

Hierarchical J/P attributes

draft-venaas-pim-hierarchicaljoinattr-00.txt

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Introduction

- Join attributes (should be called Join/Prune attributes) are today encoded in source addresses
 - For each (S,G) join/prune we can specify attributes
 - Think of $(*,G)$ as a special case of (S,G)
 - If the same attribute type and value is to be specified for all the (S,G) s in the message, it needs to be repeated for every single (S,G)
- Proposing an optional hierarchical scheme with the following properties
 - If an attribute type and value applies to every (S,G) in the message, only include it once in the message
 - Also, if an attribute type and value applies to every (S,G) for a given group G , only include it once for the group G

J/P message format

PIM Ver	Type	Reserved	Checksum
Upstream Neighbor Address (Encoded-Unicast format)			
Reserved	Num groups	Holdtime	
Group Set 1			
...			
Group Set n			

Each message contains a single Upstream Neighbor Address and a number of group sets

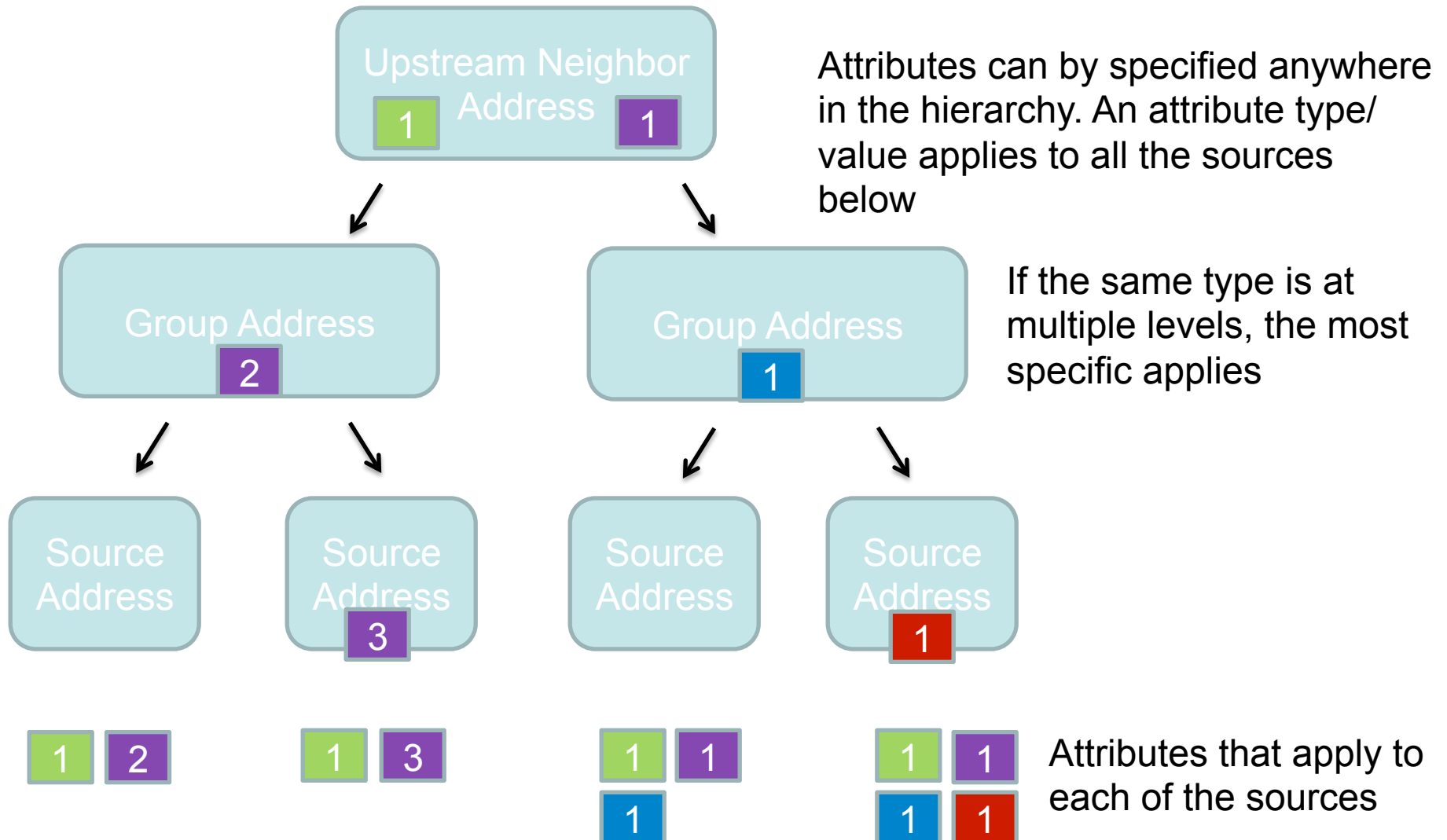
Multicast Group Address 1 (Encoded-Group format)
Number of Joined Sources Number of Pruned Sources
Joined Source Address 1 (Encoded-Source format)
...
Joined Source Address m (Encoded-Source format)
Pruned Source Address 1 (Encoded-Source format)
...
Pruned Source Address k (Encoded-Source format)

Each Group Set contains a Group Address followed by lists of joined sources and pruned sources

We have 3 different address objects, all in an encoded format

Upstream Neighbor Address
Multicast Group Address
Source Address

J/P Attribute Hierarchy



Encoding types

- RFC 4601 defines encoding type 0 (native), and it is used for encoded-unicast, encoded-group and encoded-source formats
- RFC 5384 defines encoding type 1 (join attr) for encoded-source format
- I think it makes sense to have a single encoding type space that applies to all encodings
 - Encoding type 1 (join attr) for all encodings would allow the described hierarchical scheme
- The IANA source-encoding type registry should be turned into a common encoding type registry