

Select Applications & Users

Home/Consumer

- Panasonic
- Scientific Atlanta
- Sharp
- Sony

Multimedia

- Delphi
- Pioneer
- NEC
- Nikon

Networking

- Cisco
- IBM
- Lucent
- Raytheon

The Uniconi Advantage

- **One-stop-shop** for all of your embedded IP product development needs
- **20+ year track record** of delivering embedded software to the developer market

Proven

- Fusion TCP/IP Stack is the **most widely deployed** in the world



Uniconi Systems, Inc.
327 Dahlonoga Road
Suite 1401
Atlanta GA 30040

Phone: 678-208-2250
Sales: extension 324
www.uniconi.com

Introducing Fusion OSPF

The Fusion OSPF Routing Protocol Application is a portable software engine that fully implements the Open Shortest Path First Protocol (OSPF) to provide routing per RFC 1583. It has been designed for use in high performance bridges and multi-protocol routers.

By starting from the ground up with a new design (without regard to a particular operating system), the porting process has been greatly simplified. Unlike public domain-based versions of OSPF, the engine assumes no environment such as UNIX/Gated. This significantly reduces overhead and improves forwarding performance by using IP-specific forwarding tables instead of shared tables. Further gains are achieved by optimizing lookup for IP instead of being forced into generic structures. Other problems such as failure to check for alloc() failure, memory loss, and inability to configure without protocol disable are also eliminated.

Product Overview

The Fusion OSPF engine features an "auto virtual link" capability which greatly simplifies user configuration. Virtual links are required to provide paths for inter-area routes. In most implementations, these must be manually configured for every backbone router. Fusion OSPF can automatically determine where virtual links are required and configure them without user intervention. Using a straightforward API, the engine can "leak" routes between RIP and OSPF thus allowing the creation of mixed routing domains and orderly transition from RIP to OSPF. This API is designed to enable easy integration with Fusion TCP/IP or an existing third-party IP implementation.

Fusion OSPF operates as a client of IP. The engine sends and receives using a defined IP protocol number. Upon packet reception, the engine de-multiplexes based on OSPF packet type.

"Hello" packets are used to inform the router of all its neighbors existing on one of its subnets. This information is stored in neighbor databases and is used by the router to determine its active links.

Link information is then disseminated to the entire network in one or more links state advertisements. Link state packets also include the IP network numbers of the subnetwork.

The link-state database consists of the link-state packets sent by all routers in the network. A link-state database exchange and acknowledge mechanism guarantees that all routers have the latest link-state information. Whenever link-state information changes, the Shortest Path First (SPF) algorithm is run to generate a set of routes known to OSPF. These routes are then added to a routing database that also includes RIP generated routes.

Because a SPF generates a complete set of routes each time it runs, "startupupdate" and "endupdate" calls are used to bracket a set of routes from OSPF. In order to allow routes learned via RIP to be propagated to the OSPF domain, a means to 'leak' routes from RIP is implemented whenever a RIP route is added or has a metric changed. This information is added to a locally generated link state packet in the form of an external route.

XML	Web Services
Internet Apps	Graphical Tools
Security	Routing
Network Protocols	Network Management
RTOS	File System
Embedded Hardware	

Unicoi Fusion Product Suite

Fusion Reference Designs

- VoIP Gateway/Terminal Adaptor
- IP Phone

Fusion Net

- TCP/IPv4/v6 Dual-Mode Stack
- DHCP
- DNS
- FTP
- NAT
- OSPFv2
- RTSP
- RTP
- SIP
- SDP
- SNMP
- Sntp
- Telnet
- POP3
- SMTP

Fusion RTOS

- Real-Time Operating System optimized for high-performance DSPs and media-centric microprocessors

Fusion File Systems

- Flash File System
- CIFS

Fusion Web

- HTTP
- XML
- Microbrowser
- GUI Toolkit

Fusion Secure

- IPsec
- IKEv1
- HTTPS

Fusion Algorithms & Codecs

- Please call for details

Fusion OSPF Features

- Intra and inter-area routing
- Type 1/2 external routing
- Manual and automatic virtual links
- Load sharing among equal cost paths
- Broadcast and point-to-point models
- "On-the-fly" configuration
- Operates with Fusion IP or third-party IP
- Full SNMP support
- Operating system independent
- Simplified porting
- Excellent support program
- Training and consultation



Unicoi Systems, Inc.
327 Dahlonoga Road
Suite 1401
Atlanta GA 30040

Phone: 678-208-2250
Sales: extension 324
www.unicoi.com

Build diverse, intelligent devices that get to market quickly with Unicoi Systems.

Unicoi. YOUR ONE-STOP-SHOP EMBEDDED IP SOLUTIONS PROVIDER