1 SAVI Commands

Command	Function
savi ipv6 bind-source add	Configure the data sources of Source Address Validation Improvement (SAVI) binding entries.
savi ipv6 check permit link-local	Enable SAVI to permit local link addresses and undefined addresses.
savi ipv6 check source exclude-vlan	Configure excluded virtual local area networks (VLANs) for SAVI on an interface.
savi ipv6 check source ip-address	Enable IPv6 SAVI.
savi ipv6 station-move	Enable binding entry migration.
savi ipv6 source binding vlan	Add static user information to the IPv6 source address binding database.
show savi ipv6 check source	Display effective SAVI filtering entries.
show savi ipv6 source binding	Display binding entries learned by SAVI.

1.1 savi ipv6 bind-source add

Function

Run the **savi ipv6 bind-source add** command to configure the data sources of Source Address Validation Improvement (SAVI) binding entries.

Run the **no** form of this command to remove this configuration.

Binding entries generated during the stateless address autoconfiguration (SLAAC) and Dynamic Host Configuration Protocol version 6 (DHCPv6) processes are used as the sources of dynamic binding entries by default. Binding entries can also be statically configured.

Syntax

savi ipv6 bind-source add { **dhcp** | **slaac** }

no savi ipv6 bind-source add { **dhcp** | **slaac** }

Parameter Description

dhcp: Uses binding entries snooped during the DHCPv6 process as a source of SAVI binding entries.

slaac: Uses binding entries snooped during the SLAAC process as a source of SAVI binding entries.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

Neighbor discovery (ND) Snooping is used to snoop the SLAAC process. When entries generated during ND Snooping are configured as a source of SAVI binding entries, ND Snooping needs to be enabled.

DHCPv6 Snooping is used to snoop the DHCPv6 process. When entries generated during DHCPv6 Snooping are configured as a source of SAVI binding entries, DHCPv6 Snooping needs to be enabled.

Examples

The following example cancels entries generated during SLAAC as a source of SAVI binding entries.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# no savi ipv6 bind-source add slaac
```

Notifications

N/A

Platform Description

N/A

Related Commands

N/A

1.2   savi ipv6 check permit link-local

Function

Run the **savi ipv6 check permit link-local** command to enable SAVI to permit local link addresses and undefined addresses.

Run the **no** form of this command to remove this configuration.

Permitting local link addresses and undefined addresses is not configured by default.

Syntax

savi ipv6 check permit link-local

no savi ipv6 check permit link-local

Parameter Description

N/A

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

After SAVI is enabled on an interface, SAVI checks the validity of source IPv6 addresses in IPv6 packets transmitted through the interface. After configuring this command, SAVI permits all IPv6 packets with fe80::/10 and ::/128 as source addresses.

⚠   **Caution**

Generally, this command is configured in a DHCPv6-only scenario. In this scenario, fe80::/10 address cannot be obtained through DHCPv6.

Examples

The following example enables SAVI to permit local link addresses and undefined addresses.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# savi ipv6 check permit link-local
```

Notifications

N/A

Platform Description

N/A

Related Commands

N/A

1.3   savi ipv6 check source exclude-vlan

Function

Run the **savi ipv6 check source exclude-vlan** command to configure excluded virtual local area networks (VLANs) for SAVI on an interface.

Run the **no** form of this command to remove this configuration.

No excluded VLANs for SAVI are configured on an interface by default.

Syntax

savi ipv6 check source exclude-vlan *vlan-id*

no savi ipv6 check source exclude-vlan *vlan-id*

Parameter Description

vlan-id: VLAN for which SAVI is not performed. The value range is from 1 to 4094.

Command Modes

Interface configuration mode

Default Level

14

Usage Guidelines

After SAVI is enabled, you can run this command to permit IPv6 packets from specified VLANs.

After SAVI is disabled, the specified excluded VLANs are deleted.

Examples

The following example configures excluded VLANs for SAVI on GigabitEthernet 0/1.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# interface gigabitethernet 0/1
Hostname(config-if-GigabitEthernet 0/1)# savi ipv6 check source ip-address mac-
address
Hostname(config-if-GigabitEthernet 0/1)# savi ipv6 check source exclude-vlan 1
```

Notifications

N/A

Platform Description

N/A

Related Commands

N/A

1.4   savi ipv6 check source ip-address

Function

Run the **savi ipv6 check source ip-address** command to enable IPv6 SAVI.

Run the **no** form of this command to disable this feature.

IPv6 SAVI is disabled by default.

Syntax

savi ipv6 check source ip-address [**mac-address**]

no savi ipv6 check source

Parameter Description

mac-address: Enables media access control (MAC) address check at the same time. The filtering mode is set to IP address and MAC address.

Command Modes

Interface configuration mode

Default Level

14

Usage Guidelines

You can run this command on a DHCPv6 Snooping/ND Snooping untrusted interface to check the validity of source IPv6 addresses in IPv6 packets through the interface. If the filtering mode is set to IP address and MAC address, the validity of the source MAC address in the Ethernet header will also be checked.

Examples

The following example sets the filtering mode of IPv6 SAVI to IP address and MAC address on GigabitEthernet 0/1.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# interface gigabitethernet 0/1
Hostname(config-if-GigabitEthernet 0/1)# savi ipv6 check source ip-address mac-
address
```

Notifications

When a security mode conflict occurs, the following notification will be displayed:

```
% Failed to execute command, because of "Security config conflict".
```

Platform Description

N/A

Related Commands

N/A

1.5   savi ipv6 station-move

Function

Run the **savi ipv6 station-move** command to enable binding entry migration.

Run the **no** form of this command to disable this feature.

The binding entry migration function is disabled by default.

Syntax

savi ipv6 station-move

no savi ipv6 **station**-**move**

Parameter Description

N/A

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

After the binding entry migration function is enabled, dynamic binding entries can be migrated to the corresponding VLANs and interfaces automatically based on changes of the MAC address table. In wireless scenarios, when a host does not re-obtain an IPv6 address after it roams, the access point (AP) after roaming does not match the SAVI binding entry. As a result, the host cannot access the network. When the binding entry migration function is enabled, SAVI can perceive host migration based on MAC address table changes and update SAVI binding entries.

SAVI binding entry migration is triggered by DHCPv6/ND Snooping binding entry migration.

⚠   **Caution**

After binding entry migration is enabled, security functions are weakened and forged MAC address communication by attackers cannot be prevented.

Examples

The following example enables binding entry migration.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# savi ipv6 station-move
```

Notifications

N/A

Platform Description

N/A

Related Commands

N/A

1.6 savi ipv6 source binding vlan

Function

Run the **savi ipv6 source binding vlan** command to add static user information to the IPv6 source address binding database.

Run the **no** form of this command to remove this configuration.

No static user information is added by default.

Syntax

savi ipv6 source binding *mac-address* **vlan** *vlan-id ipv6-address* { **interface** *interface-type interface-number* | **ip-mac** | **ip-only** }

no savi ipv6 source binding *mac-address* **vlan** *vlan-id ipv6-address* { **interface** *interface-type interface-number* | **ip-mac** | **ip-only** }

Parameter Description

mac-address: MAC address of a statically added user.

vlan-id: ID of the VLAN to which a statically added user belongs.

ipv6-address: IPv6 address of a statically added user.

interface-type interface-number: Type and number of the interface to which a statically added user belongs.

ip-mac: Specifies the IPv6 address and MAC address binding type.

ip-only: Specifies the IPv6 address binding type.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

This command is used to permit packets from a specified user.

This command can be configured only on L2 switching interfaces, L2 aggregation ports (link aggregation), and encapsulation subinterfaces. When this command is configured on other types of interfaces, the configuration will fail.

  ℹ **Note**

- A configured binding record takes effect either on the access interface or globally.
- When duplicate user records exist, attributes of the new record will overwrite those of the old record.

Examples

The following example adds a static user record to the IPv6 source address binding database. In the static user record, the MAC address is 0000.0000.0001, the VLAN ID is 1, the IPv6 address is 1::1, and the interface is GigabitEthernet 0/1.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# savi ipv6 source binding 0000.0000.0001 vlan 1 1::1 interface
gigabitethernet 0/1
```

The following example adds a static user record to the IPv6 source address binding database. In the static user record, the MAC address is 0000.0000.0001, the VLAN ID is 1, the IPv6 address is 1::1, and the filtering type is IPv6 address and MAC address.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# savi ipv6 source binding 0000.0000.0001 vlan 1 1::1 ip-mac
```

The following example adds a static user record to the IPv6 source address binding database. In the static user record, the MAC address is 0000.0000.0001, the VLAN ID is 1, the IPv6 address is 1::1, and the filtering type is IPv6 address.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# savi ipv6 source binding 0000.0000.0001 vlan 1 1::1 ip-only
```

Notifications

When the **no** form of this command is run to delete static configuration and the entered parameters are different from those previously configured, the following notification will be displayed:

```
% Failed to execute command, because of "No such binding entry".
```

When a user record is configured and the entered wired access interface is not an L2 switching interface, L2 aggregation port, or encapsulation subinterface, the following notification will be displayed:

```
% Failed to execute command, because of "Configure is not supported on current
interface"
```

Platform Description

N/A

Related Commands

N/A

1.7 show savi ipv6 check source

Function

Run the **show savi ipv6 check source** command to display effective SAVI filtering entries.

Syntax

show savi ipv6 check source [*ipv6-address* | **interface** *interface-type interface-number*]

Parameter Description

ipv6-address: IPv6 address whose filtering information is displayed.

interface-type interface-number: Interface whose effective binding entries are displayed.

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

N/A

Examples

The following example displays effective SAVI filtering entries.

```
Hostname> enable
Hostname# show savi ipv6 check source
Total entries found: 6
No.    Ipv6 Address                             Mac Address     VLAN Interface
Filter
0     2018:2::1                                 8005.8820.182b 2    Gi0/1
IP+MAC
1     2018:3::1                                 8005.8820.182b 3    Gi0/1
IP+MAC
2     2018:4::1                                 8005.8820.182b 4    Gi0/1
IP+MAC
3     fe80::8205:88ff:fe20:182b                 8005.8820.182b 2    Gi0/1
IP+MAC
```

Table 1-1Output Fields of the show savi ipv6 check source Command

Field	Description
Total entries found	Number of effective bindings
NO	Record number
IPv6 Address	IPv6 address of a user
MacAddress	MAC address of a user
VLAN	VLAN to which a user belongs
Interface	Interface name

Notifications

N/A

Platform Description

N/A

Related Commands

- **savi ipv6 check source ip-address**

1.8   show savi ipv6 source binding

Function

Run the **show savi ipv6 source binding** command to display binding entries learned by SAVI.

Syntax

show savi ipv6 source binding [*ipv6-address*] [*mac-address*] [**vlan** *vlan-id*] [**interface** *interface-type interface-number*] [**type** { **dhcp** | **slaac** | **static** }]

Parameter Description

ipv6-address: IPv6 address whose binding entries are displayed.

mac-address: MAC address whose binding entries are displayed.

vlan *vlan-id*: Specifies the VLAN whose binding entries are displayed.

interface *interface-type interface-number*: Specifies the interface whose binding entries are displayed.

dhcp: Displays binding entries from the DHCPv6 process.

slaac: Displays binding entries from the SLAAC process.

static: Displays statically configured binding entries.

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

N/A

Examples

The following example displays SAVI-learned binding entries.

```
Hostname> enable
Hostname# show savi ipv6 source binding
Total entries found: 6
No.    Ipv6 Address                             Mac Address     VLAN Interface
Type
0      2018:2::1                                8005.8820.182b 2    Gi0/1
SLAAC
1      2018:3::1                                8005.8820.182b 3    Gi0/1
SLAAC
```

```
2     2018:4::1                                    8005.8820.182b 4   Gi0/1
SLAAC
3     fe80::8205:88ff:fe20:182b                    8005.8820.182b 2   Gi0/1
SLAAC
```

Table 1-1Output Fields of the show savi ipv6 source binding Command

Field	Description
Total entries found	Number of binding entries
NO.	Record number
IPv6 Address	IPv6 address of a user
Mac Address	MAC address of a user
VLAN	VLAN to which a user belongs
Interface	Interface name
Type	Record type

Notifications

N/A

Platform Description

N/A

Related Commands

- **savi ipv6 source binding**