## Technical Specifications

### Interfaces
**10/100/1000 BaseT or 1000 BASE-SX network interface**
**RS-232C Console port**

### Certifications
**EMC:**
Emissions/Immunity
- CISPR 22/24
- EN55022
- EN55024
- FCC Part 15
- ICES-003
- VCCI, Class A
- AN/NZS 3548, Class A
- CNS-13438, Class A

**Safety:**
- IEC 60950, with all NCB Member differences
- UL 1950
- CSA 22.2 No. 950
- EN 60950
- IEC 60825-1

**EMI:**
- FCC CFR 47, Part 15, Class A
- VCCI, Class A
- Industry Canada, Class A
- BSMI CNS 13438 Class A
- AS/NZS 3548 Class A
- CE-EN-55022, EN-55024, EN-61000-4-2, EN-61000-4-3, EN-61000-4-4, EN -61000-4-5, EN -61000-4-6, EN-61000-4-8, EN-61000-4-11

### Physical Characteristics
**Dimensions:**
17" W x 1.75" H x 18" D
43.2cm W x 4.4cm H x 45.7cm D

**Weight:**
9 lbs (4.1 kg)
(Standard 10" BA rack or wall mountable)

**Temperature:**
0° to 45° C

**Humidity:**
5%–95% (40° C) non-condensing

**Altitude:**
Up to 10,000 ft (3048m)

**Shock:**
15G, 11MS duration

**Vibration:**
1G, +/- 0.15mm, 10-58 Hz

**Acoustic Noise:**
<50dB at 1m in front of the system at full load

**AC Power:**
Auto-ranging supply: 100–240 VAC @ 50 to 60 Hz; 2/1 Amps

**MTBF:**
>100,000 hours


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**http://www.nortelnetworks.com/personalinternet**


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Part # 94005.02/01-01


# Alteon Personal Content Director

**The Nortel Networks Alteon Personal Content Director (PCD) launches the next generation in Internet Content Delivery networks, the Personal Internet. Based on breakthrough, patent-pending technology, the PCD is the industry's only global load balancing solution that delivers user-aware request-to-content routing capabilities based on Layer 3–7 protocol attributes and true user proximity, in addition to network and server status. The PCD enables content and service providers to build personalized content delivery systems that elevate users' experience to a whole new level.**



# The Alteon Personal Content Director

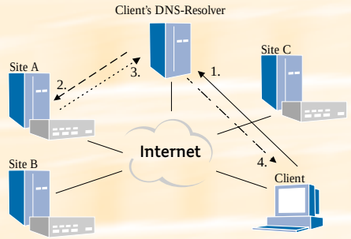


## Features:

- Improves Web site robustness and efficiency by enabling content distribution and true user-proximity content routing.
- Increases performance by dynamically selecting the fastest-responding site relative to the user's location.
- Real-time knowledge of latency and packet loss from distributed content sites to the user.
- Server health and load consideration without the overhead of server status broadcasts across the distributed sites.
- Personalized site selection through visibility to actual user requests.
- Content-aware site selection allows each member of a distributed content site to serve a different subset of the entire content.
- Improves site selection efficiency with the optional client network cache.
- Scales easily to match increases in traffic volume.
- Java-based network management for centralized provisioning.
- Leverages content-intelligent redirection and local server load balancing capabilities on Nortel Networks Alteon Web Switches.
- Dedicated processing with the Alteon iSD appliance platform.
- Specialized OS for fast packet forwarding and streamlined TCP processing.
- Increased bandwidth with 10/100/1000 copper or Gigabit fiber network interface.

**User and Content Intelligence Produces the Most Accurate and Personal Content Site Selection.** Traditional Domain Name Server (DNS)-based, request-to-content routing solutions select the closest web site to the user's DNS resolver, not the user. The DNS approach is often inaccurate, as experiments have shown that more than half of the Internet users and their DNS servers are located in different routed networks. Unlike the DNS-based approaches, the Alteon PCD has full visibility of the user request, allowing it to determine the best site relative to the actual user and the requested content.

**DNS-based Global Server Load Balancing (GSLB)**



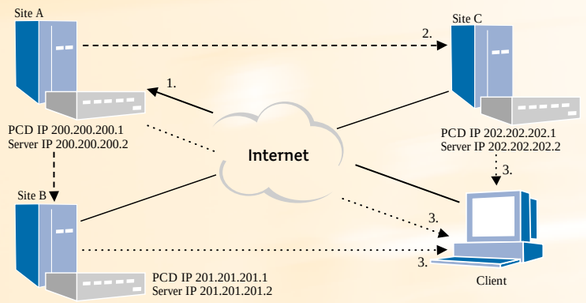

1. Client requests IP address of www.mywebsite.com
2. Request sent to Authoritative Name Server-a GSLB device
3. Address resolved, based on proximity to DNS Resolver
4. Site selected is not in true proximity to the client

*DNS-based Global Server Load Balancing selects the closest site to the client's DNS Resolver, which may not be close to the client. 60% of users are not in the same network as their DNS.*

**True User-Proximity Routing Determines the Fastest-Responding Content Location for Each Client Request.** Front-ending Web servers or caches at distributed content sites, the Alteon PCDs act in concert to detect true client proximity and select the fastest location with user-relevant content, taking into account real-time path latency, packet loss, content availability, and server health and load.

The PCD offers four site-selection modes, each appropriate for specific deployment requirements. The Footrace Mode offers an up-to-date assessment of the server-to-user traffic paths (where the overwhelming portion of traffic traverses), resulting in the expedient selection of the site with the lowest network and server latency. Refresh Mode, the easiest to deploy, selects the appropriate content site based on the TCP round trip time and path reliability/packet loss between each site and the user. Weighted DNS Round-robin mode can be used by content providers to rotate content requests between sites while installing the PCDs across the content domain, at geographically distributed locations. Static Mode, which can be used in conjunction with any of the other methods, maps identified user networks to the preferred content site.

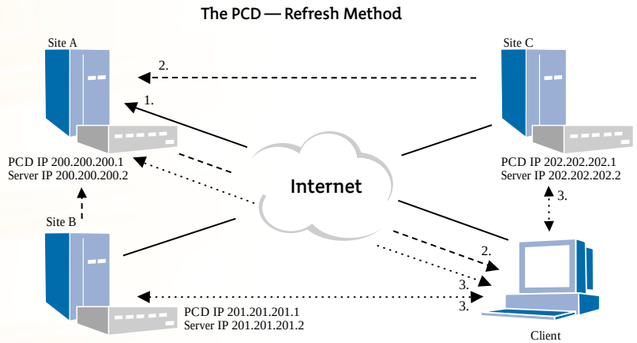
**The PCD — Footrace Mode**




1. Client establishes TCP connection, and sends HTTP GET request
2. PCD at Site A forwards redirects to PCDs at Sites B & C
3. PCDs simultaneously send replies. Client will bind to IP address of site that gets to him first.

*Footrace Mode takes into account asymmetrical routing, typical of the Web. Local site load is determined via health checking.*

**The PCD — Refresh Method**




1. Client establishes TCP connection, and sends HTTP GET request
2. PCD at Site A responds with a Web page containing image links to sites B and C and a refresh back to itself.
3. The client follows these links to sites A, B and C allowing the PCDs to determine round trip times (RTT) to the client. RTTs are reported back to site A, which sends the remainder of the HTML page to the client. After the client contacts Site A, he is connected to the site that had the best RTT.

*Refresh Mode does not measure asymmetrical routing, it does measure both latency and packet loss implicitly.*

**Content-Aware Request Routing Eases Content Management and Distribution.** Unlike DNS-based request-to-content routing solutions, the Alteon PCD can route user requests based on the particular content being requested. Administrators can create different content domains, each consisting of a set of content sites that are capable of serving specific content, to ease content management and reduce equipment costs. The PCD executes its site selection process within a chosen content domain, based on host or URL headers in the user request. Content-aware site selection allows providers to distribute partial content to the content sites based on user demographics or other business policies, without any content modifications.

**Improved Site Selection Efficiency with Remote Server Health Checks and Client Network Cache.** The Alteon PCD further reduces latency in responding to user requests by probing the performance of all globally distributed sites in each content domain. Each PCD can be configured to monitor the health and load of all local servers and will remove any non-responding content server from future site selections, while server performance is factored into its site selection process.

The Client Network Cache (CNC) in the PCD speeds the site selection process for repeat visits. When enabled, the CNC stores a table of client networks and the address of the fastest-responding site. This table is updated periodically, based upon deployment requirements. After the firstuser-to-site mapping, subsequent requests from the same network will be directed using the CNC table.

**Simple, Non-Intrusive Integration.** Easily scaled to increasing traffic volumes, the Alteon PCD can be deployed alone or in a cluster. No centralized device is required to orchestrate the PCDs, eliminating single-points-of-failure and reducing costs.

The PCD is built on the Alteon Integrated Service Director (iSD) that provides seamless, scalable processing extensions to Alteon's high performance web switches. Alteon iSD products are purpose-built appliances performing compute- or storage-intensive tasks that would otherwise bog down the data path.

Unlike traditional IP appliances, the iSD is non-intrusive to existing network topologies. Attached directly or across a local broadcast domain to one or more Alteon Web switches, the iSD does not insert an additional hop to the main data path while it leverages all Web OS services on the Web switch, including load balancing, filtering, network address translation, policy redirection and automatic failover.