



Configuring the IP Permit List

This chapter describes how to configure the IP permit list on the Catalyst enterprise LAN switches.



Note

For complete syntax and usage information for the commands used in this chapter, refer to the *Catalyst 5000 Family Command Reference*.

This chapter consists of these sections:

- [Understanding the IP Permit List, page 19-1](#)
- [IP Permit List Default Configuration, page 19-2](#)
- [Configuring the IP Permit List, page 19-2](#)

Understanding the IP Permit List

IP permit prevents inbound Telnet and SNMP access to the switch from unauthorized source IP addresses. Telnet attempts from unauthorized source IP addresses are denied a connection. SNMP requests from unauthorized IP addresses receive no response; the request times out. All other TCP/IP services (such as IP traceroute and IP ping) continue to work normally when you enable the IP permit list. Outbound Telnet, Trivial File Transfer Protocol (TFTP), and other IP-based services are unaffected by the IP permit list.

If you want to log unauthorized access attempts to the console or a syslog server, you must change the logging severity level for IP, as described in the [“Enabling IP Permit List” section on page 19-3](#). If you want to generate SNMP traps when unauthorized access attempts are made, you must enable IP permit list (ippermit) SNMP traps, as described in the [“Enabling IP Permit List” section on page 19-3](#). Multiple access attempts from the same unauthorized host only trigger notifications every ten minutes.

You can configure up to 100 entries in the permit list. Each entry consists of an IP address and subnet mask pair in dotted decimal format and information on whether the IP address is part of the SNMP permit list, Telnet permit list, or both lists. The bits set to one in the mask are checked for a match with the source IP address of incoming packets, while the bits set to zero are not checked. This process allows wildcard addresses to be specified.

If you do not specify the mask for an IP permit list entry, or if you enter a host name instead of an IP address, the mask has an implicit value of all bits set to one (255.255.255.255 or 0xffffffff), which matches only the IP address of that host.

If you do not specify SNMP or Telnet for the type of permit list for the IP address, the IP address is added to both the SNMP and Telnet permit lists.

You can specify the same IP address in more than one entry in the permit list if the masks are different. The mask is applied to the address before it is stored in NVRAM, so that entries that have the same effect (but different addresses) are not stored. When you add this address to the IP permit list, the system displays the address after the mask is applied.

IP Permit List Default Configuration

Table 19-1 shows the default IP permit list configuration.

Table 19-1 IP Permit List Default Configuration

Feature	Default Value
IP permit list enable state	Disabled
Permit list entries	None configured
IP syslog message severity level	2
SNMP IP permit trap (ippermit)	Disabled

Configuring the IP Permit List

These sections describe how to configure IP permit list:

- [Adding IP Addresses to the IP Permit List, page 19-2](#)
- [Enabling IP Permit List, page 19-3](#)
- [Disabling the IP Permit List, page 19-4](#)
- [Clearing an IP Permit List Entry, page 19-4](#)

Adding IP Addresses to the IP Permit List

An IP address can be added to the SNMP permit list, the Telnet permit list, or both lists.

To add IP addresses to an IP permit list, perform this task in privileged mode:

	Task	Command
Step 1	Specify the IP addresses to add to the IP permit list.	set ip permit <i>ip_address</i> [<i>mask</i>] [all snmp telnet ssh]
Step 2	Verify the IP permit list configuration.	show ip permit



Note

You can use the **set security acl** command to more efficiently set permit lists.

This example shows how to add IP addresses to IP permit list and verify the configuration:

```
Console> (enable) set ip permit 172.16.0.0 255.255.0.0 telnet
172.16.0.0 with mask 255.255.0.0 added to telnet permit list.
Console> (enable) set ip permit 172.20.52.32 255.255.255.224 snmp
172.20.52.32 with mask 255.255.255.224 added to snmp permit list.
```

```

Console> (enable) set ip permit 172.20.52.3 all
172.20.52.3 added to IP permit list.

Console> (enable) show ip permit
Telnet permit list feature enabled.
Snmp permit list feature enabled.
Permit List      Mask                Access Type
-----
172.16.0.0       255.255.0.0         telnet
172.20.52.3
172.20.52.32     255.255.255.224    snmp

Denied IP Address  Last Accessed Time  Type      Telnet Count  SNMP Count
-----
172.100.101.104   01/20/97,07:45:20  SNMP      14             1430
172.187.206.222   01/21/97,14:23:05  Telnet    7              236

Console> (enable)

```

Enabling IP Permit List

You can enable either the SNMP permit list, the Telnet permit list, or both lists. If you do not specify a permit list, both the SNMP and Telnet permit lists are enabled.



Caution

Before enabling the IP permit list, make sure you add the IP address of your workstation or network management system to the permit list, especially when configuring through SNMP. Failure to do so could result in your connection being dropped by the switch you are configuring. We recommend you disable IP permit list before clearing IP permit entries or host addresses.

To enable IP permit list on the switch, perform this task in privileged mode:

	Task	Command
Step 1	Enable the IP permit list.	set ip permit enable [all snmp telnet]
Step 2	If desired, enable the IP permit trap to generate traps for unauthorized access attempts.	set snmp trap enable ippermit
Step 3	If desired, configure the logging level to see syslog messages for unauthorized access attempts.	set logging level ip 4 default
Step 4	Verify the IP permit list configuration.	show ip permit show snmp

This example shows how to enable the IP permit list and verify the configuration:

```

Console> (enable) set ip permit enable
IP permit list enabled.
Console> (enable) set snmp trap enable ippermit
SNMP IP Permit traps enabled.
Console> (enable) set logging level ip 4 default
System logging facility <ip> set to severity 4(warnings)
Console> (enable) show ip permit
Telnet permit list feature enabled.
Snmp permit list feature disabled.

```

```

Permit List           Mask           Access-Type
-----
172.16.0.0           255.255.0.0    telnet
172.20.52.3
172.20.52.32        255.255.255.224  snmp

Denied IP Address    Last Accessed Time  Type    Telnet Count  SNMP Count
-----
172.100.101.104     01/20/97,07:45:20  SNMP           14           1430
172.187.206.222     01/21/97,14:23:05  Telnet          7            236

Console> (enable) show snmp
RMON:                               Disabled
Extended Rmon:                      Extended RMON module is not present
Traps Enabled:
ippermit
Port Traps Enabled: None

Community-Access      Community-String
-----
read-only             public
read-write            private
read-write-all       secret

Trap-Rec-Address      Trap-Rec-Community
-----

Console> (enable)

```

Disabling the IP Permit List

To disable the IP permit list on the switch, perform this task in privileged mode:

	Task	Command
Step 1	Disable the IP permit list on the switch.	set ip permit disable [all snmp telnet]
Step 2	Verify the IP permit list configuration.	show ip permit

This example shows how to disable the IP permit list:

```

Console> (enable) set ip permit disable
IP permit list disabled.
Console> (enable)

```

Clearing an IP Permit List Entry

An IP address can be cleared from the SNMP permit list, the Telnet permit list, or both lists. If you do not specify which permit list to clear the IP address from, the IP address is deleted from both permit lists.



Caution

Disable the IP permit list before clearing IP permit entries or host addresses. This action prevents your connection from being dropped by the switch you are configuring in case you clear your current IP address.

To clear an IP permit list entry, perform this task in privileged mode:

	Task	Command
Step 1	Disable the IP permit list.	set ip permit disable [all snmp telnet]
Step 2	Specify the IP address to remove from the IP permit list.	clear ip permit { <i>ip_address</i> [<i>mask</i>] all} [all snmp telnet]
Step 3	Verify the IP permit list configuration.	show ip permit

This example shows how to clear an IP permit list entry:

```

Console> (enable) clear ip permit 172.100.101.102
172.100.101.102 cleared from IP permit list.
Console> (enable) clear ip permit 172.160.161.0 255.255.192.0 snmp
172.160.128.0 with mask 255.255.192.0 cleared from snmp permit list.
Console> (enable) clear ip permit 172.100.101.102 telnet
172.100.101.102 cleared from telnet permit list.
Console> (enable) clear ip permit all
IP permit list cleared.
Console> (enable)

```

