

Policy-based routing

In computer networking, **policy-based routing (PBR)** is a technique used to make routing decisions based on policies set by the network administrator.

When a router receives a packet it normally decides where to forward it based on the destination address in the packet, which is then used to look up an entry in a routing table. However, in some cases, there may be a need to forward the packet based on other criteria. For example, a network administrator might want to forward a packet based on the source address, not the destination address.^[a] This permits routing of packets originating from different sources to different networks even when the destinations are the same and can be useful when interconnecting several private networks.

Policy-based routing may also be based on the size of the packet, the protocol of the payload, or other information available in a packet header or payload.

In the Cisco IOS, PBR is implemented using *route maps*.^[1] Linux supports multiple routing tables since version 2.2.^[2] FreeBSD supports PBR using either IPFW, IPFilter or OpenBSD's PF.

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Examples

PBR can be used to redirect traffic to a proxy server by using a PBR-aware L3-switch (router). In such deployment, specific source traffic (e.g. HTTP, FTP) can be redirected to a cache engine. This is known as virtual inline deployment.

Notes

- a. Routing based on source address should not be confused with source routing.

References

1. Cisco IOS Release 12.0 Quality of Service Solutions Configuration Guide (http://www.cisco.com/en/US/docs/ios/12_0/qos/configuration/guide/qcpolicy.html) Archived (https://web.archive.org/web/20080513112457/http://www.cisco.com/en/US/docs/ios/12_0/qos/configuration/guide/qcpolicy.htm) 2008-05-13 at the Wayback Machine
2. Linux Advanced Routing & Traffic Control HOWTO (<http://www.tldp.org/HOWTO/Adv-Routing-HOWTO/index.html>)

External links

- Policy routing Cisco Press article (<http://www.ciscopress.com/content/downloads/cisco/bookreg/2237xxd.pdf>)
- Policy based routing with Linux (ONLINE edition) (<http://www.policyrouting.org/PolicyRoutingBook/ONLINE/TOC.html>)
- Network overview by Rami Rosen (<https://web.archive.org/web/20121019131903/http://www.linuxfoundation.org/collaborate/workgroups/networking/networkoverview>)

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