

PPP IP Unique Address and Prefix Detection

The PPP IP Unique Address and Prefix Detection feature checks the uniqueness of IPv4 addresses and IPv6 prefixes on the broadband remote access server (BRAS). PPP disconnects the session if it detects a duplicate IPv4 address and IPv6 prefix.

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Information About PPP IP Unique Address and Prefix Detection

- IPv6 checks if the prefix is unique when it is installed on an interface. If the prefix installation fails, PPP disconnects the session.
- PPP also checks if the IPv4 address is unique. PPP disconnects the session if a duplicate IPv4 address is detected.

How to Configure PPP IP Unique Address and Prefix Detection

Perform this task to configure the PPP IP Unique Address and Prefix Detection feature.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **interface virtual-template** *interface-number*
4. **ppp ipcp address required**
5. **ppp ipcp address unique**
6. **ppp ipv6cp address unique**
7. **ppp timeout ncp** *seconds*
8. **exit**
9. **ppp ncp override local**
10. **end**

DETAILED STEPS

Procedure

	Command or Action	Purpose
Step 1	**enable** **Example:** `Router> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**configure terminal** **Example:** `Router# configure terminal`	Enters global configuration mode.
Step 3	**interface virtual-template** *interface-number* **Example:** `Router(config)# interface virtual-template 7`	Selects the Virtual Template interface and enters interface configuration mode.
Step 4	**ppp ipcp address required** **Example:** `Router(config-if)# ppp ipcp address required`	PPP disconnects the peer if no IP address is negotiated.
Step 5	**ppp ipcp address unique** **Example:** `Router(config-if)# ppp ipcp address unique`	PPP disconnects the peer if the IP address is already in use.
Step 6	**ppp ipv6cp address unique** **Example:** `Router(config-if)# ppp ipv6cp address unique`	PPP disconnects the peer if the IPv6 prefix is already in use.
Step 7	**ppp timeout ncp** *seconds* **Example:** `Router(config-if)# ppp timeout ncp 30`	PPP sets the maximum time in seconds to wait for the network layer to negotiate.
Step 8	**exit** **Example:** `Router(config-if)# exit`	Exits interface configuration mode and returns to global configuration mode.

	Command or Action	Purpose
Step 9	**ppp ncp override local** **Example:** `Router(config)# ppp ncp override local`	PPP overrides the local dual-stack configuration, checks the permitted Network Control Programs (NCP), and rejects user-initiated NCP negotiation.
Step 10	**end** **Example:** `Router(config)# end`	Exits global configuration mode and returns to privileged EXEC mode.

Configuration Examples for PPP IP Unique Address and Prefix Detection

Example PPP Unique Address and Prefix Detection

To enable the PPP IP Unique Address nd Prefix Detection feature, use the following configuration.

```
Router# configure terminal
Router(config)# interface virtual-template 7

Router(config-if)# ppp ipcp address required

Router(config-if)# ppp ipcp address unique

Router(config-if)# ppp ipv6cp address unique

Router(config-if)# ppp timeout ncp 30
Router(config-if)# exit
Router(config)# ppp ncp override local
Router(config)# end
```

Additional References

Related Documents

Related Topic	Document Title
Broadband Access Aggregation and DSL commands	*Cisco IOS Broadband Access Aggregation and DSL Command Reference*

Standards

Standard	Title
None	--

MIBs

MIB	MIBs Link
None	To locate and download MIBs for selected platforms, Cisco software releases, and feature sets, use Cisco MIB Locator found at the following URL: http://www.cisco.com/go/mibs

RFCs

RFC	Title
None	--

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 PPP IP Unique Address and Prefix Detection

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 PPP IP Unique Address and Prefix Detection

Feature Name	Releases	Feature Information
PPP IP Unique Address and Prefix Detection	Cisco IOS XE Release 3.2S	The PPP IP Unique Address and Prefix Detection feature checks the uniqueness of IPv4 address and IPv6 prefix on the BRAS. PPP disconnects the session if it detects a duplicate IPv4 address and IPv6 prefix. The following commands were introduced: **ppp ipv6cp address unique**, **ppp ncp override local**.