



IPv6 Anycast Address

An IPv6 anycast address is an address that is assigned to a set of interfaces that typically belong to different nodes. Anycast addresses are syntactically indistinguishable from unicast addresses, because anycast addresses are allocated from the unicast address space.

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Finding Feature Information

Your software release may not support all the features documented in this module. For the latest feature information and caveats, see the release notes for your platform and software release. To find information about the features documented in this module, and to see a list of the releases in which each feature is supported, see the Feature Information Table at the end of this document.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to www.cisco.com/go/cfn. An account on Cisco.com is not required.

Information About IPv6 Anycast Address

IPv6 Address Type: Anycast

An anycast address is an address that is assigned to a set of interfaces that typically belong to different nodes. A packet sent to an anycast address is delivered to the closest interface (as defined by the routing protocols in use) identified by the anycast address. Anycast addresses are syntactically indistinguishable from unicast addresses, because anycast addresses are allocated from the unicast address space. Assigning a unicast address

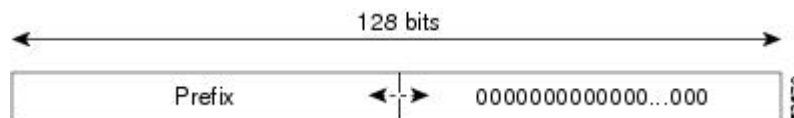
to more than one interface makes a unicast address an anycast address. Nodes to which the anycast address is assigned must be explicitly configured to recognize that the address is an anycast address.



Note Anycast addresses can be used only by a device, not a host, and anycast addresses must not be used as the source address of an IPv6 packet.

The figure below shows the format of the subnet device anycast address; the address has a prefix concatenated by a series of zeros (the interface ID). The subnet device anycast address can be used to reach a device on the link that is identified by the prefix in the subnet device anycast address.

Figure 1: Subnet Device Anycast Address Format



How to Configure IPv6 Anycast Address

Configuring IPv6 Anycast Addressing

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **interface** *type number*
4. **tunnel mode** `ipv6ip [6rd | 6to4 | auto-tunnel | isatap]`
5. **tunnel source** { *ip address | ipv6-address | interface-type interface-number* }
6. **ipv6 address** { *ipv6-prefix/prefix-length | prefix-name sub-bits/prefix-length* }
7. **ipv6 address** *ipv6-prefix/prefix-length* **anycast**

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable Example: Device> enable	Enables privileged EXEC mode. <ul style="list-style-type: none"> • Enter your password if prompted.

	Command or Action	Purpose
Step 2	configure terminal Example: Device# configure terminal	Enters global configuration mode.
Step 3	interface type number Example: Device(config)# interface tunnel0	Specifies an interface type and number, and places the device in interface configuration mode.
Step 4	tunnel mode ipv6ip [6rd 6to4 auto-tunnel isatap] Example: Device(config-if)# tunnel mode ipv6ip 6to4	Configures a static IPv6 tunnel interface.
Step 5	tunnel source { ip address ipv6-address interface-type interface-number } Example: Device(config-if)# tunnel source GigabitEthernet1	Sets the source address for a tunnel interface. The address used here is the one assigned to Ethernet interface 1.
Step 6	ipv6 address { ipv6-prefix/prefix-length prefix-name sub-bits/prefix-length } Example: Device(config-if)# ipv6 address 2001:db8:A00:1::1/64	Configures an IPv6 address and enables IPv6 processing on an interface.
Step 7	ipv6 address ipv6-prefix/prefix-length anycast Example: Device(config-if)# ipv6 address 2002:db8:c058::/128 anycast	Specifying the ipv6 address anycast command adds an IPv6 anycast address.

Configuration Examples for IPv6 Anycast Address

Example: Configuring IPv6 Anycast Addressing

```
interface tunnel0
 tunnel mode ipv6ip 6to4
 tunnel source ethernet1
 ipv6 address 2001:0db8:1::1/64
 ipv6 address 2002:0db8:6301::/128 anycast
!
```

```
interface gigabitethernet1
 ip address 10.0.0.1 255.255.255.0
 ip address 192.88.99.1 255.255.255.0 secondary
```

Additional References for IPv6 Source Guard and Prefix Guard

Related Documents

Related Topic	Document Title
IPv6 addressing and connectivity	<i>IPv6 Configuration Guide</i>
IPv4 addressing	<i>IP Addressing: IPv4 Addressing Configuration Guide</i>
Cisco IOS commands	Cisco IOS Master Command List, All Releases
IPv6 commands	<i>Cisco IOS IPv6 Command Reference</i>
Cisco IOS IPv6 features	Cisco IOS IPv6 Feature Mapping

Standards and RFCs

Standard/RFC	Title
RFCs for IPv6	<i>IPv6 RFCs</i>

Technical Assistance

Description	Link
The Cisco Support and Documentation website provides online resources to download documentation, software, and tools. Use these resources to install and configure the software and to troubleshoot and resolve technical issues with Cisco products and technologies. Access to most tools on the Cisco Support and Documentation website requires a Cisco.com user ID and password.	http://www.cisco.com/cisco/web/support/index.html

Feature Information for IPv6 Anycast Address

The following table provides release information about the feature or features described in this module. This table lists only the software release that introduced support for a given feature in a given software release train. Unless noted otherwise, subsequent releases of that software release train also support that feature.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to www.cisco.com/go/cfn. An account on Cisco.com is not required.

Table 1: Feature Information for IPv6 Anycast Address

Feature Name	Releases	Feature Information
IPv6: Anycast Address	12.2(25)SEA 12.2(25)SG 12.2(33)SRA 12.2(33)SXH 12.3(4)T 15.0(2)SG Cisco IOS XE Release 2.1 3.2.0SG	An anycast address is an address that is assigned to a set of interfaces that typically belong to different nodes. Anycast addresses are syntactically indistinguishable from unicast addresses, because anycast addresses are allocated from the unicast address space. The following commands were introduced or modified: ipv6 address anycast , show ipv6 interface .

