

BGMP BOF

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Agenda

Agenda bashing 5 minutes

BGMP Status 5 minutes

Why BGMP? 20 minutes

Charter Bashing 10 minutes

What is BGMP?

- An Inter-Domain multicast tree building protocol
 - Builds trees of domains
 - Root domain per group determined by G-RIB
 - G-RIB can be built by any number of mechanisms
- Supports multiple tree types
 - Bidirectional shared
 - Unidirectional shared
 - Source-specific
- Specifically designed for Inter-Domain

Why BGMP?

Why not just use bidirectional PIM-SM or RAMA or ...?

- BGMP is an explicitly inter-domain protocol
 - There are many things that you want to do differently inter-domain vs. intra-domain
- BGMP allows your choice of protocol inside each domain
 - Defined inter/intra-domain split
 - Allows evolution of protocols seperately

BGMP Differences

□ Neighbor Discovery

- PIM and CBT: dynamic
 - good for IGP, just plop down new router
- BGMP: static configuration
 - required for an EGP
 - used by BGP and MSDP

□ Bootstrap Mechanism

- PIM and CBT use a bootstrap mechanism for RP/Core discovery which uses periodic multicast and flooding
 - Don't want periodic messages inter-domain
- BGMP uses the G-RIB

BGMP differences 2

□ Multi-Access Links

- PIM and CBT multicast control messages
- Implementing different policy per neighbor requires unicast control messages
- PIM Assert mechanism causes duplicates on multi-access links
- BGMP pre-elects forwarders to prevent duplicates

□ Error conditions

- BGMP has NOTIFICATION messages to explicitly inform neighbors of errors.

BGMP Differences 3

□ Tree Types

○ BGMP does

- Bidirectional Shared Trees
- Unidirectional Shared Trees
- Source-Specific Trees

○ PIMv2 and CBTv2 do not provide this flexibility

- (but Bidirectional PIMv2 may)

BGMP Differences 4

□ State Refresh

- PIM periodically resends all join/prune information
 - ▷ Consumes bandwidth
 - ▷ May respond slowly to topology change
- CBT and BGMP use keepalives between neighbors so can use "harder" state

□ Message Reliability

- PIM and CBT introduce their own reliability mechanisms
- BGMP simply uses TCP, like BGP and MSDP.

Charter Bashing

The BGMP working group is chartered to complete the protocol specification and follow it through the Internet standards track. It will also help to design a transition mechanism from MSDP (the Multicast Source Distribution Protocol, an interim interdomain solution that is unlikely to scale for the long term) to Internet-wide BGMP.

Goals & Milestones

Nov 1999

- Resolve multi-access LAN forwarding mechanisms
- Develop security portion of spec
- Evaluate forwarding rules and transient behavior under a wide range of topologies under simulation
- Evaluate interoperability with multicast IGPs in more detail and identify any relevant optimizations and/or implementation issues.
- Consider monitoring and measurement (e.g. multicast traceroute) and evaluate support for existing and/or new monitoring and measurement tools and protocols.

Mar 2000

- Produce revised protocol specification based upon simulations and evaluations
- Produce initial version of MIB
- Design a transition architecture from PIM-SM/MSDP to BGMP

Goals & Milestones

Jul 2000

- Guide the development of a reference implementation
- Oversee interoperability experiments
- Submit final version of protocol specification Internet Draft

Nov 2000

- Finalize MIB
- Produce applicability document

Charter Bashing...

Input!

Action Items

- Need volunteers for action items.
- Security
- Simulation
- Interoperability
- Monitoring & Measurement
- Transition
- MIB