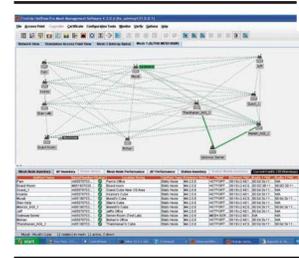


HotView[®] Pro Network Management Software



HotView[®] Pro provides centralized management and control of single or multiple Firetide networks with an intuitive based user interface. It is a sophisticated, yet simple-to-use platform for configuring, monitoring, and managing HotPort[™] mesh nodes and HotPoint[™] access points.

Firetide Multi-Service Network

The Firetide mesh provides a high capacity, self-healing wireless mesh network that operates seamlessly indoors and outdoors. Designed for maximum performance, scalability, mobility and security, the mesh delivers throughput of over 150 Mbps per radio link.

Firetide's patented AutoMesh[™] - This routing protocol makes the mesh fully self-forming and self-healing, to afford rapid deployment and dependable operation for both static and mobile mesh infrastructures. Mesh-wide performance is constantly optimized with unique AutoMesh features such as flow based routing, congestion control, cost-based bandwidth metrics and industry-leading low latency.

Multiple auto-sensing - Auto-sensing 10/100/1000 Mbps Ethernet ports on each HotPort node create a virtual Ethernet switch, providing direct connectivity to devices such as video surveillance cameras and Wi-Fi access points, forming a high-performance multi-service infrastructure.

Bonded or linear mode - The mesh nodes can operate in bonded or linear radio mode and support 900 MHz, 2.4 GHz, 4.9 GHz and 5 GHz bands.

In the bonded mode, both radios are combined to operate as a single interface that provides double the bandwidth of a single radio equivalent. This is ideal for bandwidth intensive applications such as video surveillance, resulting in crystal clear video images. This mode also provides a

"fat pipe" for point to point wireless backhaul; for example, to connect two mesh networks. In the linear mode, both radios operate independently enabling sustained bandwidth levels over an unlimited number of hops. This enables long linear topologies, such as when networking a railway line, and provides a sustained level of service to every node, which is also critical for large municipal networks. Network performance can be optimized in crowded environments by manually removing redundant links from the mesh.

Optimal Network Performance

The HotView software incorporates a number of unique flow control, traffic prioritization and management capabilities to deliver high throughput and low latency needed to support concurrent voice, video and data communications.

- Bandwidth metrics improve overall throughput by selecting best transmission paths based on link capacity, link type, hop count, and link retransmission count.
- During high network utilization, HotView manages and mitigates traffic congestion on a per flow basis. Three levels of congestion control are triggered by traffic in transmit queues and overall link capacity.
- Mesh traffic can be prioritized by Ethernet port or by 802.1 p QoS based high, medium, or low field values in order to optimize video or voice applications.

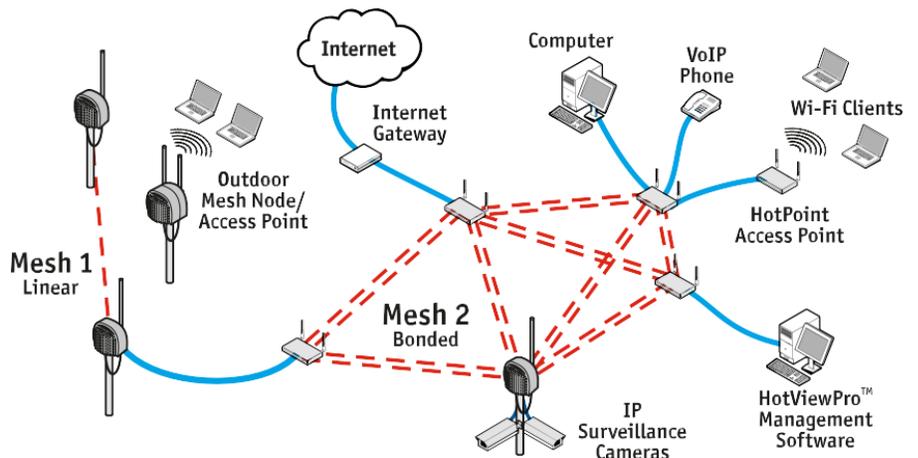
- With flow-based routing traffic is balanced across the mesh to best optimize aggregate throughput and increase network performance. Flows are established between source and destination nodes and are balanced based on link-specific traffic loads and class-of-service priorities.
- To reduce network traffic and improve overall performance, broadcasts can be contained to a single mesh or multiple contiguous meshes.
- Static Route Assignments can be implemented to ensure the highest possible performance between any two source and destination nodes.
- In poor RF environments transmit data rates can be locked-in at a lower rate to reduce re-transmissions and ensure constant throughput.
- Multi-Hop optimization reduces contention in mesh topologies with numerous redundant paths.
- Received Signal Strength (RSSI) Threshold settings prioritize paths by link quality.
- For improved performance over longer distance routes, the Extended Range feature enables timing parameters to be optimized for longer propagation times.
- Adjustable transmit power levels minimize interference within the mesh, while Dynamic Frequency Selection (DFS) minimizes radio/radar interference.
- Virtual LANs segment and direct traffic along specific VLAN routes.

Highly Scalable Networks

The virtual-Ethernet architecture of HotPort systems combined with the AutoMesh routing protocol provide superior scalability with the following features:

EthernetDirect™ - With EthernetDirect a HotPort mesh can be seamlessly extended to a wired backbone or any two mesh nodes can be interconnected with a high speed full-duplex 100 Mbps wired link, reducing overall hop counts. This feature also allows two portions of a single mesh network to be linked across a routed IP network.

Internetworking with Other Domains - Any HotPort mesh can internetwork with any other LAN/WAN domain, including the Internet or an enterprise designated as a Network Gateway Interconnect (NGI) provides the basic connection; multiple NGI nodes add multi-path performance and redundancy. A standby Gateway Server can be optionally configured to ensure seamless failover from standby to active. A separate node can be designated as a Gateway Server to consolidate multiple NGIs into a single, high-bandwidth link. HotView also supports IEEE 802.1q VLAN tagging of Packets traversing the mesh to and from other network domains.



Maximum End-to-End Security

The HotPort system provides a set of layered security options in order to ensure multi-level data integrity, access control, and intrusion protection both across the mesh and to the client.

- For end-to-end traffic encryption, administrators can enable Advanced Encryption Standard (AES) at 128 or 256 bits, WPA2 (256-bit key) and/or WEP at 104/128 or 40/64 bits (6000 models only).
- Traffic can be filtered by MAC address. This form of access control can be configured on either an explicit Allow or Deny basis.
- VLANs, which segment traffic within the mesh, add yet another layer of security.
- Mesh node ESSID encryption and suppression prevents unauthorized viewing of HotPort mesh nodes, even with sophisticated wireless monitoring tools.
- Mesh nodes are digitally signed, requiring certificate based acceptance before any HotPort node can join the mesh.

- Firmware upgrades are also certificate based, requiring nodes to accept upgrades only from trusted and digitally signed sources.
- In addition to security across the mesh backbone, the HotPoint AP is 802.11i compliant and supports 802.1x RADIUS authentication, VPN tunneling and filtering, and SSID suppression.

Unmatched Mobility

In addition to supporting mobile Wi-Fi clients as they roam from cell-to-cell, HotPort mesh nodes provide an entirely mobile infrastructure. This enables unique applications such as real time video and high-quality voice calls as well as uninterrupted Wi-Fi access on moving vehicles such as police cars, fire trucks, buses and trains. The HotPort AutoMesh protocol delivers seamless roaming with zero-packet loss and zero-handoff delay.

Advanced Management Architecture

Client/Server Architecture - HotView Pro is implemented in a traditional client/server design. The server utilizes a database to store and export mesh and node configurations, operating statistics, fault log records, administrator access privileges, and user preferences. One or more clients provide the intuitive GUI for the many management tools. The client and server functions operate across a LAN or WAN, or can be collocated on a single platform.

Managing Multiple Mesh Networks - Each local or remote HotView Pro client is capable of managing one or more HotPort mesh networks from a single screen. Multiple networks can be independent, or integrated to form a single mesh environment. Real-time monitoring depicts a graphical view of active connections in the mesh topology, along with a display of mesh/node statistics and event/fault logs. The display can be customized by importing a floor plan, map or drawing to show the physical location of all nodes in the mesh. The MultiMesh feature displays all mesh networks in a

single comprehensive view, and also allows each mesh to be displayed separately.

Multi-user Management - HotView Pro allows multiple administrators to be assigned different management capabilities. Each administrator is granted a set of password-protected access privileges, including the ability to change (Read/Write) or simply monitor (Read Only) either a single mesh or multiple mesh networks. To support good change management practices, only one user at a time is granted full Read/Write capability for any mesh. HotView Pro also includes a default ID lockout feature that enables redefinition of default user IDs to thwart possible brute-force attacks.

SNMP Management - SNMP management allows network administrators to customize and integrate management of individual or multiple HotPort mesh networks into a network management system such as HP OpenView or IBM NetView. SNMP enables large enterprises and system integrators to customize mesh management for their users.

