IPAM ROUTING TABLE DISCOVERY

GAIN VISIBILITY BEYOND THE EDGE TO UNDERSTAND WHERE IP RESOURCES ARE USED ON CUSTOMER NETWORKS

Highlights:

1. Easily verify IP assignments for business customers

2. Analyze routing to discover the root cause of customer issues

3. Ensure rapid and seamless network configuration changes

4. Make smarter IP planning and allocation decisions

The Challenge:
Many communication service providers offer business customers transit on their networks. However, without visibility beyond the network edge, providers face a number of potentially serious issues that can affect IP resource management and cause IP conflicts that affect subscriber services.

One of the major concerns is the accuracy of announcements from the routing table on the customer edge. These announcements need to travel upstream to the provider edge router and the service provider generally does not have the ability to verify whether announcements are correct.

Questions that are difficult to answer without visibility into routing include:

- If a customer behind the edge router moves on, is the associated IP space correctly returned to the free pool?
- Are the correct blocks being announced? If not, routing conflicts can cause transit issues, resource leakage, and routing table inaccuracies that result in serious IP traffic disruptions.

As a result, a customer may not be able to send or receive traffic and the network administrator is unable to find and analyze the root cause. This is particularly problematic when offering transit to business customers, as you need to ensure that the associated IPs are being used and configured correctly to adhere to SLAs.

Without visibility into IP routing and an ability to verify the root cause of an issue, problems can escalate. For example:

1. IP blocks can be hidden behind various network elements
2. IP addresses are not aggregated, resulting in a complicated and nonlinear IP plan that is time-consuming and difficult to navigate
3. Inefficient IP plans result in inefficient routing, where routers have to parse huge tables to determine where to forward packets

Poor IP planning can make it difficult to add space when a customer requires more IP real estate. If different pieces of the network are spread over disparate routing elements, you may need to aggregate IP blocks, which requires renumbering the customer IP space. These network configuration changes are disruptive — and essentially unnecessary.

Solution: Routing Table Discovery

A robust, carrier-grade IP Address Management (IPAM) solution must provide automatic routing table discovery, as well as offer visibility into how and where IP resources are used on the network. Visibility into routing is essential for:

- Verification and troubleshooting of IP assignments
- Analyzing the root cause of customer issues
- Ensuring rapid and seamless network configuration changes

Incognito Address Commander simplifies the discovery process by integrating routing table discovery with IPAM. This enables a network administrator to easily find static IP assignments and troubleshoot any potential assignment issues, and make better planning decisions and IP allocations on the network.

The network administrator can narrow down routes that are meaningful by selecting the protocol and/or metric required to filter static assignments and relevant routes. The system efficiently retrieves routing table information that matches these filters to ensure that the routing element processing time is kept to a minimum.

Once these ranges are retrieved, the results are integrated into the IPAM system for comparison, documentation, and tracking.

Results

The combination of discovery and network intelligence make it much easier for network administrators to detect, analyze, and prevent IP conflicts and routing-related issues from causing problems on customer networks.

Visibility into routing on customer networks makes it simple to understand how and where IPs are being used, whether there are any transit issues, or if resources have been improperly allocated. By quickly fetching routing information and integrating with IP information, Incognito Address Commander makes it easy to identify system deviations and quickly discover any routing table or transit issues that can lead to IP conflicts, misconfigurations, or resource shortages.

Furthermore, the solution can be configured to alert network administrators if other IP-related issues arise. For example, if a customer has moved on and the IP block is no longer associated, you can ensure the resource is automatically returned to the pool, and set up notifications if this process is not completed.

By gaining visibility into routing and integrating it directly with IPAM, you can greatly reduce the time it takes to troubleshoot common IP problems, detect and avoid IP-related outages, and reduce the likelihood of future issues on customer networks.

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