

Intel IXP Network Processor Based WiFi Access Point

Customer Profile

A major networking device OEM in Japan, with a portfolio comprising of networking devices targeting the SOHO market. The client is also a supplier of manufactured equipments for several industry giants.

Business Situation

A networking device OEM in the Japanese market, our client wanted to bring to the growing Wi-Fi hotspot market, a low power Access Point that could easily be configured to provide multiple virtual WLANs. Other criteria included:

- Low BOM cost
- Low power consumption
- Ease of maintenance

Being a company focused on device manufacturing, our client's limited embedded software development expertise posed an obstacle to release the finished product into market.

Technical Situation

A brief study conducted by our team pointed to the need for a low-cost processor based solution with integrated interfaces support and low power consumption. A quick product turn-around also mandated a mature product with solid developer support.

A business need for room to grow, favored a solution with performance headroom and support for add-on applications, planned for future versions of the device.

Solution

NeST chose a solution based on Intel's IXP425 Network Processor and Jungo's OpenRG operating system. The processor, with a core based on Intel's XScale architecture provided blazing network performance without impacting add-on application performance.

NeST's experience with IXP series and Intel development tools contributed to the narrow development schedule.

Major features include:

- Based on Intel IXP425 processor with XScale core
- WiFi chipset – Atheros 5212/5213
- BSSID
- Upto 16 SSIDs (Virtual LANs)
- Wireless Distribution System (WDS)
- Virtual LANs extends over the WDS
- Complete virtualization of Access Point features
- Security - Open, WEP, WPA, WPA2 (802.11i)
- Handover (802.11F)
- RADIUS accounting
- WebRedirect – to automate registering guest users
- Super G and XR
- QoS (802.11e)
- RADIUS accounting
- Remote firmware update
- Management via HTTPS, SSH and SNMP
- Router functionality (RIP, NAT/NAPT, DHCP Relay/Server, DNS Proxy, PPPoE etc)



Benefits

A fully certified product was launched into the Japanese market within the planned time frame. It was estimated that the customer had saved about 40% development cost and 20% schedule over in-house estimates, by partnering with NeST.

Considerable development effort overhead was minimized by choosing a design based on the mature IXP platform. Moreover, the design and the platform provided enough performance/ feature overhead to address development of two additional new premium variants of the Access Point.

Low BOM cost enabled our client to position the product competitively in the SOHO market segment.

About NeST

NeST Software (Network Systems & Technologies (P) Ltd) is a technology company which offers customized software and hardware development services for engineering applications and product development services for customers worldwide. NeST Software, is the software division of SFO Technologies and part of the NeST Group of companies.

The NeST software Division is certified at ISO 9001 and ISO 27001. NeST is one of the pioneers in the Software Industry to be assessed at CMMI v1.1 (IPPD/SE/SW/SS) Maturity Level 5 in early 2003. With some of the world's leading corporations as customers, NeST has business operations in the United States, Canada, India, Japan, Europe, UK, UAE, Qatar & Australia.

In addition to our group strengths in hardware manufacturing, electronics R&D & fiber Optics, we specialize in offering customized services and solutions in:

- Embedded Systems Development
- Product Engineering
- System Software and Applications
- Industrial and Process Automation
- Consumer Electronics & Multimedia Solutions
- Medical Modality Devices & Solutions
- Broadband Solutions
- Security Solutions

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