

# 10 HRE-X Filtering Commands

The following chapter contains information on Text-Based HRE-X Filtering commands. Topics include:

- Configuring global IP and IPX groups
- Configuring service filtering groups
- Viewing global filtering parameters and filtering rules

Refer to the command task list below to find the page number for a specific task. If you would like to reference configuration tasks based on traditional UI commands, refer to Appendix A.

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## filter global ip

### Command Usage

Configure the default disposition (allow or deny) for IP flows that do not have any corresponding filtering rules.

### Syntax Options

<b>filter global ip {allow   deny}</b>
<p><u>Definitions:</u> <b>allow</b> = specifies that IP flows without any filtering rules will be allowed on the switch <b>deny</b> = specifies that IP flows without any filtering rules will be denied on the switch</p> <p><u>Switch Default:</u> <b>allow   deny</b> = allow</p> <p><u>Command Examples:</u> <b>filter global ip allow</b> <b>filter global ip deny</b></p>

### Corresponding UI Command

fltcfg

### Remarks

Changes will not take effect until you either execute the **filter commit** command or reboot the switch.

---

## filter global ipx

### Command Usage

Configure the default disposition (allow or deny) for IPX flows that do not have any corresponding filtering rules.

### Syntax Options

<b>filter global ipx {allow   deny}</b>
---

Definitions:

**allow** = specifies that IPX flows without any filtering rules will be allowed on the switch

**deny** = specifies that IPX flows without any filtering rules will be denied on the switch

Switch Default:

**allow | deny** = allow

Command Examples:

**filter global ipx allow**

**filter global ipx deny**

### Corresponding UI Command

fltcfg

### Remarks

Changes will not take effect until you either execute the **filter commit** command or reboot the switch.

---

## filter global precedence

### Command Usage

Configure which IP address (destination or source) rule will take precedence when there is a conflict between two equally specific filtering rules. (Does not apply to IPX traffic.)

### Syntax Options

<b>filter global precedence {destination   source}</b>
--

Definitions:

**destination** = specifies that the destination rule will take precedence when there are conflicting rules

**source** = specifies that the source rule will take precedence when there are conflicting rules

Switch Default:

**destination | source = destination**

Command Examples:

**filter global precedence destination**

**filter global precedence source**

### Corresponding UI Command

fltcfg

### Remarks

Changes will not take effect until you either execute the **filter commit** command or reboot the switch.

---

## filter global groups

### Command Usage

Configure which IP and IPX groups will be active after the **filter commit** command is entered.

### Syntax Options

**filter global groups** [*list*]

#### Definitions:

*list* = indicates global IP or IPX groups; a group or group list must be included; multiple groups should be separated by commas (for example: **groups group1,group2,group3**); to remove a group from the active configuration, use this option without the group name.

#### ◆ Syntax Note ◆

If you leave out the group list, the current list(s) are removed from the active configuration (but not deleted from the configuration).

#### Command Example:

**filter global groups ipgroup1,ipx\_group1**

### Corresponding UI Command

**fltcfg**

### Remarks

List only global groups (IP or IPX) in the **filter global groups** command line. To list service groups, use the **filter global services** command.

Changes will not take effect until you either execute the **filter commit** command or reboot the switch.

---

## filter global services

### Command Usage

Configure which IP service groups will be active when the **filter commit** command is entered.

### Syntax Options

**filter global services** [*list*]

#### Definitions:

*list* = indicates service groups; a service group or group list must be included; multiple service groups should be separated by commas (for example: **services service1,service2**); to remove a group from the active configuration, use this option without the group name.

#### ♦ Syntax Note ♦

If you leave out the service list, but include the **services** option, the current list(s) are removed from the active configuration (but not deleted from the configuration).

#### Command Example:

**filter global services ftp\_group1**

### Corresponding UI Command

fltcfg

### Remarks

Changes will not take effect until you either execute the **filter commit** command or reboot the switch.

---

## filter

### Command Usage

Enable or disable HRE-X filtering.

### Syntax Options

<b>filter {enable   disable}</b>
----------------------------------

#### Definitions:

**enable** = enables HRE-X filtering

**disable** = disables HRE-X filtering

#### Switch Default:

**enable | disable = enable**

#### Command Examples:

**filter enable**

**filter disable**

### Corresponding UI Command

**fltcfg**

### Remarks

Changes will not take effect until you either execute the **filter commit** command or reboot the switch.

---

**filter commit****Command Usage**

Activate current changes to the configuration.

**Syntax Options**

**filter commit** (No additional syntax options are used.)

**Corresponding UI Command**

**fltcommit**



# Configuring Groups and Filtering Rules

This section describes commands for setting up HRE-X filtering groups and rules.

**filter group**

**Command Usage**

Configure global IP or IPX groups.

**Syntax Options**

**filter group** <group-name> [destination | source] {ip | ipx}

Definitions:  
*group-name* = name of filter group (e.g., **ipgroup1**)  
**destination** = for an IP rule, indicates the first address in the **filter rule** command is a destination address, rules are grouped by this address  
**source** = for an IP rule, indicates the first address in the **filter rule** command is a source address, rules are grouped by this address  
**ip** = specifies IP protocol for the filter group  
**ipx** = specifies IPX protocol for the filter group

Command and Switch Default:  
**destination | source** = destination

Command Examples:  
**filter group ipgroup1 destination ip**  
**filter group ipgroup2 source ip**  
**filter group ipx\_group1 destination**

**Corresponding UI Command**

**fltipmod, fltipxmod**

**Remarks**

Use the **filter rule** command to add rules to groups.  
 To activate configured groups, be sure they are listed in the **filter global groups** command.

### filter rule

#### Command Usage

Add rules to global IP or IPX groups. (Use the **filter group** command to add new groups.)

#### Syntax Options

```
filter rule <group-name> {address1 | all} [!(ip-mask1)] {address2 | all} [!(ip-mask2)] [allow | deny]
```

##### Definitions:

*group-name* = name of filter group (e.g., **ipgroup1**)

*address1* = for an IP rule, the source or destination address depending on the **filter group** definition; for an IPX rule, the network address

*!(ip-mask1)* = optional for IP, ignored for IPX; the address mask for *address1*.

*address2* = for an IP rule, the source or destination address that corresponds to *address1*; for an IPX rule, the node address

*!(ip-mask2)* = optional for IP, ignored for IPX; the address mask for *address2*.

**all** = for an IP rule, all addresses for the destination or source; for an IPX rule, all network or node addresses.

**allow** = allows packets with this address to be routed

**deny** = blocks packets with this address from being routed

##### Command Default:

**allow | deny** = **allow**

##### Command Examples:

```
filter rule ipgroup1 193.201.184.39 all deny
```

```
filter rule ipgroup2 129.3.4.5/ff.ff.ff 129.6.0.0 deny
```

```
filter rule ipx_group1 00001000 67:89:01:aa:bb:cc allow
```

#### Corresponding UI Commands

fltipmod, fltipxmod

#### Remarks

Use the **filter group** command to add new groups.

**filter service**

**Command Usage**

Configure service filtering groups.

**Syntax Options**

**filter service** <*service-name*> <**groups** *group-list*> <**ports** *port-list*>

Definitions:

*service-name* = name of the service you want to add; do not use **ftp** or **telnet** as group names

**groups** *group-list* = list of global IP groups associated with the service group; a group or group list must be included; multiple groups should be separated by commas (for example: **groups group1,group2,group3**)

**ports** *port-list* = list of ports associated with the service; a port or ports must be included; multiple ports should be separated by commas (for example: **ports port1,port2**)

Command Examples:

**filter service ftp\_group1 groups ipgroup2 ports 20,21**

**filter service telnet\_gr1 groups ipgroup,ipgroup3 ports 23**

**filter service ftp\_group1 groups ports**

**Corresponding UI Command**

fltservice

## Viewing Filters

This section describes commands for viewing all saved and active filters on the switch.

### view filter group

#### Command Usage

Display all configured groups. (The groups may not all be active on the switch.)

#### Syntax Options

**view filter group** [*group-name* | **all** ]

##### Definitions:

*group-name* = name(s) of IP and IPX group(s) that you want to view

**all** = all IP and IPX groups will be displayed

##### Command Examples:

**view filter group ipgroup1**

**view filter group all**

#### Corresponding UI Commands

fltd, fltipd, fltipxd

#### Screen Output

A screen similar to the following displays:

Default IP rule: ALLOW

IP Group Name	Destination	Dest Mask	Source	Source Mask	A/D
<hr/>					
group 3	193.201.185.0	- ff.ff.ff.0	193.201.184.0	-ff.ff.ff.0	ALLOW
	193.201.181.0	- ff.ff.ff.ff			DENY

Default IPX rule: ALLOW

IPX Group Name	Network	Node	A/D
<hr/>			
ipxgroup	***ALL***	***ALL***	ALLOW
	00000024	***ALL***	DENY
	00000026	23:45:67:89:00:00	DENY
	00000027	00:00:39:7A:69:0C	DENY

**Table Description**

**IP Group Name.** The name of a group with IP rules.

**Destination.** The destination IP address.

**Dest Mask.** The mask identifying which bits in the destination IP address are significant.

**Source.** The source IP address.

**Src Mask.** The mask identifying which bits in the source IP address are significant.

**A/D.** The disposition of packets matching this rule (**ALLOW** or **DENY**).

**IPX Group Name.** The name of a group of IPX rules.

**Network.** The destination IPX network number.

**Node.** The destination IPX node.

**A/D.** The disposition of packets matching this rule (**ALLOW** or **DENY**).

### view filter service

#### Command Usage

Display configured services.

#### Syntax Options

**view filter service** [*service-name* | **all** ]

##### Definitions:

*service-name* = name of the service that you want to view

**all** = all services will be displayed; if you do not include a *service-name* or **all**, all services are displayed

##### Command Examples:

**view filter service ftp\_group2**

**view filter group all**

#### Corresponding UI Command

**f1td service**

#### Screen Output

The screen display is similar to the following:

Name	Port	Group
ftp	20 21	group3
telnet	23	group2

#### Table Description

**Name.** The name of the service associated with the group numbers to which filters apply.

**Port.** The TCP port numbers that apply to the service.

**Group.** The names of the filtering groups that should be applied to any traffic with the specified destination port numbers.

**view filter global****Command Usage**

Display global filtering parameters.

**Syntax Options**

**view filter global** (No additional syntax options are used.)

**Screen Output**

The screen display is similar to the following:

```
Global filtering configuration
-----
IP default rule:      allow
IPX default rule:    allow
Precedence:          destination
Groups:               ipgroup1 ipgroup2 ipgroup3
Services:             ftp_group1
```

**Table Description**

**IP default rule.** The disposition for IP traffic when no filtering rules are configured for the flow.

**IPX default rule.** The disposition for IPX traffic when no filtering rules are configured for the flow.

**Precedence.** (applies to IP only) Determines whether the source or destination address for conflicting filtering rules takes precedence.

**Groups.** Determines which global groups (IP and IPX) will be active at the next reboot when the **filter commit** command is entered.

**Services.** Determines which IP service filtering groups will be active at the next reboot or when the **filter commit** command is entered.

### filter check ip

#### Command Usage

Display filtering rules for a particular IP address.

#### Syntax Options

```
filter check ip <ip-address>
```

##### Definitions:

*ip-address* = the IP address for which you want to display filtering rules

##### Command Example:

```
filter check ip 198.172.33.12
```

#### Corresponding UI Command

fltipchk

#### Remarks

*Primary* indicates that the address was used to add rules to; *secondary* indicates that the address was added as a rule to the displayed address.

#### Screen Output

The screen display is similar to the following:

Name	Destination	Destination Mask	Source	Source Mask	A/D
ipgroup1	Primary Address				
	1.1.1.1	ff.ff.ff.ff			
ipgroup1	Secondary Address				
	1.1.1.1	ff.ff.ff.ff	****ALL****	*****	ALLOW

#### Table Description

**Name.** The name of a group with IP rules.

**Destination.** The destination IP address.

**Destination Mask.** The mask identifying which bits in the destination IP address are significant.

**Source.** The source IP address.

**Source Mask.** The mask identifying which bits in the source IP address are significant.

**A/D.** The disposition of packets matching this rule (**ALLOW** or **DENY**).



## filter check ipx

### Command Usage

Display filtering rules for a particular IPX address.

### Syntax Options

```
filter check ipx {network-address | node-address}
```

#### Definitions:

*network-address* = the network address for which you want to display filtering rules

*node-address* = the node address for which you want to display filtering rules

#### Command Examples:

```
filter check ipx 00000027
```

```
filter check ipx 23:45:89:00:00:00
```

### Corresponding UI Command

fltipxchk

### Screen Output

The screen display is similar to the following:

Name	Network	Node	A/D
ipxgroup	****ALL****	****ALL****	ALLOW
ipxgroup	00001000	67:89:01:aa:bb:cc	ALLOW

### Table Description

**Name.** The name of a group of IPX rules.

**Network.** The destination IPX network number.

**Node.** The destination IPX node.

**A/D.** The disposition of packets matching this rule (**ALLOW** or **DENY**).

### view filter active

#### Command Usage

Display active filtering rules.

#### Syntax Options

**view filter active** (No additional syntax options are used.)

#### Corresponding UI Commands

fltactd, fltactipd, fltactipxd

#### Remarks

Groups are configured using the **filter group** and **filter service** commands. Active groups are those that are included in the global configuration with the **filter global** command and activated using the **filter commit** command.

#### Screen Output

The screen display is similar to the following:

```
Active Filtering Rules
=====
Filter Admin State: ENABLED
Filter Init State: ACTIVE

Active IP Filters
=====
Default: ALLOW, Precedence: DESTINATION

GLOBAL
-----
IP Group Name
ID#  Destination  Dest Mask  Source          Src Mask  A/D  Count
-----
group1
  0    23.15.0.0    ff.ff.0.0  182.28.5.0      ff.ff.ff.0  DENY  0
  1    23.15.0.0    ff.ff.0.0  26.15.0.0      ff.ff.0.0  ALLOW  0

SERVICE: ftp PORTS: 20, 21
-----
IP Group Name
ID#  Destination  Dest Mask  Source          Src Mask  A/D  Count
-----
group3
  0    23.15.0.6    ff.ff.ff.ff  172.28.5.175    ff.ff.ff.ff  ALLOW  0
  1    23.15.0.6    ff.ff.ff.ff  26.15.0.23      ff.ff.ff.ff  DENY  0

SERVICE: telnet PORTS: 23
-----
IP Group Name
ID#  Destination  Dest Mask  Source          Src Mask  A/D  Count
```

*(Screen output continued on next page.)*

```

-----
group2
0      23.15.0.6    ff.ff.ff.ff    172.28.5.177    ff.ff.ff.ff    ALLOW    0

```

#### Active IPX Filters

```
=====
```

Default: DENY

#### Full Address Rules

```

-----
IPX Group Name
ID#    Network      Node              A/D    Count
-----
ipxgroup
0      00000026    23:45:67:89:00:00  DENY    0
1      00000027    00:00:39:7A:69:0C  DENY    0

```

#### Network Rules

```

-----
IPX Group Name
ID#    Network      Node              A/D    Count
-----
ipxgroup
0      00000024    *****ALL*****  DENY    0

```

#### Global Rule

```

-----
IPX Group Name
ID#    Network      Node              A/D    Count
-----
ipxgroup
0      **ALL**      *****ALL*****  ALLOW    0

```

### Table Description

**Filter Admin State.** Displays the current administrative filtering state (**ENABLED** or **DISABLED**), which was activated at the last reboot or when the **filter commit** command was entered. Filtering is enabled or disabled through the **filter global** command.

**Filter Init State.** Displays the current operational state of the filtering database (**ACTIVE** or **INACTIVE**).

**IP Group Name.** The name of a group with IP rules.

**ID#.** The unique rule ID assigned by the switch for each active filtering rule configured for the protocol.

**Destination.** The destination IP address.

**Dest Mask.** The mask identifying which bits in the destination IP address are significant.

**Source.** The source IP address.

**Src Mask.** The mask identifying which bits in the source IP address are significant.

**A/D.** The disposition of packets matching this rule (**ALLOW** or **DENY**).

**Count.** The number of IP packets that have arrived on the switch and matched this rule.

**IPX Group Name.** The name of a group of IPX rules.

**ID#.** A unique ID assigned by the switch for each active rule configured for the protocol.

**Network.** The destination IPX network number.

## Viewing Filters

---

**Node.** The destination IPX node.

**A/D.** The disposition of packets matching this rule (**ALLOW** or **DENY**).

**Count.** The number of IPX packets that have arrived on the switch and matched this rule.

## filter query ip

### Command Usage

Display the disposition of a particular IP flow.

### Syntax Options

```
filter query ip [verbose] <destination-address> <source-address> [port-number]
```

#### Definitions:

**verbose** = displays verbose output for the command

**<destination-address>** = destination address for which you want to display the disposition

**<source-address>** = source address for which you want to display the disposition

**[port-number]** = indicates the TCP port number. If no number is supplied, or you specify zero, only global rules are checked.

#### Command Examples:

```
filter query ip 193.201.184.33 198.185.12.0
```

```
filter query ip verbose 23.15.0.6 26.15.0.0
```

### Corresponding UI Command

fltactipq

### Remarks

The **precision** value corresponds to the precision index calculated by the switch. The lower the value the more precise the rule.

Groups are configured using the **filter group** and **filter service** commands. Active groups are those that are included in the global configuration with the **filter global** command and activated using the **filter commit** command.

### Screen Output

The screen display is similar to the following:

```
IP Filter Check
=====
GLOBAL
-----
Destination: 23.15.0.6
-----
precision 16, rules 0,1

Source: 26.15.0.0
-----
precision 16, rules 1

IP flow (dest 23.15.0.6, scr 26.15.0.0) is ALLOWED; GLOBAL rule #1.
```

### filter query ipx

#### Command Usage

Display the disposition of a particular IPX flow.

#### Syntax Options

```
filter query ipx [verbose] <destination-network> <destination-node>
```

##### Definitions:

**verbose** = displays verbose output for the command

*destination-network* = network address for which you want to display the disposition

*destination-node* = node address for which you want to display the disposition

##### Command Examples:

```
filter query ipx 12345678 aa:bb:cc:dd:ee:ff
```

```
filter query ipx verbose 12345678 aa:bb:cc:dd:ee:ff
```

#### Corresponding UI Command

fltactipxq

#### Remarks

Active groups are those that are included in the global configuration with the **filter global** command and activated using the **filter commit** command.

#### Screen Output

The screen display is similar to the following:

##### IPX Filter Check

=====

##### Full Address Rules

-----

rule #0 applies; DENIED

##### Node Rules

-----

no rule applies

##### Network Rules

-----

no rule applies

##### Global Rule

-----

rule #0 applies; ALLOWED

IPX flow (00000026, 23:45:67:89:00:00) is DENIED; FULL ADDR ruleid #0.

**filter reset counters****Command Usage**

Reset statistics counters.

**Syntax Options**

**filter reset counters** (No additional syntax options are used.)

**Corresponding UI Command**

fltrstcntrs

# Removing Filtering Groups and Services

This section describes the commands for removing (deleting) groups and services from the configuration.

### no filter group

#### Command Usage

Delete global IP or IPX groups.

#### Syntax Options

**no filter group** {*group-name* | **all**}

##### Definitions:

*group-name* = name of IP or IPX group to remove from the configuration

**all** = indicates all IP and IPX groups will be removed from the configuration

##### Command Examples:

**no filter group ipgroup1**

**no filter group ipx\_group1**

**no filter group all**

#### Corresponding UI Command

fltrm

#### Remarks

Use the **no filter rule** command to delete rules from groups.

Use the **no filter service** command to delete filtering services.



## no filter rule

### Command Usage

Delete rules from the configuration.

### Syntax Options

**no filter rule** <group-name> {address1 | all} [!(ip-mask1)] {address2 | all} [!(ip-mask2)]

#### Definitions:

*group-name* = name of filter group (e.g., **ipgroup1**)

*address1* = for an IP rule, the source or destination address depending on the **filter group** definition; for an IPX rule, the network address

*!(ip-mask1)* = optional for IP, ignored for IPX; the address mask.

*address2* = for an IP rule, the source or destination address that corresponds to address1; for an IPX rule, the node address

*!(ip-mask2)* = optional for IP, ignored for IPX; the address mask for address2.

**all** = for an IP rule, all addresses for the destination or source; for an IPX rule, all network or node addresses.

#### Command Examples:

**no filter rule ipgroup1 193.201.184.39 all**

**no filter rule ipgroup2 129.3.4.5/ff.ff.ff.ff 129.6.0.0**

**no filter rule ipx\_group1 00001000 67:89:01:aa:bb:cc**

### Corresponding UI Command

**fltrm**

### Remarks

Use the **no filter group** command to delete groups.

Use the **no filter service** command to delete filtering services.

### no filter service

#### Command Usage

Delete filtering service.

#### Syntax Options

```
no filter service {service-name | all }
```

##### Definitions:

*service-name* = name of the service group you want to remove

**all** = all service groups will be removed

##### Command Examples:

```
no filter service ftp_group1
```

```
no filter service all
```

#### Corresponding UI Command

fltrm

#### Remarks

Use the **no filter group** command to delete groups.

Use the **no filter rule** command to delete rules from groups.