

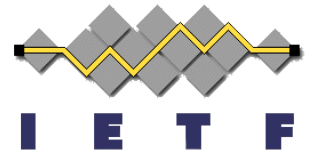
# OSPFv3 Extended LSA Migration

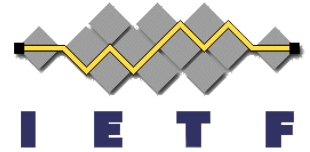
Acee Lindem, Cisco

Abhay Roy, Cisco

Sina Mirtorabi, Cisco

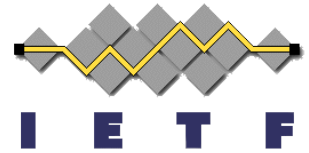
Fred Baker, Cisco





# Extended LSA Status

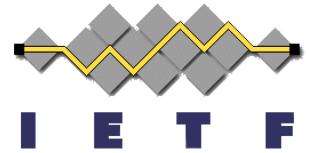
- Draft has been fairly stable
- Still no implementations ;^(
- OSPFv3 Extended LSAs are required for segment routing though.
- Migration appears to be an implementation barrier (especially the 3-step migration)



# Previous Migration Paths

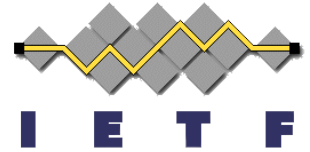
- Green Field OSPFv3 Network or maintenance window
- OSPFv3 Separate Instances for Extended and Legacy LSAs
- OSPFv3 Three Step Migration
  - Advertise Extended LSAs and legacy LSAs
  - Use Extended LSAs for SPF calculation
  - Purge Legacy LSAs

# New Migration Mode - Sparse Mode Operation



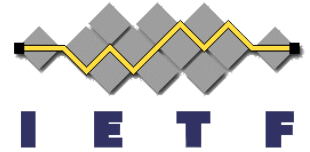
- Legacy LSAs are always used for the SPF Computation.
- OSPFv3 Extended LSAs are used solely for new capabilities and ONLY LSAs and TLVs necessary for this capability are originated.
- OSPFv3 LSA Options indicate OSPFv3 Router is not using OSPFv3 Extended LSAs since this is a true reflection migration mode.

# OSPFv3 Extended LSA Compliance



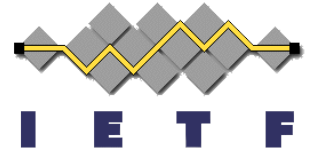
- OSPFv3 Extended LSA Sparse Mode Only
- OSPFv3 Extended LSA Sparse Mode and Full Support
- OSPFv3 Extended LSA Sparse Mode and the painful migration with all three modes (possibly will deprecate this and move it to an appendix and if no one is going to support it)

# Why Remove 3-Step Extended LSA Migration?



- Complexity represents implementation/adoption barrier – No existing implementations.
- Multiple instance and route distance/preference manipulation migration already exists and is understood.
- OSPF is I/O bound with flooding mostly responsible – Integrated migration doesn't save that much processing over multi-instance.

# More Why Remove 3-Step Extended LSA Migration?



- Separate instances also provide better isolation and verification since both SPF computations are performed and results can be compared.
  - Some platforms even have separate processes for separate instances.
- Less chance for bugs since no dependence on new and limited usage logic.