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Cisco Launches City-Wide Outdoor Wireless “Mesh” Solution

HP and IBM Support Cisco with Advanced Wi-Fi Roll-out to Municipalities

FELTHAM, UK, November 15, 2005 — In an era of booming, city-wide wireless fidelity (Wi-Fi) deployments, Cisco Systems® today announced the unveiling of a Cisco first – an intelligent wireless “mesh” solution that leverages Cisco’s advanced technology leadership in Wi-Fi technologies to enable municipalities to provide high-speed wireless network and Internet connectivity services.

“The market drivers that propelled widespread wireless adoption in the home and enterprise are now spurring a new demand to provide outdoor ubiquitous connectivity by wireless mesh technologies,” said Alan S. Cohen, senior director, wireless networking business unit at Cisco Systems. “With Cisco’s Wi-Fi mesh solution, cities and local service providers will be able to implement a secure and self-healing outdoor wireless network that not only gives the public access to the Internet, but allows cities to roll-out new and advanced services that build upon their existing indoor networks and applications.”

“Mesh networking is emerging as a high-growth market area, and HP is well positioned to provide the integration services required by municipalities and enterprise customers,” said Mike Rigodanzo, vice president of Technology Services, HP. “Building on our companies’ relationship around indoor wireless, HP plans to work with Cisco in the mesh space to offer customers an outdoor wireless solution that combines Cisco’s wireless technology with our integration services to accelerate deployments worldwide.”

“Cisco’s wireless intelligent mesh system is an excellent answer to the growing needs of IBM’s customers in deploying digital communities,” said Michael Dillon, director – Safety, Security & Community Broadband, IBM. “The new mesh wireless option helps position IBM

and our long-standing partner, Cisco Systems, to continue as a leader in the global adoption of community broadband wireless access and IP networking services.”

Dayton, Ohio and Lebanon, Oregon – Every-Day Cities Deploying Mesh

“Ubiquitous access to the Internet is what drove the city of Dayton to consider wireless mesh technologies,” said William E. Hill, director, Information and Technology Services for the city of Dayton. “By working with HarborLink, a local wireless Internet Service Provider, we have created a public-private partnership that is ushering in a new era of free Internet access for all.”

Dayton, Ohio is a three-time “All-America City Award” winner, and with 166,000 residents, it exemplifies a majority of U.S. cities. Today, one-square mile is “painted” with free Wi-Fi access, however the city plans to have its 55 square miles covered by the end of 2006. Future plans may even include placing mesh access points on city buses to provide commuters with Internet access.

On the other end of the municipality spectrum is Lebanon, Oregon. With a population nearly 13,000 Lebanon mirrors hundreds of other small town environments where offering affordable high-speed Internet access has been a challenge. Here, the Cisco Wi-Fi mesh solution covers 40 percent of the town, but in Lebanon, the focus is on rolling out new city services on top of the mesh network. The city plans to test the mesh network with police cars and public works vehicles equipped with mobile terminals. This way, officers and city workers can wirelessly connect back to their existing IT infrastructure and take advantage of their applications, IP communications and streaming video.

“With mobile tools and field reporting using wireless, this will be a big step in the evolution of efficiency,” said Tom Oliver, information service manager for the city of Lebanon, Oregon. “If a public works maintenance crew needs to fix a shut off valve, they can see in real time where it is below the ground. With aerial photos and line work, such as pipes, there is a lot of visual material that requires the bandwidth that the mesh network can provide.”

Cisco Wireless Mesh – Advanced Intelligent Wireless Routing

One of the technology breakthroughs in developing the Cisco mesh solution was the innovation of the Adaptive Wireless Path Protocol. Specifically designed for massive wireless network environments, this protocol enables a remote access point (AP) to dynamically select the best data path among other APs within the mesh coverage area. This provides greater data resiliency to radio frequency (RF) interference, and helps to ensure optimal network capacity.

As new access points are added to expand the network, each AP dynamically adjusts data routing schemes for maximum efficiency. Adaptive Wireless Path provides Cisco's new access points with an unparalleled level of wireless networking sophistication and capability.

New Access Point – Cisco Aironet 1500 Series

Purpose built for large-scale deployments, the Cisco Aironet 1500 Series offers several unique features that make it an ideal choice for mesh networks. Its design allows it to be deployed anywhere – rooftops, light posts, power poles. All that is required is a source of power. With a “zero-configuration” deployment capability, the 1500 Series contains additional built-in intelligence so it can automatically set-up and configure itself to operate within a mesh network. This capability allows it to “self-heal” if power should go down or some other interruption occurs, thus reducing maintenance and management costs.

Additionally, the 1500 Series utilizes two radios for maximum data integrity and throughput. With one radio dedicated to AP-to-AP communications, the other radio is free to use all available data channels while minimizing the chances of RF interference. Because of this dual-radio design, the APs can segment the wireless network for different types of user types, such as for police, fire, municipal services, etc., who can then securely tie back into their existing indoor network.

Recognizing the need for security, the new 1500 Series are fortified by integrating hardware-based Advanced Encryption Standard (AES) encryption between nodes, and are Wi-Fi Protected Access 2 (WPA2), (WPA), and Wired Equivalent Privacy (WEP) compliant, which culminates in a hardened, end-to-end Cisco unified wireless architecture.

Unified Wireless Architecture – Centralized Mesh Controllers

Balancing the high-performance capabilities of the Cisco Aironet 1500 Series APs are the Cisco wireless LAN controllers. These controllers run Cisco Wireless Control System (WCS), which provides the scalable management, security, and supporting tools to manage a mesh network. Device configuration, security policies and RF parameters are easily managed, while traffic statistics, link characteristics and client information are instantly available to network administrators.

The Cisco outdoor wireless mesh solution is available now to select resellers and solutions providers. More information about Cisco's complete enterprise wireless solutions can be found at: www.cisco.com/go/wirelessmesh.

About Cisco Systems

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