

# Removing Private Autonomous System Numbers in BGP

Document ID: 13756

---

<b>Introduction</b>
<b>Prerequisites</b>
Requirements
Components Used
Conventions
<b>Remove the Numbers</b>
<b>Related Information</b>

---

## Introduction

This document discusses the removal of the private autonomous system numbers in BGP.

## Prerequisites

### Requirements

There are no specific requirements for this document.

### Components Used

This document is not restricted to specific software and hardware versions.

### Conventions

For more information on document conventions, refer to the Cisco Technical Tips Conventions.

## Remove the Numbers

Private autonomous system (AS) numbers which range from 64512 to 65535 are used to conserve globally unique AS numbers. Globally unique AS numbers (1 – 64511) are assigned by InterNIC . These private AS number cannot be leaked to a global Border Gateway Protocol (BGP) table because they are not unique (BGP best path calculation expects unique AS numbers; see BGP Best Path Selection Algorithm for more information on BGP path selection). For this reason, a new feature was added in Cisco IOS® Software release 10.3 and later, which allows the stripping of private AS numbers out of the AS\_PATH list before the routes are propagated to a BGP peer.

Generally customer networks and their routing policies are an extension of the respective Internet Service Providers (ISPs). When a customer network is large, the service provider may assign an AS number using a couple of different methods in order to manage the network and routing policies.

- One way is by permanently assigning an AS number in the range of 1 to 64511. This is done when a customer network connects to two different ISPs, such as multihoming. This situation mandates that customer network should have a unique AS number so that it can uniquely propagate its BGP routes to a global BGP mesh via two ISPs.

- A second way is by assigning a Private AS number in the range of 64512 to 65535. This is done when a customer network connects to a single ISP (either single-homed or dual-homed to the same ISP) and the intention is to conserve the AS numbers. It is not recommended that you use a private AS number if you are planning to connect to multiple ISPs in the future.

When a private AS number is allocated to the customer network, the BGP updates from the customer network to ISP will have the private AS number in its AS\_PATH list. When the ISP propagates its network information to the global BGP table (Internet), it should not propagate the AS\_PATH with the private AS number of the customer to the Internet. To help the ISP remove the private AS number from its AS\_PATH list, use the Cisco IOS **remove-private-as** command.

To remove the private AS number, use the **neighbor x.x.x.x remove-private-as** router configuration command.

The **neighbor x.x.x.x remove-private-as** per-neighbor configuration command forces BGP to drop the private AS numbers. You can configure this command for external BGP neighbors. When the outbound update contains a sequence of private AS numbers, this sequence is dropped.

The following conditions apply:

- You can only use this solution with external BGP (eBGP) peers.
- If the update has only private AS numbers in the AS\_PATH, BGP removes these numbers.
- If the AS\_PATH includes both private and public AS numbers, BGP doesn't remove the private AS numbers. This situation is considered a configuration error.
- If the AS\_PATH contains the AS number of the eBGP neighbor, BGP does not remove the private AS number.
- If the AS\_PATH contains confederations, BGP removes the private AS numbers only if they come after the confederation portion of the AS\_PATH.

For an configuration example, refer to Sample Configuration for Removing Private AS Numbers in BGP.

---

## Related Information

- [BGP Support Page](#)
- [Technical Support – Cisco Systems](#)

---

[Contacts & Feedback](#) | [Help](#) | [Site Map](#)

© 2008 – 2009 Cisco Systems, Inc. All rights reserved. [Terms & Conditions](#) | [Privacy Statement](#) | [Cookie Policy](#) | [Trademarks of Cisco Systems, Inc.](#)

---

Updated: Aug 10, 2005

Document ID: 13756

---