</table>
Before deploying Websense software, ensure that your hardware and network configuration meet the recommendations provided in this document. This chapter focuses on:

- Operating system requirements
- VMware support
- Component limits
- Component suggestions
- Required external resources
- Deploying transparent identification agents
- Maximizing system performance
- Stand-Alone Edition
- Remote Filtering
- Supported integrations

See *Websense Components, page 11*, for descriptions of the Websense filtering and reporting components. Note that Websense filtering is based on protocols (like HTTP and FTP), not on the operating system of the computer being filtered.

Supplements to this document provide recommendations for deploying Websense filtering and reporting software in networks of different sizes and in distributed networks, and also for deploying Websense Content Gateway.

---

**Note**

Websense software supports only TCP/IP-based networks. If your network uses both TCP/IP and non-IP based network protocols, only users in the TCP/IP portion of the network are filtered.
Operating system requirements

The tables in this section list supported operating systems and required applications for the Websense components.

**Note**
Websense components have been successfully tested on the operating systems listed below. The components may also run on subsequent versions of these operating systems, but testing was not completed before publication.

Table 3 lists each component and its supported operating systems, along with other software required to run the component. Table 4, on page 24, organizes the requirements by operating system.

**Important**
If you install DC Agent, Logon Agent, or User Service on Windows 2008, you must activate the Windows Computer Browser service.

If you use Active Directory 2008 (native mode) to authenticate users, you must activate the Windows Computer Browser service on the machine running Active Directory. DC Agent, Logon Agent, and User Service may need to run as domain accounts with rights to access the directory.

Table 9, on page 45, lists the supported integration versions.

<table>
<thead>
<tr>
<th>Component</th>
<th>Supported Operating Systems</th>
<th>Other Required Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC Agent</td>
<td>• Windows Server 2008&lt;br&gt;• Windows Server 2003, R2 (Standard or Enterprise)&lt;br&gt;• Windows Server 2003, SP1 or SP2 (Standard or Enterprise)&lt;br&gt;• Windows Server 2003 (Standard or Enterprise)</td>
<td>One of these directory services:&lt;br&gt;• Windows Active Directory®&lt;br&gt;• Windows NT Directory</td>
</tr>
</tbody>
</table>
## General Deployment Recommendations

<table>
<thead>
<tr>
<th>Component</th>
<th>Supported Operating Systems</th>
<th>Other Required Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>eDirectory Agent</td>
<td>• Red Hat Enterprise Linux 5: Advanced Platform, base server, Desktop</td>
<td>• Novell eDirectory 8.51 or later</td>
</tr>
<tr>
<td></td>
<td>• Red Hat Enterprise Linux 4: AS, ES, and WS</td>
<td>• NMAS authentication is supported.</td>
</tr>
<tr>
<td></td>
<td>• Windows Server 2008</td>
<td>• Recommend Novell Client v4.83 or v4.9 (v4.81 and later are supported)</td>
</tr>
<tr>
<td></td>
<td>• Windows Server 2003, R2 (Standard or Enterprise)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Windows Server 2003, SP1 or SP2 (Standard or Enterprise)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Windows Server 2003 (Standard or Enterprise)</td>
<td></td>
</tr>
<tr>
<td>Explorer for Linux</td>
<td>• Red Hat Enterprise Linux 5: Advanced Platform, base server, Desktop</td>
<td>• Firefox 2 or 3</td>
</tr>
<tr>
<td>(Web server)</td>
<td>• Red Hat Enterprise Linux 4: AS, ES, and WS</td>
<td>• Apache HTTP Server 2.0.50 (included with the Websense software installation)</td>
</tr>
<tr>
<td>Filtering Service</td>
<td>• Red Hat Enterprise Linux 5: Advanced Platform, base server, Desktop</td>
<td>If Network Agent is used for protocol filtering and User Service is installed on a Linux</td>
</tr>
<tr>
<td></td>
<td>• Red Hat Enterprise Linux 4: AS, ES, and WS</td>
<td>machine, Samba client (v2.2.8a or later) is required on the User Service machine to</td>
</tr>
<tr>
<td></td>
<td>• Windows Server 2008</td>
<td>allow Windows clients to display protocol block messages.</td>
</tr>
<tr>
<td></td>
<td>• Windows Server 2003, R2 (Standard or Enterprise)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Windows Server 2003, SP1 or SP2 (Standard or Enterprise)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Windows Server 2003 (Standard or Enterprise)</td>
<td></td>
</tr>
<tr>
<td>Log Database (Windows)</td>
<td>• The Log Database is dependent on the database engine (Microsoft SQL Server or MSDE), and</td>
<td>One of these must be installed:</td>
</tr>
<tr>
<td></td>
<td>not the operating system version.</td>
<td>• Microsoft SQL Server 2005 SP2 or SP 3 (Workgroup, Standard, Enterprise, or 64-bit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>edition) (recommended)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Microsoft SQL Server 2000 SP4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• MSDE 2000 SP4</td>
</tr>
<tr>
<td>Log Database (Linux)</td>
<td>• When running Explorer for Linux, the Log Database depends on MySQL.</td>
<td>• MySQL 5.0</td>
</tr>
</tbody>
</table>

### Table 3 Components and Required Software
### General Deployment Recommendations

<table>
<thead>
<tr>
<th>Component</th>
<th>Supported Operating Systems</th>
<th>Other Required Software</th>
</tr>
</thead>
</table>
| Log Server (Windows) | • Windows Server 2008  
• Windows Server 2003, R2 (Standard or Enterprise)  
• Windows Server 2003, SP1 or SP2 (Standard or Enterprise)  
• Windows Server 2003 (Standard or Enterprise) | • Internet Explorer 7  
• Firefox 2 or 3  
One of these databases:  
• Microsoft SQL Server 2005 SP2 or SP 3 (Workgroup, Standard, Enterprise, or 64-bit* edition) (recommended)  
• Microsoft SQL Server 2000 SP4  
• MSDE 2000 SP4 (note: not supported on Window Server 2008)  
* If using 64-bit SQL Server, Log Server must be installed on a machine separate from SQL Server because it does not support 64-bit operating systems. |
| Log Server (Linux) | • Red Hat Enterprise Linux 5: Advanced Platform, base server, Desktop  
• Red Hat Enterprise Linux 4: AS, ES, and WS | • MySQL 5.0 |
| Logon Agent | • Red Hat Enterprise Linux 5: Advanced Platform, base server, Desktop  
• Red Hat Enterprise Linux 4: AS, ES, and WS  
• Windows Server 2008 (32-bit edition only)  
• Windows Server 2003, R2 (Standard or Enterprise)  
• Windows Server 2003, SP1 or SP2 (Standard or Enterprise)  
• Windows Server 2003 (Standard or Enterprise) | Can be used with:  
• Windows NT Directory (NTLM)  
• Windows Active Directory (native or mixed mode)  
• Other LDAP-based directory services |
### General Deployment Recommendations

#### Logon Application
- Windows XP Professional, SP1 or SP2
- Windows Vista Ultimate
- Windows Vista Business
- Windows Vista Enterprise
- Windows Server 2008
- Windows Server 2003 (Standard or Enterprise)
- Windows Server 2003, R2 (Standard or Enterprise)
- Windows Server 2003, SP1 or SP2 (Standard or Enterprise)
- Windows 2000, SP3 or later (Professional or Server)
- Windows NT 4.0 SP 6a (Workstation or Server)

#### Network Agent
- Red Hat Enterprise Linux 5: Advanced Platform, base server, Desktop
- Red Hat Enterprise Linux 4: AS, ES, and WS
- Windows Server 2008
- Windows Server 2003, R2 (Standard or Enterprise)
- Windows Server 2003, SP1 or SP2 (Standard or Enterprise)
- Windows Server 2003 (Standard or Enterprise)

#### Policy Broker
- Red Hat Enterprise Linux 5: Advanced Platform, base server, Desktop
- Red Hat Enterprise Linux 4: AS, ES, and WS
- Windows Server 2008
- Windows Server 2003, R2 (Standard or Enterprise)
- Windows Server 2003, SP1 or SP2 (Standard or Enterprise)
- Windows Server 2003 (Standard or Enterprise)

---

**Table 3 Components and Required Software**

<table>
<thead>
<tr>
<th>Component</th>
<th>Supported Operating Systems</th>
<th>Other Required Software</th>
</tr>
</thead>
</table>
| Logon Application  | • Windows XP Professional, SP1 or SP2  
                    • Windows Vista Ultimate  
                    • Windows Vista Business  
                    • Windows Vista Enterprise  
                    • Windows Server 2008  
                    • Windows Server 2003 (Standard or Enterprise)  
                    • Windows Server 2003, R2 (Standard or Enterprise)  
                    • Windows Server 2003, SP1 or SP2 (Standard or Enterprise)  
                    • Windows 2000, SP3 or later (Professional or Server)  
                    • Windows NT 4.0 SP 6a (Workstation or Server)  | Samba client (v2.2.8a or later) is required on the machine running User Service to enable Windows clients to display protocol block messages, if Network Agent is used for protocol filtering and User Service is installed on a Linux machine. |
| Network Agent      | • Red Hat Enterprise Linux 5: Advanced Platform, base server, Desktop  
                    • Red Hat Enterprise Linux 4: AS, ES, and WS  
                    • Windows Server 2008  
                    • Windows Server 2003, R2 (Standard or Enterprise)  
                    • Windows Server 2003, SP1 or SP2 (Standard or Enterprise)  
                    • Windows Server 2003 (Standard or Enterprise)  |                                                      |
| Policy Broker      | • Red Hat Enterprise Linux 5: Advanced Platform, base server, Desktop  
                    • Red Hat Enterprise Linux 4: AS, ES, and WS  
                    • Windows Server 2008  
                    • Windows Server 2003, R2 (Standard or Enterprise)  
                    • Windows Server 2003, SP1 or SP2 (Standard or Enterprise)  
                    • Windows Server 2003 (Standard or Enterprise)  |                                                      |
### General Deployment Recommendations

#### Websense Web Security and Websense Web Filter

<table>
<thead>
<tr>
<th>Component</th>
<th>Supported Operating Systems</th>
<th>Other Required Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy Server</td>
<td>• Red Hat Enterprise Linux 5: Advanced Platform, base server, Desktop&lt;br&gt;• Red Hat Enterprise Linux 4: AS, ES, and WS&lt;br&gt;• Windows Server 2008&lt;br&gt;• Windows Server 2003, R2 (Standard or Enterprise)&lt;br&gt;• Windows Server 2003, SP1 or SP2 (Standard or Enterprise)&lt;br&gt;• Windows Server 2003 (Standard or Enterprise)</td>
<td>Policy Broker&lt;br&gt;Policy Database</td>
</tr>
<tr>
<td>RADIUS Agent</td>
<td>• Red Hat Enterprise Linux 5: Advanced Platform, base server, Desktop&lt;br&gt;• Red Hat Enterprise Linux 4: AS, ES, and WS&lt;br&gt;• Windows Server 2008&lt;br&gt;• Windows Server 2003, R2 (Standard or Enterprise)&lt;br&gt;• Windows Server 2003 SP1 or SP2 (Standard or Enterprise)</td>
<td>Most standard RADIUS servers are supported.&lt;br&gt;The following servers have been tested:&lt;br&gt;• Livingston (Lucent) 2.x&lt;br&gt;• Cistron RADIUS server&lt;br&gt;• Merit AAA&lt;br&gt;• Microsoft IAS</td>
</tr>
<tr>
<td>Remote Filtering Client</td>
<td>• Windows XP Professional with SP1, SP2, or SP3&lt;br&gt;• Windows Vista Ultimate&lt;br&gt;• Windows Vista Business&lt;br&gt;• Windows Vista Enterprise&lt;br&gt;• Windows Server 2008&lt;br&gt;• Windows Server 2003, R2 (Standard or Enterprise)&lt;br&gt;• Windows Server 2003, SP1 or SP2 (Standard or Enterprise)&lt;br&gt;• Windows Server 2003 (Standard or Enterprise)&lt;br&gt;• Windows 2000 with SP3 or later (Professional, Server, Advanced Server)</td>
<td></td>
</tr>
<tr>
<td>Remote Filtering Server</td>
<td>• Red Hat Enterprise Linux 5: Advanced Platform, base server, Desktop&lt;br&gt;• Red Hat Enterprise Linux 4: AS, ES, and WS&lt;br&gt;• Windows Server 2008&lt;br&gt;• Windows Server 2003, R2 (Standard or Enterprise)&lt;br&gt;• Windows Server 2003, SP1 or SP2 (Standard or Enterprise)</td>
<td></td>
</tr>
</tbody>
</table>
### General Deployment Recommendations

#### Usage Monitor
- Red Hat Enterprise Linux 5: Advanced Platform, base server, Desktop
- Red Hat Enterprise Linux 4: AS, ES, and WS
- Windows Server 2008
- Windows Server 2003, R2 (Standard or Enterprise)
- Windows Server 2003, SP1 or SP2 (Standard or Enterprise)
- Windows Server 2003 (Standard or Enterprise)

#### User Service
- Red Hat Enterprise Linux 5: Advanced Platform, base server, Desktop
- Red Hat Enterprise Linux 4: AS, ES, and WS
- Windows Server 2008
- Windows Server 2003, R2 (Standard or Enterprise)
- Windows Server 2003, SP1 or SP2 (Standard or Enterprise)
- Windows Server 2003 (Standard or Enterprise)

#### Websense Manager
- Red Hat Enterprise Linux 5: Advanced Platform, base server, Desktop
- Red Hat Enterprise Linux 4: AS, ES, and WS
- Windows Server 2008
- Windows Server 2003, R2 (Standard or Enterprise)
- Windows Server 2003, SP1 or SP2 (Standard or Enterprise)
- Windows Server 2003 (Standard or Enterprise)

<table>
<thead>
<tr>
<th>Component</th>
<th>Supported Operating Systems</th>
<th>Other Required Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>Usage Monitor</td>
<td>• Red Hat Enterprise Linux 5: Advanced Platform, base server, Desktop&lt;br&gt;</td>
<td>Supports:&lt;br&gt;• NTLM-based directory services&lt;br&gt;• Active Directory&lt;br&gt;• Sun Java™ System Directory Server, 4.2 and 5.2&lt;br&gt;• Novell Directory Services®/eDirectory, 8.51 and later&lt;br&gt;Samba client (v2.2.8a or later) is required to enable Windows clients to display protocol block messages, if Network Agent is used for protocol filtering and User Service is installed on a Linux machine.</td>
</tr>
<tr>
<td>User Service</td>
<td>• Red Hat Enterprise Linux 5: Advanced Platform, base server, Desktop&lt;br&gt;</td>
<td></td>
</tr>
<tr>
<td>Websense Manager</td>
<td>• Red Hat Enterprise Linux 5: Advanced Platform, base server, Desktop&lt;br&gt;</td>
<td>• Internet Explorer 7 or Firefox 2 or 3&lt;br&gt;• Common Desktop Environment (CDE)&lt;br&gt;• Apache Tomcat 6.0.13 (installed automatically with Websense Manager)&lt;br&gt;• Adobe Flash Player 8 or later</td>
</tr>
</tbody>
</table>
Table 4 lists the operating systems on which the Websense components run.

### Table 4 Operating Systems

<table>
<thead>
<tr>
<th>Operating System</th>
<th>Component</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Microsoft Windows (32-bit versions supported only)</strong></td>
<td></td>
</tr>
<tr>
<td>Windows Server 2008</td>
<td>All Websense components:</td>
</tr>
<tr>
<td>Windows Server 2003, R2</td>
<td>• Log Database (Microsoft SQL Server or MSDE database engine; note: MSDE is not supported on Windows Server 2008)</td>
</tr>
<tr>
<td>Standard or Enterprise Editions</td>
<td>• DC Agent</td>
</tr>
<tr>
<td>Windows Server 2003, SP1 or SP2</td>
<td>• eDirectory Agent</td>
</tr>
<tr>
<td>Standard and Enterprise Editions (SP1 is required for Remote Filtering Server)</td>
<td>• Explorer</td>
</tr>
<tr>
<td>Windows Server 2003</td>
<td>• Filtering Plug-in</td>
</tr>
<tr>
<td>Standard and Enterprise Editions</td>
<td>• Filtering Service</td>
</tr>
<tr>
<td>Windows Vista Ultimate</td>
<td>• Linking Service</td>
</tr>
<tr>
<td>Windows Vista Business</td>
<td>• Log Server</td>
</tr>
<tr>
<td>Windows Vista Enterprise</td>
<td>• Logon Agent</td>
</tr>
<tr>
<td>Windows XP Professional</td>
<td>• Logon Application</td>
</tr>
<tr>
<td>Windows 2000 Professional, SP3 or later</td>
<td>• Network Agent</td>
</tr>
<tr>
<td>Windows NT Server or Workstation, 4.0 SP 6a</td>
<td>• Policy Broker</td>
</tr>
<tr>
<td></td>
<td>• Policy Server</td>
</tr>
<tr>
<td></td>
<td>• RADIUS Agent</td>
</tr>
<tr>
<td></td>
<td>• Remote Filtering Client</td>
</tr>
<tr>
<td></td>
<td>• Remote Filtering Server</td>
</tr>
<tr>
<td></td>
<td>• Reporter</td>
</tr>
<tr>
<td></td>
<td>• Usage Monitor</td>
</tr>
<tr>
<td></td>
<td>• User Service</td>
</tr>
<tr>
<td></td>
<td>• Websense Manager</td>
</tr>
</tbody>
</table>

For more information on installing the Websense components, see Chapter 4, “Installing and Configuring Websense.”

For a list of supported versions of databases, see Appendix B, “Database Requirements.”

For a list of supported versions of Websense components, see Appendix C, “Supported Components.”
General Deployment Recommendations

VMware support

Websense Web Security and Websense Web Filter are supported on VMware ESX Server. Installation, filtering, and reporting have been tested in a Windows 2003 Server environment, running on ESX Server versions 2.5.x and 3.x.

NOTE: Log Server and the Log Database are specifically not supported on VMware except for demonstration purposes.

This section discusses:

✦ Network considerations
✦ System recommendations
✦ Deployment configurations

Network considerations

Websense Network Agent requires that the network card (NIC) it uses for monitoring be set to promiscuous mode to see network traffic. The VMware virtual NIC must be configured for use by Network Agent.

To use bridged networking, each virtual machine must have its own IP address. In addition, VMware requires that if a virtual machine is configured to include multiple operating systems, each OS must have a unique network address, even if only one OS runs at a time.

<table>
<thead>
<tr>
<th>Operating System</th>
<th>Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red Hat Enterprise Linux 5: Advanced Platform, base server, Desktop</td>
<td>• Log Database (MySQL database engine)</td>
</tr>
<tr>
<td>Red Hat Enterprise Linux 4 AS (Advanced Server)</td>
<td>• eDirectory Agent</td>
</tr>
<tr>
<td>Red Hat Enterprise Linux 4 ES (Enterprise Server)</td>
<td>• Explorer for Linux</td>
</tr>
<tr>
<td>Red Hat Enterprise Linux 4 WS (Workstation)</td>
<td>• Filtering Plug-in</td>
</tr>
<tr>
<td>Red Hat Enterprise Linux 4 ES</td>
<td>• Filtering Service</td>
</tr>
<tr>
<td>Red Hat Enterprise Linux 4 WS</td>
<td>• Logon Agent</td>
</tr>
<tr>
<td>(Workstation)</td>
<td>• Network Agent</td>
</tr>
<tr>
<td>Red Hat Enterprise Linux 4 AS (Advanced Server)</td>
<td>• Policy Broker</td>
</tr>
<tr>
<td>Red Hat Enterprise Linux 4 ES</td>
<td>• Policy Server</td>
</tr>
<tr>
<td>Red Hat Enterprise Linux 4 WS</td>
<td>• RADIUS Agent</td>
</tr>
<tr>
<td>(Workstation)</td>
<td>• Remote Filtering Server</td>
</tr>
<tr>
<td>Red Hat Enterprise Linux 4 AS (Advanced Server)</td>
<td>• Unix Log Server</td>
</tr>
<tr>
<td>Red Hat Enterprise Linux 4 ES</td>
<td>• Usage Monitor</td>
</tr>
<tr>
<td>Red Hat Enterprise Linux 4 WS (Workstation)</td>
<td>• User Service</td>
</tr>
<tr>
<td>Red Hat Enterprise Linux 4 WS</td>
<td>• Websense Manager</td>
</tr>
</tbody>
</table>

Table 4 Operating Systems

Linux (32-bit versions supported only)
Consult your VMware documentation for more configuration information.

**IMPORTANT**
Microsoft does not support running SQL Server or MSDE on virtualization systems other than Microsoft’s.

To install Websense reporting components on a Windows operating system, the database engine must be installed and running on a separate machine.

To install Websense reporting components on a Linux operating system, refer to the Websense Explorer for UNIX Administrator’s Guide for system requirements.

---

**System recommendations**

The *Deployment Guide* supplements provide hard disk space and RAM recommendations for Websense components in specific environments. The VMware documentation provides recommendations for running VMware.

General recommendations for running Websense software on VMware include:

- RAID for fault tolerance
- Quad-Core Intel® Xeon® processor, 3.0 GHz or greater
- 8 GB of RAM
- 3 - 1 GB NICs are required; 4 - 1 GB NICs are recommended:
  - One NIC dedicated to the VMware management console
  - One NIC allocated for a virtual switch used to monitor traffic (stealth mode, without an IP address)
  - One NIC allocated for a virtual switch used for communication between Websense components
  - One NIC used by the VMware host system for other communication

These recommendations can vary with a higher volume of Internet requests.

No specific operating system is specified on which to run VMware, although testing with Websense software was done on Windows Server 2003, SP2.

---

**Deployment configurations**

In VMware environments, Websense components can be installed on separate virtual machines.

The following tables provide possible deployments for Websense software in a distributed environment.

The recommendations in these tables are for small networks, with up to approximately 2000 users. Hardware needs and component location may vary depending on the volume of Internet requests. For larger networks, more system resources or more
distribution of Websense components may be needed. For specific component deployment recommendations, see the Deployment Guide supplements.

**NOTE: Log Server and the Log Database are specifically not supported on VMware except for demonstration purposes, where they might be installed with Websense Manager.**

### Component limits

When deploying Websense software, these component limits must be considered:

- 1 Policy Broker per deployment
- 1 Websense Manager per Policy Broker
- 1 Log Server per Policy Server
- 1 User Service per Policy Server
- 1 Usage Monitor per Policy Server
- 1 Master Database for each Filtering Service
- 1 primary Remote Filtering Server per Filtering Service
Component suggestions

This section includes suggested component deployment ratios. The optimum deployment may vary based on network configuration and Internet traffic volume.

Larger systems (more than 1000 users) may require a more distributed deployment for load balancing and support of multiple languages.

- Multiple Network Agent instances may be required, for example, to detect outbound traffic on individual network segments.
- It may be appropriate to install multiple Filtering Service instances for load balancing. Some load balancing configurations allow the same user to be filtered by different Filtering Service installations, depending on the current load.

This section includes:

- **Network Agent suggestions**
- **Number of Filtering Services allowed per Policy Server**

For limits on transparent identification agents, see *Deploying transparent identification agents*, page 32.

For more information about the interaction of Websense components, see the *Installation Guide Supplement* for the integration used with your Websense software, and the Websense Manager Help.

Network considerations

To ensure effective filtering, Websense software must be installed so that:

- Filtering Service can receive HTTP requests from an integrated firewall, proxy server, or caching application, or Network Agent.
  - In a multi-segmented network, Filtering Service must be installed in a location where it can both receive and manage Internet requests from the integration product and communicate with Network Agent.
- Network Agent:
  - Must be deployed where it can see all internal Internet traffic for the machines that it is assigned to monitor.
  - Can be installed on a dedicated machine to increase overall throughput.
  - Must have bidirectional visibility into Internet traffic to filter non-HTTP requests (such as instant messaging, chat, streaming media, and other Internet applications and protocols).
  - Multiple instances of Network Agent may be required in larger or distributed networks. Each Network Agent monitors a specific IP address range or network segment.
    - Using multiple Network Agents ensures that all network traffic is monitored, and prevents server overload. The required number of Network Agents depends on network size and Internet request volume.
For more information, see Chapter 3: Deploying Network Agent.

- As a network grows and the number of Internet requests increases, components can be deployed to additional, non-dedicated machines to improve processing performance on the dedicated machines.
  - You can deploy multiple Filtering Service instances, connected to one Policy Server. This is useful for remote or isolated sub-networks. For more information, see Number of Filtering Services allowed per Policy Server.
  - Because a maximum of 5000 connections per Policy Server is recommended, multiple Policy Servers may be needed.
- IMPORTANT: To ensure the integrity of the firewall, do not install Websense components on the firewall machine.

**Note**

Network Agent can be deployed with the filtering components or on a separate machine. Network Agent should not be deployed on the same machine as response-critical components or a firewall. For more information, see Chapter 3: Deploying Network Agent.

**Network Agent suggestions**

Up to 4 Network Agents can be deployed per Filtering Service. One Filtering Service may be able to handle more than 4 Network Agents, depending on the number of Internet requests.

Network Agent can typically monitor 50 Mbits of traffic per second, or about 800 requests per second. The number of users that Network Agent can monitor depends on the volume of Internet requests from each user, the configuration of the network, and the location of Network Agent in relation to the computers it is assigned to monitor. Network Agent functions best when it is close to those computers.

If a component’s capacity is exceeded, filtering and logging inconsistencies may occur.

Contact your Websense software provider for technical assistance with specific Network Agent sizing guidelines.

**Number of Filtering Services allowed per Policy Server**

Up to 10 Filtering Services may be deployed per Policy Server. A Policy Server may be able to handle more, depending on the load. If the number of Filtering Service instances exceeds the Policy Server’s capacity, however, responses to Internet requests may be slow.

Multiple Filtering Service instances are useful to manage remote or isolated sub-networks.

The appropriate number of Filtering Service instances for a Policy Server depends on:
General Deployment Recommendations

- The number of users per Filtering Service
- The configuration of the Policy Server and Filtering Service machines
- The volume of Internet requests
- The quality of the network connection between the components

If a ping command sent from one machine to another receives a response in fewer than 30 milliseconds (ms), the connection is considered high quality. See Testing the connection for more information.

If the connection between Filtering Service and Policy Server breaks, all Internet requests are either blocked or permitted, depending on which option you have chosen in Websense Manager. For more information, see the Getting Started topic in the Websense Manager Help.

Filtering Service machines running behind firewalls or remotely (at a great physical distance communicating through a series of routers) may need their own Policy Server instance. In a multiple Policy Server environment, a single Websense Policy Database holds the policy settings for all Policy Server instances. See the Websense Manager Help for more information.

Testing the connection

Run a ping test to check the response time and connection between the Policy Server and Filtering Service machines. A response time of fewer than 30 ms is recommended.

1. Open a command prompt (Windows) or terminal session (Linux) on the Policy Server machine.
2. Enter the following command:

   ```
   ping <IP address or hostname>
   ```

   Here, `<IP address or hostname>` identifies the Filtering Service machine.

Interpreting your results

When you run the ping command on a Windows machine, the results resemble the following:

```
C:\>ping 11.22.33.254
Pinging 11.22.33.254 with 32 bytes of data:
Reply from 11.22.33.254: bytes=32 time=14ms TTL=63
Reply from 11.22.33.254: bytes=32 time=15ms TTL=63
Reply from 11.22.33.254: bytes=32 time=14ms TTL=63
Reply from 11.22.33.254: bytes=32 time=15ms TTL=63
Ping statistics for 11.22.33.254:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
   Minimum = 14ms, Maximum = 15ms, Average = 14ms
```

In a Linux environment, the results look like this:

```
[root@localhost root]# ping 11.22.33.254
PING 11.22.33.254 (11.22.33.254) 56(84) bytes of data.
```

30 ▲ Websense Web Security and Websense Web Filter
Ensure that Maximum round trip time or the value of time=x.xxx ms is fewer than 30 ms. If the time is greater than 30 ms, move one of the components to a different network location and run the ping test again. If the result is still greater than 30 ms, locate and eliminate the source of the slow response.

**Required external resources**

Websense software relies on certain external resources to function properly in your network.

- **TCP/IP**: Websense software provides filtering in TCP/IP-based networks only. If your network uses both TCP/IP and non-TCP protocols, only those users in the TCP/IP portion of your network are filtered.

- **DNS server**: A DNS server is used to resolve requested URLs to an IP address. Websense software or your integration product requires efficient DNS performance. DNS servers should be fast enough to support Websense filtering without becoming overloaded.

- **Directory services**: If Websense software is configured to apply user- and group-based policies, User Service queries the directory service for user information. Although these user and group relationships are cached by Websense software, directory service machines must have the resources to rebuild the cache rapidly when Websense software requests user information. See Supported directory services.

- **Network efficiency**: The ability to connect to resources such as the DNS server and directory services is critical to Websense software. Network latency must be minimized if Filtering Service is to perform efficiently. Excessive delays under high load circumstances can impact the performance of Filtering Service and may cause lapses in filtering. See the Deploying in a Distributed Enterprise supplement to this guide for tips on improving network communication.

**Supported directory services**

If your environment includes a directory service, you can configure Websense software to filter Internet requests based on policies assigned to users, groups, and domains (organizational units).

Websense software can work with the following directory services:

- Windows NT Directory and Windows Active Directory (Mixed Mode)
- Windows Active Directory (Native Mode)
- Sun Java System Directory Server
- Novell Directory Services/Novell eDirectory
For information on configuring Websense software to communicate with a supported directory service, see the Websense Manager Help. Websense software does not need to run on the same operating system as the directory service.

**Deploying transparent identification agents**

If you are using Websense software in stand-alone mode, or if your integration product does not send user information to Websense software, use Websense transparent identification agents to identify users without prompting them for a user name and password.

The following optional transparent identification agents are available:

- DC Agent
- eDirectory Agent
- Logon Agent
- RADIUS Agent

**Note**

DC Agent must have domain administrator privileges to retrieve user logon information from the domain controller.

If you have deployed Websense software in a single network location, a single transparent identification agent instance is recommended.

In deployments that cover multiple locations, you can install an agent instance in multiple domains.

For example:

- One **DC Agent** instance can handle multiple trusted domains. Add additional instances based on:
  - The load placed on DC Agent
  - Whether a DC Agent instance can see all the domains on the network, including remote offices

  Load results from the number of user logon requests. If the network is large (10,000+ users, 30+ domains), having multiple DC Agent instances allows for faster identification of users.

  If multiple Filtering Services are installed, each Filtering Service instance must be able to communicate with all DC Agent instances.

- One **eDirectory Agent** is required for each eDirectory Server.
- One **Logon Agent** is required for each Filtering Service instance.
- One **RADIUS Agent** instance is required for each RADIUS server.
Websense, Inc. recommends installing and running RADIUS Agent and the RADIUS server on separate machines. (The agent and server cannot have the same IP address, and must use different ports.)

In some environments, a combination of transparent identification agents may be appropriate within the same network, or on the same machine. See Combining transparent identification agents.

Refer to the Installation Guide for transparent identification agent installation instructions. See the Websense Manager Help for detailed configuration information. More information is also available in the Transparent Identification of Users technical white paper.

Combining transparent identification agents

Websense software can work with multiple transparent identification agents. If your environment requires multiple agents, it is best to install them on separate machines.

- eDirectory or RADIUS Agent can be installed on the same machine as Filtering Service, or on a separate server on the same network.
- Running eDirectory Agent and DC Agent in the same deployment is not supported.

Table 6 lists supported combinations.

<table>
<thead>
<tr>
<th>Combination</th>
<th>Same machine?</th>
<th>Same network?</th>
<th>Configuration required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple DC Agents</td>
<td>No</td>
<td>Yes</td>
<td>Ensure that all instances of DC Agent can communicate with Filtering Service, and that the individual DC Agents are not monitoring the same domain controllers.</td>
</tr>
<tr>
<td>Multiple RADIUS Agents</td>
<td>No</td>
<td>Yes</td>
<td>Configure each agent to communicate with Filtering Service. Multiple instances of the RADIUS Agent cannot be installed on the same machine.</td>
</tr>
<tr>
<td>Multiple eDirectory Agents</td>
<td>No</td>
<td>Yes</td>
<td>Configure each instance to communicate with Filtering Service.</td>
</tr>
<tr>
<td>Multiple Logon Agents</td>
<td>No</td>
<td>Yes</td>
<td>Configure each instance to communicate with Filtering Service.</td>
</tr>
</tbody>
</table>
Maximizing system performance

Adjust Websense components to improve filtering and logging response time, system throughput, and CPU performance. Websense software can be optimized for:

Table 6 Deploying Multiple Transparent ID Agents

<table>
<thead>
<tr>
<th>Combination</th>
<th>Same machine?</th>
<th>Same network?</th>
<th>Configuration required</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC Agent + RADIUS Agent</td>
<td>Yes</td>
<td>Yes</td>
<td>Install these agents in separate directories. Use a different port for communication between DC Agent and Filtering Service than you use for communication between RADIUS Agent and Filtering Service. See the Websense Knowledge Base for more details.</td>
</tr>
<tr>
<td>DC Agent + eDirectory Agent</td>
<td>No</td>
<td>No</td>
<td>Websense does not support communication with both Windows and Novell Directory Services in the same deployment. However, both agents can be installed, with only one active agent.</td>
</tr>
<tr>
<td>DC Agent + Logon Agent</td>
<td>Yes</td>
<td>Yes</td>
<td>Configure both agents to communicate with Filtering Service. By default, each agent uses a unique port, so port conflicts are not an issue unless these ports are changed.</td>
</tr>
<tr>
<td>RADIUS Agent + Logon Agent</td>
<td>Yes</td>
<td>Yes</td>
<td>Configure all agents to communicate with Filtering Service.</td>
</tr>
<tr>
<td>eDirectory Agent + Logon Agent</td>
<td>No</td>
<td>No</td>
<td>Websense does not support communication with both Novell Directory Services and a Windows or LDAP-based directory service in the same deployment. However, both agents can be installed, with only one active agent.</td>
</tr>
<tr>
<td>RADIUS Agent + eDirectory Agent</td>
<td>Yes</td>
<td>Yes</td>
<td>Configure all agents to communicate with Filtering Service. When adding agents to Websense Manager, use an IP address to identify one, and a machine name to identify the other. See the Transparent Identification of Users white paper for details.</td>
</tr>
<tr>
<td>DC Agent + Logon Agent + RADIUS Agent</td>
<td>Yes</td>
<td>Yes</td>
<td>This combination is rarely required. Install each agent in a separate directory. Configure all agents to communicate with Filtering Service. Use separate ports for this communication.</td>
</tr>
</tbody>
</table>
General Deployment Recommendations

- Network Agent
- Logging of bytes transferred

For enterprise networks, see *Deploying in a Distributed Enterprise* supplement to this guide for more information.

Network Agent

Network Agent can be installed on the same machine as other Websense components, or on a separate machine.

When a small or medium network, for example, exceeds 1000 users, or when Network Agent misses Internet requests, place Network Agent on a different machine than Filtering Service and Policy Server. You can also add a second Network Agent and divide the network monitoring between the two agents.

If Websense software is running in a high load environment, or with a high capacity (T3) Internet connection, you can increase throughput and implement load sharing by installing multiple Network Agent instances. Install each agent on a different machine, and configure each agent to monitor a different portion of the network.

**Important**

Network Agent must have bidirectional visibility into the network or network segment that it monitors.

If multiple Network Agents are installed, each agent must monitor a different network segment (IP address range).

If a Network Agent machine connects to a switch, the monitor NIC must plug into a port that mirrors, monitors, or spans the traffic of all other ports. *Multiple-segment network, page 51, and Network Agent location, page 49*, discuss locating Network Agent in more detail.

HTTP reporting

You can use Network Agent or an integration product to track HTTP requests and pass the information to Websense software, which uses the data to filter and log requests.

Network Agent and some integration products also track bandwidth activity (bytes sent and received), and the duration of each permitted Internet request. This data is also passed to Websense software for logging.

When both Network Agent and the integration partner provide logging data, the amount of processor time required by Filtering Service doubles.
If you are using both Network Agent and an integration product, you can avoid extra processing by configuring Websense software to use Network Agent to log HTTP requests (enhanced logging). When this feature is enabled:

- Websense software does not log HTTP request data sent by the integration product. Only the log data provided by Network Agent is recorded.
- As a best practice, Network Agent and Filtering Service should not run on the same machine.

Consult the Websense Manager Help for configuration instructions.

**Database Engine**

In Microsoft Windows environments, the Websense Log Database can be created using any of the following database engines:

- Microsoft SQL Server 2005 *(recommended)*
- Microsoft SQL Server 2000
- Microsoft Database Engine (MSDE) 2000

Websense Explorer for Linux and the Linux version of Log Server use MySQL 5.0. Log Server logs Internet activity information to only one Log Database at a time.

**Microsoft SQL Server**

Microsoft SQL Server works best for large networks, or networks with a high volume of Internet activity, because of its capacity for storing large amounts of data over longer periods of time (several weeks or months). Microsoft SQL Server 2005, Enterprise Edition, is recommended for its processing speed and RAM capacity.

Under high load, Microsoft SQL Server operations are resource intensive, and can be a performance bottleneck for Websense software reporting. You can tune the database to improve performance, and maximize the hardware on which the database runs:

- Improve CPU performance to alleviate resource conflicts between Log Server and Microsoft SQL Server:
  - Increase the CPU speed, the number of CPUs, or both.
  - Provide a dedicated server machine for Log Server.
- Provide adequate disk space to accommodate the growth of the Log Database. Microsoft SQL Client Tools can be used to check database size.
- Use a disk array controller with multiple drives to increase I/O bandwidth. Place the tempdb and database files on a separate drive to reduce competition for computing resources.
- Increase the RAM on the Microsoft SQL Server machine to reduce time-consuming disk I/O operations.

Establishing rollover rules can improve report generation speed. For example, if you run weekly reports, configure rollover options to create a new database partition every
week to minimize the number of partitions SQL Server accesses. See the Websense Manager Help for information about setting rollover options.

---

**Note**

Consult the Microsoft Web site for detailed information about optimizing Microsoft SQL Server performance.

---

**MSDE**

Microsoft Database Engine (MSDE) is a free database engine best suited to small networks, organizations with a low volume of Internet activity, or organizations that plan to generate reports on only short periods of time (for example, daily or weekly archived reports, rather than historical reports over longer time periods). MSDE cannot be optimized.

With MSDE, the maximum size of the Log Database is about 1.5 GB. When the existing database reaches this limit, it is saved (rolled over), and a new Log Database is created. Use the ODBC Data Source Administrator (accessed via the Windows Control Panel) to see information about databases that have been saved.

If the database is rolling over frequently, consider upgrading to Microsoft SQL Server 2005.

---

**Note**

Consult the Installation Guide for detailed information about selecting the appropriate database engine for the deployment.

---

When using MSDE, make sure that the latest service packs have been applied. Microsoft SQL Server service packs can be applied to MSDE 2000. The service pack updates only those files relevant to MSDE.

**MySQL**

Websense Explorer for Linux requires MySQL 5.0. Although MySQL is available for free, a licensed version must be purchased for commercial use.

For more information on MySQL, visit the MySQL Web site: [www.mysql.com](http://www.mysql.com).

**Log Database disk space recommendations**

Log Database requirements vary, based on the size of the network and the volume of Internet activity. This guide uses the following baseline information to provide general recommendations:

- An average user requests 100 URLs (*visits*) per day.
The Log Database creates a record for each visit.
- Each record is approximately 500 bytes.
- Each URL requires roughly 5 to 10 HTTP GETS (hits).

If the Log Database is configured to write a record for each hit, the size of the database may increase by a factor of 5.

During installation, you are provided options for minimizing the size of the Log Database.

After installation, additional configuration options, including selective category logging, are available to help manage the size of the Log Database. A small Log Database means report generation is faster, but data consolidation may also negatively affect report accuracy. Consult the Websense Manager Help for details.

Logging visits (default settings)

When you log visits, one log record is created for each Web site visited, but the frequency of those visits is not recorded. This option results in a small database.

If the Log Database is configured to record visits (the default), you can calculate the disk space required for the database as follows:

\[(\text{# of URLs}) \times (\text{# of bytes}) \times (\text{# of users})\]

If an average user generates 50 KB per day (100 visits x 500 bytes), and is logged on for 20 work days per month, that user consumes 1 MB in the Log Database each month (20 days x 50 KB/day). Extrapolating to 500 users, the database would use 500 MB per month to record visits.

Logging hits

When you log hits, a separate log record is generated for each HTTP request to display any element of a Web page, including graphics and ads. This type of logging results in a larger and more detailed database than the visit logging option.

If the Log Database is configured to record each hit, you can calculate the disk space required for the database as follows:

\[(\text{avg. # of URLs}) \times (\text{avg. # of hits}) \times (\text{# of bytes}) \times (\text{# of users})\]

If an average user generates 250 KB per day (100 URLs x 5 gets per URL x 500 bytes), and is logged on for 20 work days per month, that user consumes 5 MB in the Log Database each month (20 days x 250 KB/day). Extrapolating to 500 users, the database would use 2.5 GB per month.

In this example, the Log Database would require 30 GB of disk space for one year’s worth of data (500 users at 500 hits per day).

Due to the large amount of disk space required, and due to the performance impact on reporting, Websense, Inc., does not recommend keeping live data from large networks for a year. When you break the database into smaller pieces, you can generate reports more quickly.
Logging full URLs

Enabling full URL logging creates a larger database than with logging hits, and also provides the most detailed reports. Log records include the domain name and the full path to specific pages requested. Use this option if you want reports of real-time scanning activity.

If the Log Database is configured to log the full URLs, each URL recorded can be up to 1000 characters, or 2000 bytes (2 KB) in length. When full URL logging is turned off, a log entry requires only 500 bytes per URL.

If the Log Database is growing too quickly, you can turn off full logging to decrease the size of each entry and slow growth by a factor of 4.

Configure URL logging options in Websense Manager. Consult the Websense Manager Help for details.

Consolidation

Consolidation helps to reduce the size of the database by recording a single entry for multiple visits to the same URL by the same user. Instead of recording each hit or visit by a user, the information is stored in a temporary file. At a specified interval, the file is processed and the duplicate records are not written to the database.

For example, the user visits www.cnn.com and receives multiple pop-ups during the session. The visit is logged as a record.

- If consolidation is turned off (the default), and the user returns to the site later, a second visit is logged.
- If consolidation is turned on, additional visits to the site within a specified period are logged as a single record.

Protocol logging

In addition to logging HTTP and HTTPS traffic, if your deployment includes Network Agent, you have the option to log non-HTTP protocol traffic (for example, instant messaging or streaming media traffic).

The more protocols you choose to log, the greater the impact on the size of the Log Database. See the Websense Manager Help for information about filtering and logging non-HTTP protocols.

Log Database strategy

Using the hits and visits calculations provided under Logging hits, page 38, even without logging full URLs, storing data for 1 year could require:

- 600 GB for hits
- 120 GB for visits

Generating reports against such large amounts of data can significantly slow report processing.
Use database partitions to limit the scope of the data used to generate reports.

- A database rollover is triggered by a time or size limit.
- New data is collected in a new partition.
- Older data is preserved in other partitions.
- You configure which partitions you want to use to generate reports. For example, if you want to generate a report that includes first quarter sales numbers, you would designate only the partitions that contain this data for your report.

Adjust the partition or rollover limits to maximize reporting performance and ease the management of the data. Consult the Websense Manager Help for details.

**Stand-Alone Edition**

The Stand-Alone Edition of Websense Web Security or Websense Web Filter uses Network Agent (rather than an integration product or device) to provide HTTP, HTTPS, FTP, and other protocol filtering. Network Agent:

- Detects all Internet requests (HTTP and non-HTTP)
- Communicates with Filtering Service to see if each request should be blocked
- Calculates the number of bytes transferred
- Sends a request to Filtering Service to log request information

For more information, see the *Installation Guide* or the Websense Manager Help.

The Stand-Alone Edition runs on the operating systems listed earlier in this chapter (see Table 3, on page 18, and Table 4, on page 24).

Reporting runs under Websense Manager in the Stand-Alone Edition on Windows. Websense Explorer for Linux must be installed for reporting in a Linux installation. As in any deployment, reporting components, including Log Server, should run on a separate machine from the filtering components.

---

**Note**

If you are using Logon Agent in a Linux deployment, the Logon Application must be installed on Windows.

The Stand-Alone Edition can be deployed in small, medium, and large networks. Components may need to be distributed over multiple machines for load balancing and improved performance in larger networks. For example, you could deploy multiple Network Agents (on Windows or Linux) to accommodate a high Internet traffic load.

*Table 7, on page 41,* provides system recommendations for deploying the Stand-Alone Edition, based on network size. System needs vary, depending on the volume of Internet traffic.

The following baseline is used to create the recommendations:
General Deployment Recommendations

- 1 – 500 users = 1 – 100 requests per second
- 500 – 2,500 users = 100 – 500 requests/sec
- 2,500 – 10,000 users = 500 – 2,250 requests/sec

If your network traffic exceeds these estimates, more powerful systems or greater distribution of components may be required.

**Important**
- To ensure the integrity of a firewall, do not install Websense components on a firewall machine.
- Each Network Agent machine must be positioned to see all Internet requests for the machines that it is assigned to monitor.
- eDirectory or RADIUS Agent can be installed on the same machine as Filtering Service, or on a separate machine in the same network, but not on the same machine as Log Server.

<table>
<thead>
<tr>
<th>Network Size</th>
<th>Filtering Components</th>
<th>Reporting (Windows)</th>
<th>—or—</th>
<th>Reporting (Linux)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – 500 users</td>
<td><strong>Windows or Linux</strong></td>
<td>Windows</td>
<td></td>
<td><strong>Linux</strong></td>
</tr>
<tr>
<td></td>
<td>- Quad-Core Intel Xeon processor, 2.5 GHz or greater</td>
<td>- Quad-Core Intel Xeon processor, 2.5 GHz or greater</td>
<td></td>
<td>- Quad-Core Intel Xeon processor, 2.5 GHz or greater</td>
</tr>
<tr>
<td></td>
<td>- 4 GB RAM</td>
<td>- 4 GB RAM</td>
<td></td>
<td>- 4 GB RAM</td>
</tr>
<tr>
<td></td>
<td>- 10 GB free disk space (Free space must equal at least 20% of total disk space.)</td>
<td>- 100 GB free disk space</td>
<td></td>
<td>- 80 GB free disk space</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Microsoft SQL Server 2005 SP2 or SP3, Microsoft SQL Server 2000 SP4, or MSDE 2000</td>
<td></td>
<td>- MySQL 5.0</td>
</tr>
<tr>
<td>500 – 2,500 users</td>
<td><strong>Windows or Linux</strong></td>
<td>Windows</td>
<td></td>
<td><strong>Linux</strong></td>
</tr>
<tr>
<td></td>
<td>- Quad-Core Intel Xeon processor, 2.5 GHz or greater</td>
<td>- Quad-Core Intel Xeon processor, 2.5 GHz or greater</td>
<td></td>
<td>- Quad-Core Intel Xeon processor, 2.5 GHz or greater</td>
</tr>
<tr>
<td></td>
<td>- 4 GB RAM</td>
<td>- 4 GB RAM</td>
<td></td>
<td>- 4 GB RAM</td>
</tr>
<tr>
<td></td>
<td>- 10 GB free disk space (Free space must equal at least 20% of total disk space.)</td>
<td>- 100 GB free disk space</td>
<td></td>
<td>- 100 GB free disk space</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Microsoft SQL Server 2000 SP4, Microsoft SQL Server 2005 SP2 or SP3, or MSDE 2000</td>
<td></td>
<td>- MySQL 5.0</td>
</tr>
</tbody>
</table>
General Deployment Recommendations

Table 7 Stand-Alone System Recommendations

<table>
<thead>
<tr>
<th>Network Size</th>
<th>Filtering Components</th>
<th>Reporting (Windows)</th>
<th>—or—</th>
<th>Reporting (Linux)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,500 – 10,000 users</td>
<td><strong>Windows or Linux</strong>&lt;br&gt;• Load balancing required&lt;br&gt;• Quad Xeon, 3.0 GHz, or greater&lt;br&gt;• 4 GB RAM&lt;br&gt;• 10 GB free disk space (Free space must equal at least 20% of total disk space.)&lt;br&gt;• See the Important note below.</td>
<td><strong>Windows</strong>&lt;br&gt;• Quad-Core Intel Xeon processor, 2.5 GHz or greater&lt;br&gt;• 4 GB RAM&lt;br&gt;• 200 GB free disk space with a disk array (The Log Database requires a disk array to increase I/O reliability and performance.)&lt;br&gt;• High-speed disk access&lt;br&gt;• Microsoft SQL Server 2005 SP2 or SP3, or Microsoft SQL Server 2000 SP4</td>
<td><strong>Linux</strong>&lt;br&gt;• Quad Xeon, 2.5 GHz or greater&lt;br&gt;• 4 GB RAM&lt;br&gt;• 200 GB free disk space, with a disk array, RAID level 10&lt;br&gt;• High speed disk access&lt;br&gt;• MySQL 5.0</td>
<td></td>
</tr>
</tbody>
</table>

**Important**

Two Network Agent instances run on separate machines are required for 2,500 – 10,000 user networks. The machines should have:

- Quad-Core Intel Xeon processor, 2.5 GHz or greater
- At least 4 GB of RAM

Multiple Filtering Service machines may also be needed. Machine requirements depend on the number of users being monitored and filtered.

To run both filtering and reporting on the same machine in the two smaller network sizes, increase the RAM to 6 GB, and consider using a faster processor and hard drive to compensate for the increased load.
Remote Filtering

The Remote Filtering feature allows Websense software to monitor computers outside the corporate network. A **Remote Filtering Client** must be installed on each remote machine.

The remote clients communicate with a **Remote Filtering Server**, which acts as a proxy to Filtering Service. This communication is authenticated and encrypted.

When installing Remote Filtering:

- The Remote Filtering Server should be installed on a dedicated machine that can communicate with the Filtering Service machine. See Table 8, on page 43.
- Do **not** install Remote Filtering Server on the same machine as the Filtering Service or Network Agent.
- Each Filtering Service instance has one Remote Filtering Server.
- As a best practice, the Remote Filtering Server should be installed inside the outermost firewall, in the DMZ outside the firewall protecting the rest of the corporate network. This is highly recommended.
- See Table 3, on page 18, for operating system requirements for the Remote Filtering Server.

Remote Filtering Client system recommendations:

- Pentium 4 or greater
- Free disk space: 25 MB for installation; 15 MB to run the application
- 2 GB RAM

### Table 8 Remote Filtering Server System Recommendations

<table>
<thead>
<tr>
<th>Network Size</th>
<th>Windows or Linux</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – 500 clients</td>
<td>• Quad-Core Intel Xeon processor, 2.5 GHz or greater</td>
</tr>
<tr>
<td></td>
<td>• 2 GB RAM</td>
</tr>
<tr>
<td></td>
<td>• 20 GB free disk space</td>
</tr>
<tr>
<td>500 – 2,000 clients</td>
<td>Windows or Linux</td>
</tr>
<tr>
<td></td>
<td>• Quad-Core Intel Xeon processor, 3.2 GHz or greater</td>
</tr>
<tr>
<td></td>
<td>• 4 GB RAM</td>
</tr>
<tr>
<td></td>
<td>• 20 GB free disk space</td>
</tr>
<tr>
<td>2,000 – 5,000 clients</td>
<td>Windows or Linux</td>
</tr>
<tr>
<td></td>
<td>• Quad-Core Intel Xeon processor, 3.2 GHz or greater</td>
</tr>
<tr>
<td></td>
<td>• 4 GB RAM</td>
</tr>
<tr>
<td></td>
<td>• 20 GB free disk space</td>
</tr>
</tbody>
</table>
Table 8 Remote Filtering Server System Recommendations

<table>
<thead>
<tr>
<th>Network Size</th>
<th>Hardware Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>5,000 – 10,000 clients</td>
<td><strong>Windows or Linux</strong></td>
</tr>
<tr>
<td></td>
<td>• Quad Xeon, 3.2 GHz or greater</td>
</tr>
<tr>
<td></td>
<td>- or -</td>
</tr>
<tr>
<td></td>
<td>Static load balancing with Dual Xeon,</td>
</tr>
<tr>
<td></td>
<td>3.2 GHz or greater</td>
</tr>
<tr>
<td></td>
<td>• 4 GB RAM</td>
</tr>
<tr>
<td></td>
<td>• 20 GB free disk space</td>
</tr>
<tr>
<td>10,000+ clients</td>
<td><strong>Windows or Linux</strong></td>
</tr>
<tr>
<td></td>
<td>• Static load balancing with Quad Xeon,</td>
</tr>
<tr>
<td></td>
<td>3.2 GHz or greater</td>
</tr>
<tr>
<td></td>
<td>• 4 GB RAM</td>
</tr>
<tr>
<td></td>
<td>• 20 GB free disk space</td>
</tr>
</tbody>
</table>

**Figure 1** provides an example of a Remote Filtering deployment. The illustration does not include all Websense components.
Supported integrations

Websense software can be integrated with the following firewalls, proxy servers, and caching applications (collectively referred to as integration products) to provide Internet filtering.

Please note that plug-ins for some integrations are not supported on Windows Server 2008. See the Installation Guide supplement for your individual integration for more information.

<table>
<thead>
<tr>
<th>Integration</th>
<th>Version Supported</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cisco®</td>
<td>• Cisco PIX Firewall Software v5.0 or greater&lt;br&gt; • Cisco Adaptive Security Appliances (ASA) Software v7.0 or greater&lt;br&gt; • Cisco Content Engine ACNS v5.4 or greater&lt;br&gt; • Cisco Routers with Cisco IOS Software Release 12.3 or greater</td>
<td>Contact Check Point for assistance in determining which FireWall-1 version is running.&lt;br&gt; Network Agent can run on same machine only if it and the integration each has its own processor.</td>
</tr>
<tr>
<td>Check Point®</td>
<td>• FireWall-1 FP1 or greater&lt;br&gt; • FireWall-1 NG AI&lt;br&gt; • FireWall-1 NGX&lt;br&gt; • CheckPoint Edge&lt;br&gt; • CheckPoint R61&lt;br&gt; • Check Point R65</td>
<td></td>
</tr>
<tr>
<td>Citrix®</td>
<td>• MetaFrame Presentation Server 3.0&lt;br&gt; • Citrix Presentation Server 4.0&lt;br&gt; • Citrix Presentation Server 4.5</td>
<td><strong>Websense Plug-in:</strong>&lt;br&gt; The Citrix plug-in is only supported on Windows. Requires either:&lt;br&gt; • Microsoft Windows Server 2003 (32 bit)&lt;br&gt; • Microsoft Windows 2000 Server (32 bit)</td>
</tr>
</tbody>
</table>
## General Deployment Recommendations

### Table 9 Supported Integrations

<table>
<thead>
<tr>
<th>Integration</th>
<th>Version Supported</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network Appliance™</td>
<td></td>
<td>Websense protocol management requires NetCache v5.5 or later.</td>
</tr>
<tr>
<td>NetCache®</td>
<td>NetCache OS v5.2.1 R1D4 or greater.</td>
<td></td>
</tr>
<tr>
<td>Squid Web Proxy Cache</td>
<td>Squid STABLE v2.5</td>
<td><strong>Websense Plug-in</strong>: The Squid Plug-in for the Squid Web Proxy Cache is supported only on Linux.</td>
</tr>
<tr>
<td>Squid Web Proxy Cache</td>
<td>Squid STABLE v2.6</td>
<td></td>
</tr>
</tbody>
</table>
When your Websense software deployment includes Network Agent, the positioning of the agent and other Websense filter components depends on the composition of your network.

For the most part, Ethernet networks are built of **segments**. (Very simple networks are the exception.) A segment is a sort of neighborhood for a group of machines, which are connected to the rest of the network via a central connection point (router, bridge, switch, or smart hub). Most of these devices keep local traffic within a segment, while passing traffic intended for machines on other segments. This architecture reduces network congestion by keeping unnecessary traffic from passing to the whole network.

A very simple network may require only a single Network Agent. A segmented network may require (or benefit from) a separate Network Agent instance for each segment. Network Agent functions best when it is closest to the computers that it is assigned to monitor.

This chapter provides configuration information and sample deployment diagrams to help you position Network Agent in your deployment.

**Network Agent**

Network Agent manages Internet protocols (including HTTP, HTTPS, and FTP), by examining network packets and identifying the protocol.

As with third-party integration products (like firewalls, routers, proxies, or network appliances), Network Agent can be configured to route HTTP requests to Filtering Service for filtering. In addition, when Network Agent detects a non-HTTP request, it queries Filtering Service to determine whether the protocol should be blocked, and then logs the results of the query.

Network Agent must be installed on the **internal** side of the corporate firewall, in a location where it can see all Internet requests for the machines it is assigned to monitor. The agent then monitors HTTP and non-HTTP requests from those machines, and the response that they receive.

Network Agent only monitors and manages traffic that passes through the network device (switch, hub, or gateway) to which it is attached. Multiple Network Agent
instances may be needed, depending on the size, volume of Internet requests, and the network configuration.

The Network Agent machine can connect to the network via a switch or a hub. See *Hub configuration, page 54*, and *Switched networks with a single Network Agent, page 55*.

Network Agent can be installed on the same machine as an integration product. See *Gateway configuration, page 59*.

---

**Warning**

Do *not* install Network Agent on a machine running a firewall or Remote Filtering Server. On a firewall, Network Agent’s packet-capturing may conflict with the firewall software. On a Remote Filtering Server, machine resources may be too heavily taxed.

*There is one exception:* A blade server or appliance with separate processors or virtual processors may be able to support both Network Agent and firewall software or Remote Filtering Server.

---

**Network Agent settings**

Configure Network Agent global (applying to all agent instances) and local (specific to a single agent instance) settings in Websense Manager. These settings tell Network Agent which machines to monitor and which to ignore.

- **Global settings:**
  - Specify which machines are part of your network.
  - Identify any machines in your network that Network Agent should monitor for *incoming* requests (for example, internal Web servers).
  - Specify bandwidth calculation and protocol logging behavior.

- **Local settings:**
  - Specify which Filtering Service is associated with each Network Agent.
  - Identify proxies and caches used by the machines that this Network Agent monitors.
  - Determine which network card (NIC) the Network Agent instance uses to monitor requests and which it uses to send block pages.

Configuration settings for the NIC used to monitor requests determine which segment of the network the agent instance monitors.
Network Agent location

Network Agent must be able to see all outgoing and incoming Internet traffic on the network segment that it is assigned to monitor. Multiple instances of Network Agent may be needed to monitor an entire network.

- Multiple Network Agents may be needed for larger or high-traffic organizations.
- A Network Agent instance can be placed in each internal network segment. Each instance should monitor its own segment without overlapping any other agent’s segment.

The Network Agent machine may be:

- Connected to a **switch** or **router**.
  - Configure the device to use a mirror or span port, and connect Network Agent to this port, to allow the agent to see Internet requests from all monitored machines. (On most switches, you can change a port mode to spanning, mirroring, or monitoring mode. The term varies by manufacturer; the function is the same.)

  ![Note](image)

  Not all switches support port spanning or mirroring. Contact the switch vendor to verify that spanning or mirroring is available, and for configuration instructions.

  - Websense, Inc., strongly recommends using a switch that supports bidirectional spanning. This allows Network Agent to use a single network card (NIC) to both monitor traffic and send block pages.
    
    If the switch does not support bidirectional spanning, the Network Agent machine must have at least 2 NICs: one for monitoring and one for blocking. See **Using multiple NICs**, page 61.
  
  - On a dedicated machine, connected to an **unmanaged, unswitched hub** located between an external router and the network.

To ensure that Network Agent is able to monitor the expected traffic, you must both position the Network Agent machine appropriately, and configure Network Agent settings in Websense Manager. Consult the Websense Manager Help for instructions.

The following sections illustrate possible single and multiple Network Agent configurations.
Single-segment network

A single-segment network is a series of logically connected nodes (computers, printers, and so on) operating in the same portion of the network. In a single-segment network, Filtering Service and Network Agent must be positioned to monitor Internet traffic across the entire network.

Figure 2 shows the filtering components of the Websense software Stand-Alone Edition installed in a central location to see both HTTP and non-HTTP traffic.

To learn more about installing Network Agent in a network:

- With a hub, see Hub configuration, page 54.
- With a switch, see Switched networks with a single Network Agent, page 55.
- With a gateway, see Gateway configuration, page 59.
Multiple-segment network

Depending on the device used to connect network segments, some traffic may not be sent to all segments. A router, bridge, or smart hub serves as traffic control, preventing unneeded traffic from being sent to a segment. In this environment, the Websense filtering components must be deployed to see all network traffic.

- Filtering Service must be installed where it can receive and manage Internet requests from the integration product, if any, and communicate with Network Agent.
- Each Network Agent instance must be able to see all Internet requests on the segment or segments that it is configured to monitor.

Deploying multiple Network Agents

Multiple Network Agent instances may be needed in a multiple-segment network to capture all Internet requests. A Network Agent can be installed on each segment to monitor the Internet requests from that segment.

Note

A limit of 4 Network Agents is suggested for each Filtering Service. It may be possible to use more agent instances, depending on system and network configuration and the volume of Internet requests.

If multiple Network Agent instances are installed:

- Ensure that the instances are deployed to monitor the entire network. Partial deployment results in incomplete filtering and loss of log data in network segments not watched by the Network Agent.
- Network Agent instances must not be configured to monitor overlapping IP address ranges. An overlap can result in inaccurate logging and network bandwidth measurements, and improper bandwidth-based filtering.
  
  The network segment or IP address range monitored by each Network Agent is determined by the NIC settings for the agent configured in Websense Manager. See the Websense Manager Help for instructions.
- Avoid deploying Network Agent across different LANs. If you install Network Agent on a machine in the 10.22.x.x network, and configure it to communicate with a Filtering Service machine in the 10.30.x.x network, communication may be slow enough to prevent Network Agent from blocking an Internet request before the site is returned to the user.
For examples of central and distributed Network Agent placement, see:

- *Hub configuration*, page 54
- *Switched networks with a single Network Agent*, page 55
- *Gateway configuration*, page 59

**Central Network Agent placement**

A network with multiple segments can be filtered from a single location. Install Filtering Service where it can receive Internet requests from both the integration product, if any, and each Network Agent.

If the network contains multiple switches, Network Agent instances are inserted into the network at the last switch in the series. This switch must be connected to the gateway that goes out to the Internet.

In **Figure 3**:

- One Network Agent instance is installed with Filtering Service on Machine A. This machine is connected to the network via a switch that is configured to mirror or span the traffic of network Segment 1.
- A second Network Agent is installed on Machine B, which is connected to the same switch as Machine A. Machine B is connected to a different port that is configured to mirror the traffic of Segments 2 and 3.
- Both Network Agents are positioned to see all traffic for the network segments they monitor, and to communicate with other Websense components.
- The switch is connected to the gateway, allowing the Network Agent instances to monitor network traffic for all network segments.

![Figure 3 Websense software in a multiple-segment network](image)
Distributed Network Agent placement

The network diagram below shows a single Filtering Service with 3 Network Agents, one for each network segment. A deployment like this might be useful in organizations with satellite offices, for example.

- Filtering Service (Machine C) must be installed where it is able to receive and manage Internet requests from both the integration product (if any) and each of the Network Agent instances in all network segments.
- Each Network Agent (machines A, B and C) is connected to the network segment it monitors via the span or mirror port of a switch.

See *Deploying multiple Network Agents*, page 51, for more information.

In Figure 4, the switches are not connected in a series. However, each switch is connected to the router, which is connected to the gateway.

![Figure 4 Multiple Network Agents in a multiple-segment network](image)
Hub configuration

At the simplest level, a network hub provides a central connection point for the segments in a network and the devices in those segments. The port to which the Network Agent machine connects is dependent on the type of hub. Some hubs broadcast traffic to all of their ports, while others do not.

Network Agent must be able to see the traffic for the network segments it is assigned to monitor.

Figure 5  Network Agent connected to a hub
Switched networks with a single Network Agent

A switch is a bridge that routes traffic between network segments. It prevents all traffic from going to all segments, reducing network congestion. Since not all traffic going through a switch is visible to all devices on the network, the machine running Network Agent must be connected at a point where it can monitor all Internet traffic for the network.

Connect the Network Agent machine to the port on the switch that mirrors, monitors, or spans the traffic on the gateway or firewall port. The span or mirror port sees all the traffic that leaves each network segment.

**Note**
Not all switches support bidirectional port spanning or mirroring. Contact the switch vendor to verify that spanning or mirroring is available, and for configuration instructions.

If bidirectional communication is not available, at least 2 network cards (NICs) are needed to monitor traffic and communicate with other Websense components.

If port spanning is not available, Network Agent cannot properly monitor the network.

Figure 6 shows a network with a single switch. The Network Agent machine is attached to the port that mirrors all traffic from connected clients. Subsequent illustrations show multiple switch and multiple subnetwork configurations.
**Figure 7** shows the use of additional switches to create 2 network segments. All Internet traffic from these network segments must pass through Switch #3, to which Network Agent is attached. In a multiple switch environment, failure to enable port spanning or mirroring could result in missed filtering and inaccurate reports.

**Switched Environment**

**Requirement:** Network Agent must be able to detect Internet requests coming from all the clients in the network. Traffic from both Switch #1 and Switch #2 goes through Switch #3 into the firewall.

**Solution:** The port on Switch #3 to which the Network Agent is connected must be configured to span or mirror the port to which the firewall is connected. All Internet traffic that passes through the firewall can then be monitored by the one Network Agent.
Figure 8 also contains multiple network segments. This network adds a router for communication with a remote office. The machine running Network Agent is connected to an additional switch.

**Remote Office Connection**

**Requirement:** Network Agent must be able to monitor all URL and protocol requests from Switch #1, Switch #2, and Switch #3, as well as the Internet traffic coming into the router from a remote office.

**Solution:** Install Websense components on a machine connected to the router. Be sure that Network Agent can see all traffic. Network Agent can also be installed on its own, dedicated machine to improve performance. Network Agent functions best when it is closest to the computers that it is assigned to monitor. The next section discusses installing Network Agent on multiple segments.

Network Agent can also be positioned closer to the clients, as shown in Figure 9, page 58.
Switched networks with multiple Network Agents

A busy network may need multiple Network Agents to monitor different network segments or IP address ranges. Network Agent operates best when it is closer to the computers it is assigned to monitor. Figure 9 shows a network in which multiple Network Agent instances monitor separate network segments.

See *Deploying multiple Network Agents*, page 51, for more information.
Gateway configuration

A gateway provides a connection between two networks. The networks do not need to use the same network communication protocol. The gateway can also connect a network to the Internet.

Network Agent can be installed on the gateway machine, allowing Network Agent to manage and monitor all Internet traffic. The gateway can either be a third-party proxy server or a network appliance. Do not install Network Agent on a firewall.

---

**Important**

The gateway configuration shown here is best used in small to medium networks.

In larger networks, performance can suffer as a result of resource competition between the gateway software and Network Agent.

---

*Figure 10* shows Network Agent monitoring the Internet traffic at the proxy gateway or caching appliance directly attached to the firewall.
Figure 11 shows Network Agent deployed in a network that includes Websense Content Gateway. Do not install Network Agent on the Websense Content Gateway machine.
Using multiple NICs

Network Agent is capable of using more than one network card (NIC).

- Best practices suggest a maximum of 5 NICs
- The NICs can be connected to ports on the same network device (switch or router), or to different network devices.

If the machine running Network Agent has multiple NICs:

- Only one instance of Network Agent can be installed on the machine.
- The blocking or inject NIC (used to serve block pages) must have an IP address.
- Each NIC can be configured to monitor or block Internet requests, or both.
- Each NIC can be configured to monitor a different network segment.
- At least one NIC must be configured for blocking.

When you configure separate network cards to monitor traffic and send block messages (shown in Figure 12, page 62):

- The monitoring and blocking NIC do not have to be assigned to the same network segment.
- The monitoring NIC must be able to see all Internet traffic in the network segment that it is assigned to monitor.
- Multiple monitoring NICs can use the same blocking NIC.
- The blocking NIC must be able to send block messages to all machines assigned to the monitoring NICs, even if the machines are on another network segment.
- A monitoring NIC can be set for **stealth mode** (no IP address). For information on configuring stealth mode, see the Websense Web Security and Websense Web Filter *Installation Guide*.
- The blocking NIC **must** have an IP address (cannot be set to stealth mode).

The installer requests the IP addresses for the NICs that Websense software uses for communication, and for the NICs that Network Agent uses to monitor traffic. For more information, see the Websense Web Security and Websense Web Filter *Installation Guide*. 
For information on configuring multiple NICs, consult the Websense Manager Help.

![Diagram of a dual NIC configuration](image)

**NAT and Network Agent deployment**

If you use Network Address Translation (NAT) on internal routers, Network Agent may be unable to identify the source IP address of client machines. When Network Agent detects traffic after being passed through such a router, the agent sees the IP address of the router’s external interface as the source of the request, rather than the IP address of the client machine.

To address this issue, either disable NAT, or install Network Agent on a machine located *between* the NAT router and the monitored clients.
This chapter addresses considerations for deploying Websense components with an integration product (such as a firewall, proxy, or caching application).

Most of the network diagrams included in this chapter show a typical small network installation (500 users or fewer). The diagrams show the recommended location of your integration product relative to Websense components.

- The diagrams are intended to provide a general overview, and do not show all Websense components.
- Larger networks require that Websense components be distributed across several dedicated machines. See the Deployment Guide Supplements for more information.

**Note**

DC Agent is listed as the transparent identification agent in many of the diagrams in this chapter. Logon Agent can also be used.

Please note that plug-ins for some integrations are not supported on Windows Server 2008. See the Installation Guide supplement for your individual integration for more information.

**Websense Content Gateway**

Websense Content Gateway™ is a central gateway for controlling Web content that offers:

- The advantages of a proxy cache, improving bandwidth usage and network performance by storing requested Web pages and, if the page is still considered “fresh,” serving the Web page to the requesting client.
- Real-time content categorization. This feature examines the content of uncategorized sites and sites that include rapidly changing content, and then returns a recommended category to Filtering Service.

Websense Content Gateway can run in explicit or transparent proxy mode.

- In explicit proxy mode, client browsers must be configured to point to the proxy.
Integration Deployment

- In transparent proxy mode, the client request is intercepted and redirected to the proxy. Traffic is redirected through a router or a Layer 4 switch and the ARM (Adaptive Redirection Module) feature of the proxy.

Websense Content Gateway can participate in flexible cache hierarchies, where Internet requests not fulfilled in one cache can be routed to other regional caches. The gateway also scales from a single node into multiple nodes that form a cluster, to improve system performance and reliability.

Websense Content Gateway is installed on a Linux machine, separate from other Websense components. See the Websense Content Gateway Installation Guide for more information.

Figure 13 shows Websense Content Gateway and Websense Data Security Suite deployed with Websense Web filtering components (including Policy Broker, Policy Server, Filtering Service, User Service, and a transparent identification agent).

- The Websense Data Security Suite, Websense Content Gateway, and Websense filtering component machines access network traffic through a router.

- Network Agent is installed on a separate machine, attached to the span port on a switch.
Figure 13  Integration with Websense Content Gateway
Cisco deployment

A simple and common network topology places Websense filtering components on a single machine, or group of dedicated machines, communicating with the Cisco PIX Firewall or Cisco Adaptive Security Appliance (ASA) via TCP/IP.

- Websense reporting components are installed on a separate machine.
- If you install Network Agent, it must be positioned to see all traffic on the internal network.

See the Installation Guide Supplement for use with Cisco Integrated Products for configuration instructions.

Figure 14 Common Windows Network Configuration for Cisco PIX Firewall or ASA

Other configurations are possible. Consult your Cisco PIX Firewall or ASA documentation and the information in this section to determine the best configuration for your network.
Cisco Content Engine

In this common configuration, Websense filtering components are installed on a single machine, communicating with the Cisco Content Engine through TCP/IP.

- Websense reporting components are installed on a separate machine.
- If you install Network Agent, it must be positioned to see all traffic on the internal network.

![Diagram of Cisco Content Engine network configuration](image)

**Figure 15 Common Windows network configuration for Cisco Content Engine**

Other configurations are possible. Consult your Content Engine documentation and the information in this chapter to determine the best configuration for your network.
Cisco IOS Routers

In this common configuration, Websense filtering components are installed on a single machine, communicating with the Cisco IOS Router.

- Websense reporting components are installed on a separate machine.
- If you install Network Agent, it must be positioned to see all traffic on the internal network.

The router has firewall functionality and can be used with or without an accompanying firewall.

If the Cisco IOS Router is used with a separate firewall, ensure that all Internet traffic is configured to pass through the router and is not set to bypass the router and go directly to the firewall. Traffic filtered through the separate firewall cannot be filtered by the Websense software.

![Diagram of network configuration for Cisco IOS Routers]

Figure 16 Common Windows network configuration for Cisco IOS Routers

Other configurations are possible. Consult your Cisco Router documentation and the information in this chapter to determine the best configuration for your network.
Check Point

This section includes a general discussion of 2 common Check Point integration deployment options: simple deployment with unified components, and distributed deployment. See the Installation Guide Supplement for use with Check Point Integrated Products for configuration instructions.

Simple

In the simplest and most common network topology, an organization has one firewall that resides on a dedicated server. All Websense filtering components are installed on a separate machine on the internal network.

- Websense reporting components are installed on a separate machine.
- If you install Network Agent, it must be positioned to see all traffic on the internal network.

Figure 17  Simple network configuration
Distributed

In Figure 18, Websense filtering software is installed on a single machine in a central location where it can manage both protocol and HTTP traffic. HTTP requests are handled by the Check Point appliance, and the non-HTTP traffic is managed by Network Agent, which is positioned to detect all outbound traffic.

To avoid performance and security issues, do not install Websense components on a machine running Check Point software, unless the machine is a blade server that has
separate processors to accommodate each product. Network Agent will not function correctly if installed on the Check Point machine.

---

**Warning**

Websense, Inc., and Check Point do not recommend installing Websense software and Check Point on the same machine. Do **not** install Network Agent on the same machine as Check Point software.

---

**Microsoft ISA Server**

When you integrate Websense software with Microsoft ISA Server, the Websense ISAPI plug-in must be installed on the ISA Server machine. The plug-in allows Microsoft ISA Server to communicate with Filtering Service, and must be installed on every ISA Server machine that communicates with Websense software.

- You can install Policy Broker, Policy Server, Filtering Service, and User Service on the same machine as Microsoft ISA Server.
- When Websense filtering software is installed on the same machine as Microsoft ISA Server, the Websense ISAPI Filtering plug-in must be installed at the same time.

If your environment includes an array of Microsoft ISA Server machines, install Websense software on a machine outside the array.

See the *Websense Installation Guide Supplement for use with Microsoft ISA Server* for instructions and more information.

---

**Important**

Install Filtering Service and the ISAPI Filter together if you are installing Websense filtering components on the ISA Server machine. You cannot add the plug-in once Filtering Service has been installed.
Single Microsoft ISA Server configuration

Figure 19 shows all Websense components, including the Websense ISAPI Filter, running on the same machine as Microsoft ISA Server. Unless the Internet traffic volume is light, this configuration requires a powerful machine.
An alternate setup, Figure 20, places Websense filtering components on a Windows machine separate from the Microsoft ISA Server machine. This configuration eases the load on the Microsoft ISA Server machine.

- The ISAPI Filter must be installed on the Microsoft ISA Server machine so that Internet activity information can be communicated to Filtering Service.
- The Filtering Service and Microsoft ISA Server machines must be able to communicate over the network.

![Diagram of Websense filtering components installed separately from Microsoft ISA Server](image-url)

Figure 20  Filtering components installed separately from Microsoft ISA Server
Array configuration

Websense software is compatible with most array configurations, including Cache Array Routing Protocol (CARP) arrays. If the Microsoft ISA Server machines in the array can run Websense software without a performance impact, installing the Websense components on one of the array machines is recommended. In this configuration, the two applications do not have to communicate over the network.

Install the Websense ISAPI Filter on each Microsoft ISA Server machine in the array. Figure 21 shows Websense filtering components running on a Microsoft ISA Server machine, with Websense Manager and Log Server installed on a computer that has network access to the Websense filtering machine.
If installing Websense filtering components on a Microsoft ISA Server machine is likely to have a performance impact, install Websense software outside the array. Install the Websense ISAPI Filter on each member of the array. See Figure 22.

When Websense software is deployed in this configuration, all array members send Internet requests to Filtering Service outside the array.

Other configurations are possible. Consult your Microsoft ISA Server documentation for information about Microsoft ISA Server configurations.
Squid Web Proxy Cache deployment

Websense filtering components can be installed on the same machine as Squid Web Proxy Cache, on a separate machine, or on multiple machines.

Squid Web Proxy Cache machines may be deployed in an array to share the load in a larger network.

A Websense Squid plug-in must be installed on each machine running Squid Web Proxy Cache.

The diagrams in this section assume a Linux installation.

- If Websense filtering components are installed on a Windows machine, move Websense Manager to another machine.
- If you are running Websense Manager on Windows, do not install a second instance of Websense Manager on a Linux machine.

Single Squid Web Proxy Cache configuration

Figure 23 shows the Websense filtering components, the Squid plug-in, and the Squid Web Proxy Cache running on the same machine. In this configuration, the Websense filtering and components are installed on the Squid Web Proxy Cache machine. You can also install a Websense transparent identification agent on the same machine, or on a separate machine.
An alternate deployment places all Websense filtering components on a separate machine from the Squid Web Proxy Cache. This configuration eases the load on the Squid Web Proxy machine.

- The Websense Squid Plug-in must be installed on the Squid Web Proxy machine to enable communication with Filtering Service.
- The Filtering Service and Squid Web Proxy machines must be able to communicate over the network.

Figure 24  Filtering components and Squid Web Proxy Cache on separate machines
**Array configuration**

Web sense software is compatible with most array configurations, including Cache Array Routing Protocol (CARP) arrays. If the Squid Web Proxy Cache machines in an array can run Websense software without a performance impact, install the main Websense filtering components on one of the array machines. In this configuration, the two applications do not have to communicate over the network.

**Figure 25** shows the Websense filtering components running on a Squid Web Proxy Cache machine, with Websense reporting components on a separate machine.
If installing the Websense filtering components on the Squid Web Proxy Cache machine is likely to have a performance impact, install Websense software on a separate machine outside the array, and then install the Squid plug-in on each member of the array. See Figure 26.

When Websense software is installed in this configuration, all array members send Internet requests to Filtering Service outside the array.

Other configurations are possible. Consult your Squid Web Proxy Cache documentation for information about array configurations. See the Installation Guide Supplement for use with Squid Web Proxy Cache for Websense software configuration instructions.
NetCache integration

NetCache has been specifically enhanced to integrate with Websense software. When NetCache receives a client’s Internet request, it queries Filtering Service to find out whether or not the site should be blocked. If the site is assigned to a permitted category, Filtering Service notifies NetCache that the site is not blocked, and the site is returned to the user.

Figure 29 shows Websense filtering components installed together on a single machine. Remember that Network Agent must be able to monitor all Internet traffic.

Other configurations are possible. Consult your NetCache documentation for information about array configurations. See the Installation Guide Supplement for use with NetCache for Websense software configuration instructions.
Universal integration

If your firewall, proxy server, caching application, or network appliance is not one of the products listed in this chapter, you may still be able to integrate it with Websense software. Check the list of Websense Technology Partners at www.websense.com/global/en/Partners/TAPartners/SecurityEcosystem/ to see if Websense software can be integrated with the product. If your integration product is listed, that product has been specifically enhanced to integrate with Websense software.

Typical configurations include networks with a single firewall, proxy server, or caching application, and networks with an array of firewalls, proxy servers, or caching appliances. A Websense transparent identification agent (DC Agent, Logon Agent, eDirectory Agent, or RADIUS Agent) can be installed on the Filtering Service machine or on a separate machine.

Other configurations are possible. Consult your integration product’s documentation for other recommendations. See the Installation Guide Supplement for use with Universal Integrations for Websense software configuration instructions.
Websense software integrated with a Citrix server can monitor HTTP, FTP, and SSL requests from individual Citrix users. Network Agent can be used to filter other protocols, if needed.

**Figure 29** shows a typical deployment used to filter both users who access the Internet through a Citrix server and users who access the Internet locally.

- The Websense filtering components are installed on a dedicated machine that can filter both the Citrix server clients and the non-Citrix clients.
- The Websense Citrix Integration Service must be installed on each Citrix server to allow it to communicate with Filtering Service.
- No other Websense components can be installed on the Citrix server.

Separate Network Agent instances are needed for the Citrix and non-Citrix users.

To simplify the diagram, not all individual Websense components are shown.

**Figure 29  Citrix integration**

Other integrations also can be used in the non-Citrix portion of the network. See the *Installation Guide Supplement for use with Integrated Citrix Servers* for Websense software configuration instructions.
Index

A
Active Directory, 31
  DC Agent support, 18
  authentication
directory services, 31

C
CARP array
  deploying Websense software in, 74
Check Point
  deployment warning, 71
  integration, 69
Check Point integration
distributed, 70
  simple, 69
Cisco
  integration, 66
Cisco Content Engine
  integration deployment, 67
Cisco Routers
  configuring for Websense software, 68
  integration deployment, 68
combining Transparent Identification Agents, 33
configured
components
  defined, 11
Filtering Service, 12
Master Database, 12
Network Agent, 12
network considerations, 28
OS requirements, 18, 24
Policy Broker, 11
Policy Database, 11
Policy Server, 11
relational limits, 27
software required, 18
suggested ratios, 28
Usage Monitor, 12
Websense Manager, 12
configuration
  Content Engine with Websense software, 67
IOs Routers with Websense software, 68
  consolidation, Log Database, 39
Content Engine
  configuring
  with Websense software, 67

D
Database Engine
  maximizing system performance, 36
  Microsoft SQL Server, 36
  MSDE, 37
DC Agent
  Active Directory, 18
  combined deployment
eDirectory Agent, 34
  Logon Agent, 34
  RADIUS Agent, 34
  RADIUS and Logon Agents, 34
defined, 13
multiple deployment, 33
NTLM support, 18
OS requirements, 18
software requirements, 18
deployment
  filtering components on the Squid machine, 76
  Websense software a separate machine, 77
directory services
  Active Directory, 31
eDirectory, 31
Filtering Service interaction, 31
Novell Directory Services, 31
NTLM, 31
Sun Java System Directory, 31
supported types, 31
disk space recommendations
  Log Database, 37
DNS server, 31
  IP address resolution, 31

E
eDirectory, 19
eDirectory Agent, 31
combined deployment
  DC Agent, 34
  Logon Agent, 34
  RADIUS Agent, 34
defined, 13
eDirectory Server limit, 32
multiple deployment, 33
Novell requirements, 19
OS requirements, 19
software requirements, 19
Explorer
defined, 15
OS requirements, 19
software requirements, 19
Filtering Service, 12
location, 51
  enterprise network, 28
Logon Agent limit, 32
multiple installations of, 28
OS requirements, 19
Remote Filtering Server limit, 27
software requirements, 19
suggested number per Policy Server, 29
testing connections, 30
Gateway configuration, 59
Global settings
  Network Agent, 48
HTTP reporting, 35
  maximizing system performance, 35
hub configuration
  Network Agent, 54
 integrations
  Check Point, 69
  Cisco, 66
    Content Engine, 67
    IOS Routers, 68
  Microsoft ISA, 71
Squid Web Proxy Cache, 76
Universal, 81
Websense Content Gateway, 63
integrations, supported versions, 45
IP addresses
  avoid overlapping coverage, 51
DNS server resolution, 31
ISA Server
  array configuration, 78
load balancing, 28
Local settings
  Network Agent, 48
  location
    Filtering Service, 51
    Network Agent, 49
Log Database
  consolidation, 39
defined, 14
disk space recommendations, 37
  strategy, 39
Linux
  OS requirements, 19
  software requirements, 19
Log Server limit, 27
logging full URLs, 39
logging hits, 38
logging visits, 38
protocol logging, size impact, 39
Solaris
  OS requirements, 19
  software requirements, 19
Windows
  OS requirements, 19
  software requirements, 19
Log Server
  component limits, 27
defined, 15
Windows
  OS requirements, 20
  software requirements, 20
logging full URLs, 39
logging hits, 38
Logging Visits, 38
Logon Agent
  combined deployment
DC Agent, 34
  eDirectory Agent, 34
  RADIUS Agent, 34
  RADIUS and DC Agents, 34
defined, 13
Filtering Service limit, 32
  multiple deployment, 33
OS requirements, 20
  software requirements, 20
Logon Application
defined, 13
  OS requirements, 21

M
  Master Database, 12
  maximizing system performance, 34
    Database Engine, 36
    HTTP Reporting, 35
    Microsoft SQL Server, 36
    MSDE, 37
    Network Agent, 35
Microsoft ISA Server
  array configuration, 74
  integration, 71
  separate installation, 73
  single configuration, 72
  single machine install, 72
Microsoft SQL Server
  maximizing system performance, 36
MSDE
defined, 37
  maximizing system performance, 37
multiple NICs
  Network Agent, 61
  multiple segments
    defined, Network Agent
      multiple segment networks, 51
MySQL
  maximizing system performance, 37

N
  NAT (Network Address Translation), 62
  Network Agent, 12
    deploying, 47
  Filtering Service suggestions, 29
  firewall recommendation, 48
  function, 47
  functions, 47
gateway configuration, 59
  Global Settings, 48
  global settings, 48
  HTTP reporting, 35
  hub configuration, 54
  Local Settings, 48
  Local settings, 48
  location, 49
  maximizing system performance, 35
  maximum number, 51
  multiple, 51
  multiple agents
    IP address range, 51
    switched configuration, 58
  multiple NICs, 61
    monitoring and blocking, 61
  multiple segments, 51
    central placement, 52
    distributed placement, 53
  Network Address Translation (NAT), 62
  network visibility, 35, 49
  number of users, 29
  OS requirements, 21
  Remote Filtering recommendation, 48
  settings, 48, 48
  single segment network, 50
  software requirements, 21
  Stand-Alone Edition, 40
  switched configuration, 55
  visibility, 28, 35
  Websense Content Gateway deployment, 60
  network considerations
    components, 28
    VMWare, 25
  network efficiency, 31
  network visibility
    Network Agent, 35, 49
Novell Directory Service, 31
Novell requirements
  eDirectory, 19
NTLM
  DC Agent Support, 18
  NTLM-based directories, 31
operating systems
  component support, 24
  requirements, 18, 18, 24
  Stand-Alone System, 40

Policy Broker, 11
Policy Database, 11
Policy Server, 11
  component limits, 27
  number of Filtering Services, 29
  OS requirements, 22
  testing connections, 30
protocol logging
  impact on Log Database, 39

RADIUS Agent
  combined deployment, 34
  DC Agent, 34
  DC and Logon Agents, 34
  eDirectory Agent, 34
  defined, 13
  multiple deployment, 33
  OS requirements, 22
RADIUS Servers
  supported, 22
  server
  limits, 32
  software requirements, 22
  supported servers, 22
Real-Time Analyzer
  Policy Server limit, 27
Remote Filtering, 43
  Client
  defined, 13
  OS requirements, 22
  system recommendations, 43
  Filtering Service limit, 27
  Server
  deployment recommendations, 43
  OS requirements, 22
  system recommendations
    10000+ clients, 44
    1-500 clients, 43

Remote Filtering Server
  defined, 13
Reporter
  defined, 15
Reporting
  components defined, 14
  requests per second and users, 40
  requests per second averages, 40
  requirements, operating system, 18

single segment network, 50
software requirements, 18
Squid Web Proxy
  single configuration, 76
Squid Web Proxy Cache
  integration, 76
Stand-Alone Edition, 40
  1 - 500 users, 41
  2,500 - 10,000 users, 42
  500 - 2,500 users, 41
  Network Agent, 40
  operating systems, 40
Sun Java System Directory Server, 31
  support
    RADIUS Servers, 22
    TCP/IP, 17, 31
switched configuration
  Network Agent, 55
  system performance, maximizing
    see maximizing system performance
  system requirements, software, 18

TCP/IP
  support, 17
Transparent Identification Agents
  combining, 33
deploying
  XID
    see Transparent Identification Agents

Universal integration, 81
Unix Log Server
  defined, 15
Usage Monitor, 12
  OS requirements, 23
  Policy Server limit, 27
user identification
  directory services, 31
User Service
  OS requirements, 23
  Policy Server limit, 27
  software requirements, 23
users and requests per second, 40

V
  visibility
    Network Agent, 28

VMWare
  network considerations, 25

W
  Websense components defined, 11
  Websense Content Gateway
    integration, 63
    Network Agent deployment, 60
  Websense Manager, 12
    OS requirements, 23
    software requirements, 23
Windows
  Active Directory, 31
  NTLM-based directories, 31