

area. As a personal project, developed an experimental implementation of the Locator and ID Separation Protocol (LISP), written in C++ and for multiple Unix-based operating systems (Linux, FreeBSD, MacOS).

2004-2008

[ThingMagic](#), Cambridge, MA

Vice President, Product Development

Lead four teams of engineers responsible for all technical functions in a fast-growing RFID start-up, including hardware and software development, quality assurance, compliance testing, technical support and manufacturing. Lead the successful transition of ThingMagic from a consulting company to a product company. Shipped the first commercial product manufactured by ThingMagic, a Linux-based stand-alone RFID reader. Managed the development of ThingMagic's first embedded RFID reader module from conception through product delivery.

Wrote high-level design documents and interface specifications for most of ThingMagic's software releases. Responsible for the quality and consistency of ThingMagic's customer-visible interfaces, including the fixed reader APIs and the embedded reader serial interface. Reviewed detailed design documents, and performed code review to ensure compliance with designs, coding guidelines and interface conventions. Served as the main technical contact for "MercuryOS Developers", partners who developed software to interface with ThingMagic readers.

Defined ThingMagic's Product Development Process, established an intellectual property program, developed support policies, deployed an issue tracking system, and established quality and compliance testing procedures.

Represented ThingMagic at EPCglobal, the leading RFID industry standards body. Served as co-chair of the EPCglobal Software Action Group (SAG), jointly responsible for all of the software groups within EPCglobal. Served on the EPCglobal Technical Steering Committee (TSC) and Joint Strategic Planning Committee (JSPC), helping to set technical priorities and strategic direction. Presented EPCglobal technology at EPCglobal Joint Action Group (JAG) meetings around the world. Continued participating in the IETF, leading and tracking IETF activities of interest to ThingMagic.

1995-2003

[Wind River Systems](#), Nashua, NH

Principal Technologist (2001 - 2003)

Provided technical leadership for the Wind River engineering team. Lead the Principal Technologists Group, which served as the "virtual CTO" of Wind River, responsible for Wind River's technical vision and the alignment of our engineering activities with corporate strategy. Traveled to Washington to educate U.S. Government officials on new Internet technologies (such as IPv6), consulted with the President's Critical Infrastructure Protection Board on Internet security issues, worked with policy makers in topics related to Internet technologies and open source software. Ran Wind River's intellectual property program, with support from corporate counsel.

Provided architectural oversight for the WindManage device management technology line, a set of portable embedded software products written in C and C++. Designed and lead the implementation of Wind River's next-generation integrated device management system. The system consisted of a "backplane" component that allowed access to a single set of

configuration and statistics information via multiple user interfaces: Simple Network Management Protocol (SNMP), Command-Line Interface (CLI) and Web-based (HTTP/HTML) management.

Designed and implemented a high-performance IPv4/IPv6 forwarding engine for Wind River's embedded TCP/IP stack, including a plug-in architecture to support an AVL tree-based software-only forwarding engine, or hardware acceleration via forwarding ASICs.

Actively participated in the IETF, holding several leadership positions. Lead the IETF's IPv6 efforts, as chair of both the IPv6 and IPv6 Operations Working groups. Lead the initial effort to standardize NETCONF, an XML-based network device management protocol.

Director, Device Management (2000 - 2001)

Lead the Device Management team within Wind River Networks, responsible for the design, development, testing, documentation, support and maintenance of Wind River's device management technologies, including SNMP, Command-Line Interface (CLI), Web-based management and a Web Services interface (XML/SOAP). Grew the group from eight to forty-seven people over 1-1/2 years, through hiring and acquisition. Took a leadership role in strategic planning, roadmap development, technical requirements definition and software architecture. This was a distributed team, with offices in the Boston, San Francisco and Calgary areas.

Performed technical due diligence for potential acquisition targets, and successfully managed the integration of an acquired company.

Director of Networking Product Development (1998 - 2000) [Integrated Systems, Inc. (ISI), acquired by Wind River Systems]

Managed a distributed team of engineers responsible for all of ISI's networking products: two TCP/IP stacks (including IP Security & IPv6), IP routing protocols, device management protocols, and basic TCP/IP applications.

Personal technical contributions included the design of a chained buffer management system to enable full "zero-copy" sockets functionality in memory-protected environments. Designed extensions to the Epilogue Attaché TCP/IP stack to provide a small, asynchronous stack for pSOS that could serve as a drop-in replacement for the default BSD-based stack.

Simultaneously served as acting Product Manager for all ISI networking products. Determined product strategy and positioning, wrote marketing requirements documents and product data sheets, participated in public relations activities and performed sales training. Negotiated strategic partnerships in the networking area, and performed technical and organizational evaluations of potential acquisition targets. Grew ISI's networking business from \$8M to \$15M over a two-year period.

Director of Internet Development (1995 - 1998) [Epilogue Technology Corporation, acquired by Integrated Systems, Inc.]

Technical leader and manager for Epilogue's portable TCP/IP stack and IP routing protocols designed for use in embedded systems. Responsible for design, development, testing, documentation, support, maintenance, production and shipping. Wrote technical content for

1995-2003

[Wind River Systems](#), Nashua, NH

Principal Technologist (2001 - 2003)

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Technical Publications

NETCONF Configuration Protocol, [RFC 4741](#), December 2006.

Using the NETCONF Configuration Protocol over Secure Shell (SSH), [RFC 4742](#), December 2006.

Analysis of IPv6 Transition in 3GPP Networks, [RFC 4215](#), October 2005.

Transition Scenarios for 3GPP Networks, [RFC 3574](#), August 2003.

IPv6 and Network Security, USTA TEC Conference White Paper, June 2003.

Recommendations for IPv6 in Third Generation Partnership Project (3GPP) Standards, [RFC 3314](#), September 2002.

IPv6 Enables the Next Generation of Consumer Devices, IPv6 Magazine (Japanese print publication), October 2002.