

IETF Update

IEEE 802 RPRSG Santa Clara Interim

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IPoPTR

(IP over Packet Transport Rings)

- IPoPTR BOF held at the 48th IETF in Pittsburgh
- Presented packet rings concepts and requirements for increased Layer 3 awareness
- Proposed Charter, goals & milestones tabled for discussion

IPoPTR BOF Objectives

1. Review the proposed Charter for IPoPTR
2. IPoPTR WG formation
3. Introduce concepts unique to Packet Transport Rings and Highlight requirements for extensions to both routing and MAC layer protocols

Concepts & Requirements

Generic Characteristics Addressed

- Physical Point-to-Point, Logical LAN model
- Dual, Counter-Rotating Rings with uniform bandwidth utilized for both control & data packets
- Destination Stripping
- Protection Switching capabilities

Requirements

Characteristics:

- Spatial reuse capability
- Bandwidth consumed only on traversed segment(s)
- Unicast packets travels along ring spans between the src and dest nodes only (Destination stripping)

Requirements:

- IGP knowledge of direct upstream and direct downstream neighbors
- Appropriate LSA/LSP flooding mechanisms

Requirements

General Characteristics:

- Uniform bandwidth on ring spans
- Regional or national topologies with uneven node clusters

Requirements:

- Extensions to cost metrics to allow flexible administrative weights

Requirements

General Characteristics:

- Protection Switching mechanisms

Requirements:

- Immediate notification to IGP of for fast route re-computation

Requirements

General Characteristics:

- Multi-Ring, Hierarchical Topologies

Requirements:

- Traffic Engineering extensions

Requirements

Other Requirements:

- QoS and Traffic Priority Mapping
- MIB Definitions

BOF Conclusions

Recommendations:

- IPoPTR WG to produce a Requirements and Framework document to be presented at the next IETF meeting
- Re-word Charter to reflect this
- IPoPTR will re-Charter after review of the Requirements and Framework document to reflect work required

IPoPTR Revised Charter

Recent enhancements to traditional bi-directional ring topologies provide substantial benefits in efficiency and flexibility. The objective is to leverage these and increase IP efficiencies across these rings. This includes close interaction of Layer 2 & 3 functions and features (i.e. alarm notification, fast restoration / convergence, traffic engineering).

The IPoPTR WG will first deliver a Requirements and Framework Document for review before proceeding with specifications and extensions to the different protocols. After a review of the Requirements and Framework document, a re-chartering process will set the direction for the Workgroup's next work phase.

Upon re-chartering, the IPoPTR WG plans to will deliver IPoPTR Specifications which will address interactions between Packet Transport Rings and the Routing Protocols. This will include enhancements and extensions to the IGPs, extensions to MPLS-TE, extension to QoS features as well as MIB definitions.

This WG will continue a close liaison to IEEE's 802 RPRSG.

IPoPTR Next Step

IPoPTR Framework Document

- Clearly document requirements
- Highlight the motivation and associated benefits
- Define key components, Layer abstractions and partitioning
- Document assumptions, any observations and issues
- Formulate the mechanisms required to accomplish IPoPTR

IPoPTR Mailing List

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To subscribe email: `ptrings-request@cisco.com`
with 'subscribe ptrings' in subject and body of the message