Botnet Traffic Filter

Malware is malicious software that is installed on an unknowing host. Malware that attempts network activity such as sending private data (passwords, credit card numbers, key strokes, or proprietary data) can be detected by the Botnet Traffic Filter when the malware starts a connection to a known bad IP address. The Botnet Traffic Filter checks incoming and outgoing connections against a dynamic database of known bad domain names and IP addresses (the *blacklist*), and then logs or blocks any suspicious activity.

You can also supplement the Cisco dynamic database with blacklisted addresses of your choosing by adding them to a static blacklist; if the dynamic database includes blacklisted addresses that you think should not be blacklisted, you can manually enter them into a static *whitelist*. Whitelisted addresses still generate syslog messages, but because you are only targeting blacklist syslog messages, they are informational.

Note If you do not want to use the Cisco dynamic database at all, because of internal requirements, you can use the static blacklist alone if you can identify all the malware sites that you want to target.

This chapter describes how to configure the Botnet Traffic Filter and includes the following sections:

Information About the Botnet Traffic Filter

This section includes information about the Botnet Traffic Filter and includes the following topics:

Botnet Traffic Filter Address Types

Addresses monitored by the Botnet Traffic Filter include:

- Known malware addresses—These addresses are on the blacklist identified by the dynamic database and the static blacklist.
- Known allowed addresses—These addresses are on the whitelist. The whitelist is useful when an address is blacklisted by the dynamic database and also identified by the static whitelist.
- Ambiguous addresses—These addresses are associated with multiple domain names, but not all of these domain names are on the blacklist. These addresses are on the *greylist*.
- Unlisted addresses—These addresses are unknown, and not included on any list.

Botnet Traffic Filter Actions for Known Addresses

You can configure the Botnet Traffic Filter to log suspicious activity, and you can optionally configure it to block suspicious traffic automatically.

Unlisted addresses do not generate any syslog messages, but addresses on the blacklist, whitelist, and greylist generate syslog messages differentiated by type. See Botnet Traffic Filter Syslog Messaging, page 24-14 for more information.

Botnet Traffic Filter Databases

The Botnet Traffic Filter uses two databases for known addresses. You can use both databases together, or you can disable use of the dynamic database and use the static database alone. This section includes the following topics:

Information About the Dynamic Database

The Botnet Traffic Filter can receive periodic updates for the dynamic database from the Cisco update server. This database lists thousands of known bad domain names and IP addresses.

How the ASA Uses the Dynamic Database

The ASA uses the dynamic database as follows:

1. When the domain name in a DNS reply matches a name in the dynamic database, the Botnet Traffic Filter adds the name and IP address to the *DNS reverse lookup cache*.
2. When the infected host starts a connection to the IP address of the malware site, then the ASA sends a syslog message informing you of the suspicious activity and optionally drops the traffic if you configured the ASA to do so.

3. In some cases, the IP address itself is supplied in the dynamic database, and the Botnet Traffic Filter logs or drops any traffic to that IP address without having to inspect DNS requests.

Database Files

The database files are downloaded from the Cisco update server, and then stored in running memory; they are not stored in flash memory. Be sure to identify a DNS server for the ASA so that it can access the Cisco update server URL. In multiple context mode, the system downloads the database for all contexts using the admin context interface; be sure to identify a DNS server in the admin context.

If you need to delete the database, use theConfiguration > Firewall > Botnet Traffic Filter > Botnet Database pane Purge Botnet Database button instead. Be sure to first disable use of the database by unchecking the **Use Botnet data dynamically downloaded from updater server** check box in the Configuration > Firewall > Botnet Traffic Filter > Botnet Database > Dynamic Database Configuration area.

Note To filter on the domain names in the dynamic database, you need to enable DNS packet inspection with Botnet Traffic Filter snooping; the ASA looks inside the DNS packets for the domain name and associated IP address.

Database Traffic Types

The dynamic database includes the following types of addresses:

- Ads—These are advertising networks that deliver banner ads, interstitials, rich media ads, pop-ups, and pop-unders for websites, spyware and adware. Some of these networks send ad-oriented HTML emails and email verification services.
- Data Tracking—These are sources associated with companies and websites that offer data tracking and metrics services to websites and other online entities. Some of these also run small advertising networks.
- Spyware—These are sources that distribute spyware, adware, greyware, and other potentially unwanted advertising software. Some of these also run exploits to install such software.
- Malware—These are sources that use various exploits to deliver adware, spyware and other malware to victim computers. Some of these are associated with rogue online vendors and distributors of dialers which deceptively call premium-rate phone numbers.
- Adult—These are sources associated with adult networks/services offering web hosting for adult content, advertising, content aggregation, registration & billing, and age verification. These may be tied to distribution of adware, spyware, and dialers.
- Bot and Threat Networks—These are rogue systems that control infected computers. They are either systems hosted on threat networks or systems that are part of the botnet itself.

Information About the Static Database

You can manually enter domain names or IP addresses (host or subnet) that you want to tag as bad names in a blacklist. Static blacklist entries are always designated with a Very High threat level. You can also enter names or IP addresses in a whitelist, so that names or addresses that appear on both the *dynamic* blacklist and the whitelist are identified only as whitelist addresses in syslog messages and reports. Note that you see syslog messages for whitelisted addresses even if the address is not also in the dynamic blacklist.

When you add a domain name to the static database, the ASA waits 1 minute, and then sends a DNS request for that domain name and adds the domain name/IP address pairing to the *DNS host cache*. (This action is a background process, and does not affect your ability to continue configuring the ASA). We recommend also enabling DNS packet inspection with Botnet Traffic Filter snooping. The ASA uses Botnet Traffic Filter snooping instead of the regular DNS lookup to resolve static blacklist domain names in the following circumstances:

- The ASA DNS server is unavailable.
- A connection is initiated during the 1 minute waiting period before the ASA sends the regular DNS request.

If DNS snooping is used, when an infected host sends a DNS request for a name on the static database, the ASA looks inside the DNS packets for the domain name and associated IP address and adds the name and IP address to the DNS reverse lookup cache.

If you do not enable Botnet Traffic Filter snooping, and one of the above circumstances occurs, then that traffic will not be monitored by the Botnet Traffic Filter.

Information About the DNS Reverse Lookup Cache and DNS Host Cache

When you use the dynamic database with DNS snooping, entries are added to the DNS reverse lookup cache. If you use the static database, entries are added to the DNS host cache (see Information About the Static Database, page 24-3 about using the static database with DNS snooping and the DNS reverse lookup cache).

Entries in the DNS reverse lookup cache and the DNS host cache have a time to live (TTL) value provided by the DNS server. The largest TTL value allowed is 1 day (24 hours); if the DNS server provides a larger TTL, it is truncated to 1 day maximum.

For the DNS reverse lookup cache, after an entry times out, the ASA renews the entry when an infected host initiates a connection to a known address, and DNS snooping occurs.

For the DNS host cache, after an entry times out, the ASA periodically requests a refresh for the entry.

For the DNS host cache, the maximum number of blacklist entries and whitelist entries is 1000 each. The number of entries in the DNS reverse lookup cache varies per model.

How the Botnet Traffic Filter Works

Figure 24-1 shows how the Botnet Traffic Filter works with the dynamic database plus DNS inspection with Botnet Traffic Filter snooping.

Figure 24-1 How the Botnet Traffic Filter Works with the Dynamic Database

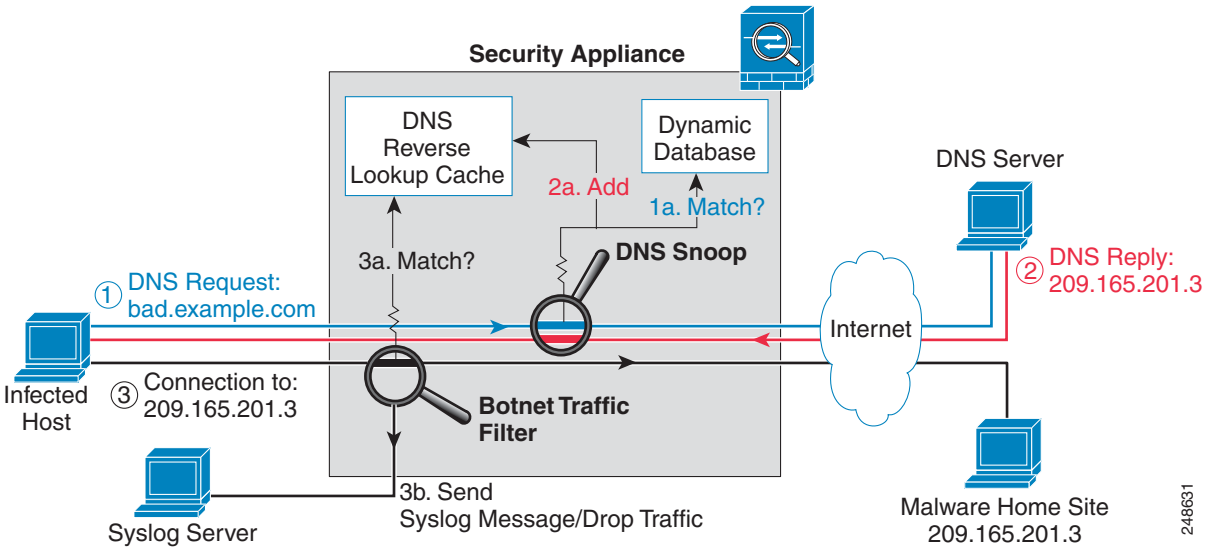
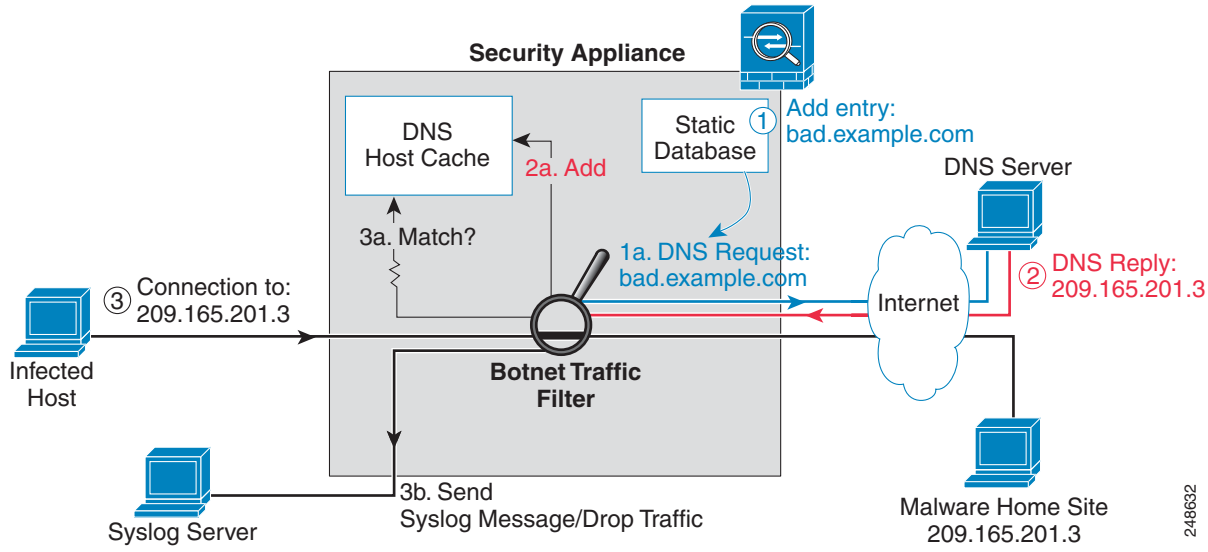


Figure 24-2 shows how the Botnet Traffic Filter works with the static database.

Figure 24-2 How the Botnet Traffic Filter Works with the Static Database



Licensing Requirements for the Botnet Traffic Filter

The following table shows the licensing requirements for this feature:

Model	License Requirement
ASAv	Standard or Premium License.
All other models	You need the following licenses: • Botnet Traffic Filter License. • Strong Encryption (3DES/AES) License to download the dynamic database.

Prerequisites for the Botnet Traffic Filter

To use the dynamic database, identify a DNS server for the ASA so that it can access the Cisco update server URL. In multiple context mode, the system downloads the database for all contexts using the admin context interface; be sure to identify a DNS server in the admin context.

Guidelines and Limitations

This section includes the guidelines and limitations for this feature.

Context Mode Guidelines

Supported in single and multiple context mode.

Firewall Mode Guidelines

Supported in routed and transparent firewall mode.

Failover Guidelines

Does not support replication of the DNS reverse lookup cache, DNS host cache, or the dynamic database in Stateful Failover.

IPv6 Guidelines

Does not support IPv6.

Additional Guidelines and Limitations

- TCP DNS traffic is not supported.
- You can add up to 1000 blacklist entries and 1000 whitelist entries in the static database.
- The packet tracer is not supported.

Default Settings

By default, the Botnet Traffic Filter is disabled, as is use of the dynamic database.

For DNS inspection, which is enabled by default, Botnet Traffic Filter snooping is disabled by default.

Configuring the Botnet Traffic Filter

This section includes the following topics:

Task Flow for Configuring the Botnet Traffic Filter

To configure the Botnet Traffic Filter, perform the following steps:

Step 1 Enable use of the dynamic database. See Configuring the Dynamic Database, page 24-8.

This procedure enables database updates from the Cisco update server, and also enables use of the downloaded dynamic database by the ASA. Disallowing use of the downloaded database is useful in multiple context mode so you can configure use of the database on a per-context basis.

Step 2 (Optional) Add static entries to the database. See Adding Entries to the Static Database, page 24-9.

This procedure lets you augment the dynamic database with domain names or IP addresses that you want to blacklist or whitelist. You might want to use the static database instead of the dynamic database if you do not want to download the dynamic database over the Internet.

Step 3 Enable DNS snooping. See Enabling DNS Snooping, page 24-9.

This procedure enables inspection of DNS packets, compares the domain name with those in the dynamic database or the static database (when a DNS server for the ASA is unavailable), and adds the name and IP address to the DNS reverse lookup cache. This cache is then used by the Botnet Traffic Filter when connections are made to the suspicious address.

Step 4 Enable traffic classification and actions for the Botnet Traffic Filter. See Enabling Traffic Classification and Actions for the Botnet Traffic Filter, page 24-10.

This procedure enables the Botnet Traffic Filter, which compares the source and destination IP address in each initial connection packet to the IP addresses in the dynamic database, static database, DNS reverse lookup cache, and DNS host cache, and sends a syslog message or drops any matching traffic.

Step 5 (Optional) Block traffic manually based on syslog message information. See Blocking Botnet Traffic Manually, page 24-12.

If you choose not to block malware traffic automatically, you can block traffic manually by configuring an access rule to deny traffic, or by using the **shun** command in the Command Line Interface tool to block all traffic to and from a host.

Configuring the Dynamic Database

This procedure enables database updates, and also enables use of the downloaded dynamic database by the ASA. In multiple context mode, the system downloads the database for all contexts using the admin context interface. You can configure *use* of the database on a per-context basis.

By default, downloading and using the dynamic database is disabled.

Prerequisites

Enable ASA use of a DNS server in the Device Management > DNS > DNS Client > DNS Lookup area. In multiple context mode, the system downloads the database for all contexts using the admin context interface; be sure to identify a DNS server in the admin context.

Detailed Steps

Step 1 Enable downloading of the dynamic database.

- In Single mode, choose the **Configuration > Firewall > Botnet Traffic Filter > Botnet Database** pane, then check the **Enable Botnet Updater Client** check box.
- In multiple context mode in the System execution space, choose the **Configuration > Device Management > Botnet Database** pane, then check the **Enable Botnet Updater Client** check box.

This setting enables downloading of the dynamic database from the Cisco update server. In multiple context mode, enter this command in the system execution space. If you do not have a database already installed on the ASA, it downloads the database after approximately 2 minutes. The update server determines how often the ASA polls the server for future updates, typically every hour.

Step 2 (Multiple context mode only) In multiple context mode, click **Apply**. Then change to the context where you want to configure the Botnet Traffic Filter by double-clicking the context name in the Device List.

Step 3 In the Configuration > Firewall > Botnet Traffic Filter > Botnet Database > Dynamic Database Configuration area, check the **Use Botnet data dynamically downloaded from updater server** check box.

Step 4 Click **Apply**.

Step 5 (Optional) If you want to later remove the database from running memory, perform the following steps:

a. Disable use of the database by unchecking the **Use Botnet data dynamically downloaded from updater server** check box.

b. Click **Apply**.

c. Click **Purge Botnet Database**.

d. To redownload the database, re-check the **Use Botnet data dynamically downloaded from updater server** check box.

e. Click **Apply**.

Note The Fetch Botnet Database button is for testing purposes only; it downloads and verifies the dynamic database, but does not store it in running memory.

For information about the Search Dynamic Database area, see Searching the Dynamic Database,

page 24-13.

What to Do Next

See Adding Entries to the Static Database, page 24-9.

Adding Entries to the Static Database

The static database lets you augment the dynamic database with domain names or IP addresses that you want to blacklist or whitelist. Static blacklist entries are always designated with a Very High threat level. See Information About the Static Database, page 24-3 for more information.

Prerequisites

- In multiple context mode, perform this procedure in the context execution space.
- Enable ASA use of a DNS server in the Device Management > DNS > DNS Client > DNS Lookup area. In multiple context mode, enable DNS per context.

Detailed Steps

Step 1 Choose the **Configuration > Firewall > Botnet Traffic Filter > Black** or White List pane, click **Add** for the Whitelist or Blacklist.

The Enter hostname or IP Address dialog box appears.

Step 2 In the Addresses field, enter one or more domain names, IP addresses, and IP address/netmasks.

Enter multiple entries separated by commas, spaces, lines, or semi-colons. You can enter up to 1000 entries for each type.

Step 3 Click **OK**.

Step 4 Click **Apply**.

What to Do Next

See Enabling DNS Snooping, page 24-9.

Enabling DNS Snooping

This procedure enables inspection of DNS packets and enables Botnet Traffic Filter snooping, which compares the domain name with those on the dynamic database or static database, and adds the name and IP address to the Botnet Traffic Filter DNS reverse lookup cache. This cache is then used by the Botnet Traffic Filter when connections are made to the suspicious address.

Prerequisites

- In multiple context mode, perform this procedure in the context execution space.

- You must first configure DNS inspection for traffic that you want to snoop using the Botnet Traffic Filter. See DNS Inspection, page 9-1 and Chapter 1, "Service Policy," for detailed information about configuring advanced DNS inspection options using the Modular Policy Framework.

Note You can also configure DNS snooping directly in the Configuration > Firewall > Service Policy Rules > Rule Actions > Protocol Inspection > Select DNS Inspect Map dialog box by checking the **Enable Botnet traffic filter DNS snooping** check box.

Restrictions

TCP DNS traffic is not supported.

Default DNS Inspection Configuration and Recommended Configuration

The default configuration for DNS inspection inspects all UDP DNS traffic on all interfaces, and does not have DNS snooping enabled.

We suggest that you enable DNS snooping only on interfaces where external DNS requests are going. Enabling DNS snooping on all UDP DNS traffic, including that going to an internal DNS server, creates unnecessary load on the ASA.

For example, if the DNS server is on the outside interface, you should enable DNS inspection with snooping for all UDP DNS traffic on the outside interface.

Detailed Steps

Step 1 Choose the **Configuration > Firewall > Botnet Traffic Filter > DNS Snooping** pane.

All existing service rules that include DNS inspection are listed in the table.

Step 2 For each rule for which you want to enable DNS snooping, in the DNS Snooping Enabled column, check the check box.

Step 3 Click **Apply**.

What to Do Next

See Enabling Traffic Classification and Actions for the Botnet Traffic Filter, page 24-10.

Enabling Traffic Classification and Actions for the Botnet Traffic Filter

This procedure enables the Botnet Traffic Filter. The Botnet Traffic Filter compares the source and destination IP address in each initial connection packet to the following:

- Dynamic database IP addresses
- Static database IP addresses
- DNS reverse lookup cache (for dynamic database domain names)
- DNS host cache (for static database domain names)

When an address matches, the ASA sends a syslog message. The only additional action currently available is to drop the connection.

Prerequisites

In multiple context mode, perform this procedure in the context execution space.

Recommended Configuration

Although DNS snooping is not required, we recommend configuring DNS snooping for maximum use of the Botnet Traffic Filter (see Enabling DNS Snooping, page 24-9). Without DNS snooping for the dynamic database, the Botnet Traffic Filter uses only the static database entries, plus any IP addresses in the dynamic database; domain names in the dynamic database are not used.

We recommend enabling the Botnet Traffic Filter on all traffic on the Internet-facing interface, and enabling dropping of traffic with a severity of moderate and higher.

Detailed Steps

Step 1 Choose the **Configuration > Firewall > Botnet Traffic Filter > Traffic Settings** pane.

Step 2 To enable the Botnet Traffic Filter on specified traffic, perform the following steps:

a. In the Traffic Classification area, check the **Traffic Classified** check box for each interface on which you want to enable the Botnet Traffic Filter.

You can configure a global classification that applies to all interfaces by checking the Traffic Classified check box for Global (All Interfaces). If you configure an interface-specific classification, the settings for that interface overrides the global setting.

b. For each interface, from the **ACL Used** drop-down list choose either --ALL TRAFFIC-- (the default), or any ACL configured on the ASA.

For example, you might want to monitor all port 80 traffic on the outside interface.

To add or edit ACLs, click **Manage ACL** to bring up the ACL Manager. See the general operations configuration guide for more information.

Step 3 (Optional) To treat greylisted traffic as blacklisted traffic for action purposes, in the Ambiguous Traffic Handling area, check the **Treat ambiguous (greylisted) traffic as malicious (blacklisted) traffic** check box.

If you do not enable this option, greylisted traffic will not be dropped if you configure a rule in the Blacklisted Traffic Actions area. See Botnet Traffic Filter Address Types, page 24-2 for more information about the greylist.

Step 4 (Optional) To automatically drop malware traffic, perform the following steps.

To manually drop traffic, see Blocking Botnet Traffic Manually, page 24-12.

a. In the Blacklisted Traffic Actions area, click **Add**.

The Add Blacklisted Traffic Action dialog box appears.

b. From the Interface drop-down list, choose the interface on which you want to drop traffic. Only interfaces on which you enabled Botnet Traffic Filter traffic classification are available.

c. In the Threat Level area, choose one of the following options to drop traffic specific threat levels. The default level is a range between Moderate and Very High.

Note We highly recommend using the default setting unless you have strong reasons for changing the setting.

- Value—Specify the threat level you want to drop:
  - **Very Low**
  - **Low**
  - **Moderate**
  - **High**
  - **Very High**

Note Static blacklist entries are always designated with a Very High threat level.

- Range—Specify a range of threat levels.

d. In the ACL Used area, from the **ACL Used** drop-down list choose either --ALL TRAFFIC-- (the default), or any ACL configured on the ASA.

Note Be sure the ACL is a subset of the traffic you specified in the Traffic Classification area.

To add or edit ACLs, click **Manage** to bring up the ACL Manager. See general operations configuration guide for more information.

e. Click **OK**.

You return to the Traffic Settings pane.

f. If you want to apply additional rules to a given interface, repeat steps a through e.

Make sure you do not specify overlapping traffic in multiple rules for a given interface. Because you cannot control the exact order that rules are matched, overlapping traffic means you do not know which command will be matched. For example, do not specify both a rule that matches --ALL TRAFFIC-- as well as a command with and ACL for a given interface. In this case, the traffic might never match the command with the ACL. Similarly, if you specify multiple commands with ACLs, make sure each ACL is unique, and that the networks do not overlap.

Step 5 Click **Apply**.

Blocking Botnet Traffic Manually

If you choose not to block malware traffic automatically (see Enabling Traffic Classification and Actions for the Botnet Traffic Filter, page 24-10), you can block traffic manually by configuring an access rule to deny traffic, or by using the **shun** command in the Command Line Interface tool to block all traffic to and from a host. For some messages, you can automatically configure access rules in ASDM.

For example, you receive the following syslog message:

```
ASA-4-338002: Dynamic Filter permitted black listed TCP traffic from inside:10.1.1.45/6798
(209.165.201.1/7890) to outside:209.165.202.129/80 (209.165.202.129/80), destination
209.165.202.129 resolved from dynamic list: bad.example.com
```

You can then perform one of the following actions:

- Create an access rule to deny traffic.

For example, using the syslog message above, you might want to deny traffic from the infected host at 10.1.1.45 to the malware site at 209.165.202.129. Or, if there are many connections to different blacklisted addresses, you can create an ACL to deny all traffic from 10.1.1.45 until you resolve the infection on the host computer.

For the following syslog messages, a reverse access rule can be automatically created from the Real Time Log Viewer:

- 338001, 338002, 338003, 338004 (blacklist)
- 338201, 338202 (greylist)

See the general operations configuration guide and Chapter 3, "Access Rules," for more information about creating an access rule.

Note If you create a reverse access rule form a Botnet Traffic Filter syslog message, and you do not have any other access rules applied to the interface, then you might inadvertently block all traffic. Normally, without an access rule, all traffic from a high security to a low security interface is allowed. But when you apply an access rule, all traffic is denied except traffic that you explicitly permit. Because the reverse access rule is a deny rule, be sure to edit the resulting access policy for the interface to permit other traffic.

ACLs block all future connections. To block the current connection, if it is still active, enter the **clear conn** command. For example, to clear only the connection listed in the syslog message, enter the **clear conn address 10.1.1.45 address 209.165.202.129** command. See the command reference for more information.

- Shun the infected host.

  Shunning blocks all connections from the host, so you should use an ACL if you want to block connections to certain destination addresses and ports. To shun a host, enter the following command in Tools > Command Line Interface. To drop the current connection as well as blocking all future connections, enter the destination address, source port, destination port, and optional protocol.

  ```
  shun src_ip [dst_ip src_port dest_port [protocol]]
  ```

  For example, to block future connections from 10.1.1.45, and also drop the current connection to the malware site in the syslog message, enter:

  ```
  shun 10.1.1.45 209.165.202.129 6798 80
  ```

After you resolve the infection, be sure to remove the ACL or the shun. To remove the shun, enter **no shun** *src_ip*.

Searching the Dynamic Database

If you want to check if a domain name or IP address is included in the dynamic database, you can search the database for a string.

Detailed Steps

Step 1 Go to the Search Dynamic Database area:

- In Single mode or within a context, choose the **Configuration > Firewall > Botnet Traffic Filter > Botnet Database Update** pane.

- In multiple context mode in the System execution space, choose the **Configuration > Device Management > Botnet Database Update** pane.

Step 2 In the Search string field, enter a string at least 3 characters in length, and click **Find Now**.

The first two matches are shown. To refine your search for a more specific match, enter a longer string.

Step 3 To clear the displayed matches and the search string, click **Clear**, or you can just enter a new string and click **Find Now** to get a new display.

Monitoring the Botnet Traffic Filter

Whenever a known address is classified by the Botnet Traffic Filter, then a syslog message is generated. You can also monitor Botnet Traffic Filter statistics and other parameters by entering commands on the ASA. This section includes the following topics:

- Botnet Traffic Filter Syslog Messaging, page 24-14
- Botnet Traffic Filter Monitor Panes, page 24-15

Botnet Traffic Filter Syslog Messaging

The Botnet Traffic Filter generates detailed syslog messages numbered 338*nnn*. Messages differentiate between incoming and outgoing connections, blacklist, whitelist, or greylist addresses, and many other variables. (The greylist includes addresses that are associated with multiple domain names, but not all of these domain names are on the blacklist.)

See the syslog messages guide for detailed information about syslog messages.

For the following syslog messages, a reverse access rule can be automatically created from the Real Time Log Viewer:

- 338001, 338002, 338003, 338004 (blacklist)
- 338201, 338202 (greylist)

Botnet Traffic Filter Monitor Panes

To monitor the Botnet Traffic Filter, see the following panes:

Command	Purpose
Home > Firewall Dashboard	Shows the Top Botnet Traffic Filter Hits, which shows reports of the top 10 malware sites, ports, and infected hosts. This report is a snapshot of the data, and may not match the top 10 items since the statistics started to be collected. If you right-click an IP address, you can invoke the whois tool to learn more about the botnet site. • Top Malware Sites—Shows top malware sites. • Top Malware Ports—Shows top malware ports. • Top Infected Hosts—Shows the top infected hosts.
Monitoring > Botnet Traffic Filter > Statistics	Shows how many connections were classified as whitelist, blacklist, and greylist connections, and how many connections were dropped. (The greylist includes addresses that are associated with multiple domain names, but not all of these domain names are on the blacklist.) The Details button shows how many packets at each threat level were classified or dropped.
Monitoring > Botnet Traffic Filter > Real-time Reports	Generates reports of the top 10 malware sites, ports, and infected hosts monitored. The top 10 malware-sites report includes the number of connections dropped, and the threat level and category of each site. This report is a snapshot of the data, and may not match the top 10 items since the statistics started to be collected. If you right-click a site IP address, you can invoke the whois tool to learn more about the malware site. Reports can be saved as a PDF file.
Monitoring > Botnet Traffic Filter > Infected Hosts	Generates reports about infected hosts. These reports contain detailed history about infected hosts, showing the correlation between infected hosts, visited malware sites, and malware ports. The Maximum Connections option shows the 20 infected hosts with the most number of connections. The Latest Activity option shows the 20 hosts with the most recent activity. The Highest Threat Level option shows the 20 hosts that connected to the malware sites with the highest threat level. The Subnet option shows up to 20 hosts within the specified subnet. Reports can be saved as a PDF file, as either the Current View or the Whole Buffer. The Whole Buffer option shows all buffered infected-hosts information.
Monitoring > Botnet Traffic Filter > Updater Client	Shows information about the updater server, including the server IP address, the next time the ASA will connect with the server, and the database version last installed.
Monitoring > Botnet Traffic Filter > DNS Snooping	Shows the Botnet Traffic Filter DNS snooping actual IP addresses and names. All inspected DNS data is included in this output, and not just matching names in the blacklist. DNS data from static entries are not included.

Command	Purpose
Monitoring > Botnet Traffic Filter > Dynamic Database	Shows information about the dynamic database, including when the dynamic database was last downloaded, the version of the database, how many entries the database contains, and 10 sample entries.
Monitoring > Botnet Traffic Filter > ASP Table Hits	Shows the Botnet Traffic Filter rules that are installed in the accelerated security path.

Where to Go Next

- To configure the syslog server, see the general operations configuration guide.
- To block connections with an access rule, see Chapter 3, "Access Rules."

Feature History for the Botnet Traffic Filter

Table 24-1 lists each feature change and the platform release in which it was implemented. ASDM is backwards-compatible with multiple platform releases, so the specific ASDM release in which support was added is not listed.

Table 24-1 Feature History for the Botnet Traffic Filter

Feature Name	Platform Releases	Feature Information
Botnet Traffic Filter	8.2(1)	This feature was introduced.
Automatic blocking, and blacklist category and threat level reporting.	8.2(2)	The Botnet Traffic Filter now supports automatic blocking of blacklisted traffic based on the threat level. You can also view the category and threat level of malware sites in statistics and reports. The 1 hour timeout for reports for top hosts was removed; there is now no timeout. The following screens were introduced or modified: Configuration > Firewall > Botnet Traffic Filter > Traffic Settings, and Monitoring > Botnet Traffic Filter > Infected Hosts.