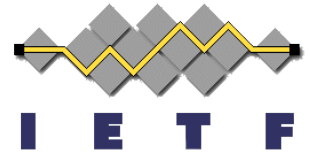
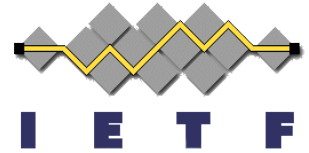


OSPFv3 Extended LSA YANG Model IETF 104, Prague

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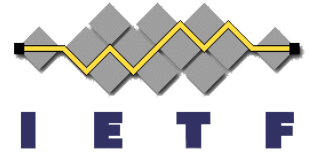


OSPFv3 Extended LSA YANG Requirement



- OSPFv3 Link State Advertisement (LSA) Extensibility published in RFC 8362
- Several implementations but not universal
- Not included in base ietf-ospf.yang model
- Many OSPFv3 features require OSPFv3 Extended LSAs
 - OSPFv3 Segment Routing
 - OSPFv3 Admin Tags
 - OSPFv3 SRv6
 - BIER Extensions for OSPFv3
- Requirements
 - OSPFv3 Extended LSA Origination
 - State Data for OSPFv3 Extended LSA encodings

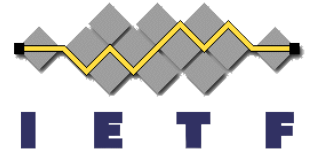
OSPFv3 Extended LSA YANG Configuration



Augment both Instance and Area configuration
with OSPFv3 Extended LSA Support:

```
module: ietf-ospfv3-extended-lsa
augment /rt:routing/rt:control-plane-protocols/rt:control-plane-
  protocol/ospf:ospf:
  +--rw extended-lsa-support?  boolean {extended-lsa-support}?
augment /rt:routing/rt:control-plane-protocols/rt:control-plane-
  protocol/ospf:ospf/ospf:areas/ospf:area:
  +--rw extended-lsa-support?  boolean {extended-lsa-support}?
```

OSPFv3 Extended LSA YANG Operational State



Augment both Instance, Area, and Link LSA

Databases with the Extended LSA Encodings:

```
augment /rt:routing/rt:control-plane-protocols/rt:control-plane-  
protocol/ospf:ospf/ospf:areas/ospf:area/ospf:database/ospf:area-scope-  
lsa-type/ospf:area-scope-lsas/ospf:area-scope-  
lsa/ospf:version/ospf:ospfv3/ospf:ospfv3/ospf:body:
```

```
+--ro e-router
```

```
| +--ro flags?      bits
```

```
| +--ro options     bits
```

```
| +--ro e-router-tlvs* []
```

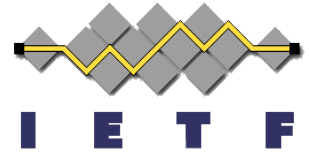
```
|   +--ro unknown-tlv
```

```
|     | +--ro type?  uint16
```

```
|     | +--ro length? uint16
```

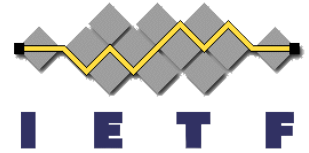
```
|     | +--ro value? yang:hex-string
```

OSPFv3 Extended LSA YANG Operational State



```
|  +--ro link-tlv
|    +--ro link-tlv-type?      identityref
|    +--ro link-tlv-length?    uint16
|    +--ro interface-id?      uint32
|    +--ro neighbor-interface-id?  uint32
|    +--ro neighbor-router-id?  rt-types:router-id
|    +--ro type?               uint8
|    +--ro metric?             uint16
|    +--ro sub-tlvs* []
|      +--ro unknown-sub-tlv
|        +--ro type?          uint16
|        +--ro length?       uint16
|        +--ro value?        yang:hex-string
```

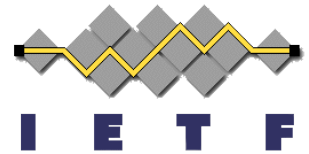
OSPFv3 Extended LSA YANG Operational State



+--ro e-network

```
| +--ro options      bits
| +--ro e-network-tlvs* []
|   +--ro unknown--tlv
|     | +--ro type?   uint16
|     | +--ro length? uint16
|     | +--ro value?  yang:hex-string
|   +--ro attached-router-tlv
|     +--ro attached-router-tlv-type?  identityref
|     +--ro attached-router-tlv-length? uint16
|     +--ro Adjacent-neighbor-router-id? rt-types:router-id
|   +--ro sub-tlvs* []
|     +--ro unknown-sub-tlv
|       +--ro type?   uint16
|       +--ro length? uint16
|       +--ro value?  yang:hex-string
```

OSPFv3 Extended LSA YANG Next Steps



- Request review and comment
- We will socialize on LSR list and initiate discussion
- LSR WG Adoption
- Investigate YANG when constraint to avoid OSPFv3 Extended LSA inclusion in wrong scope LS Database for type?
 - Not done for base LSAs in ietf-ospf
 - Probably not required for operational state