Next Generation and OSI

- This is the nosi BOF
- There is no consensus yet whether IETF should work on OSI to IPv6 conversion mechanisms.
- To resolve this it is best to understand the requirements first.
- Then we can consider

Which work items should be recommended to IESG and w*ho could work on them?*

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Discussion plan

1. Agree on general OSI to IPv6 conversion *requirements* (or are they "situations"?)

2. Agree on major network layer *scenarios*

3. Identify useful *mechanisms* and hear from their proponents

OSI to IPv6 conversion requirements

R1. existing CLNP net wants to migrate to TP4 over IPv6.

R2. existing CLNP net wants to migrate to Internet applications over IPv6.

R3. planned CLNP net changes plan to TP4 over IPv6.

R4. planned CLNP net changes plan to Internet applications over IPv6.

R5. TP0/CONS net wants to migrate to TP0 over IPv6.

R6. others...

Final network layer scenarios

S1: Final goal is pure IPv6 net with pure IPv6 addresses, no trace of CLNP or NSAPs

+ simplest possible scenario, no legacy

-- all CLNP investment lost

S2: Final goal is IPv6 net in which some hosts have NSAP addresses

+ NSAP addressing plans preserved

-- extra complexity in hosts and routers

-- two address plans connected only by IDRP

-- anyway there is no CLNP service

Final network layer scenarios (2)

S3: Final goal is pure IPv6 net with pure IPv6 addressing and routing, but NSAP addresses are transported end-to-end as an option.

+ preserves NSAP plans as pseudo-EID

+ complexity limited to participating hosts

-- two independent addressing schemes

-- still no CLNP service

S4: Tunnel CLNP over IPv6

+ no modification to IPv6

+ preserves CLNP investment

-- CLNP hosts only see each other

Some mechanisms

M0. Null. Tell CLNP users "just run IPv6"

+ simple and cheap to develop :-)

-- brutal

M1. Full CLNP to IPv6 transition plan (ABUT = Avoiding Brutal User Transition)

+ stepwise transition like SIT

-- expensive to develop and deploy

M2. Squeeze NSAPs into 16 bytes

+ no change to IPv6 header

-- reduces NSAP space; complicates routing

Some mechanisms (2)

M3. Map 1Pv6 addresses within NSAP format
+ useful for stepwise transition
M4. Carry full NSAPs in IPv6 extension headers
+ preserves full NSAP space
-- complicates routing
M5. Carry NSAPs as end-to-end option
(mechanism for S3)
M6. NextHeader = CLNP
(mechanism for S4)

Some mechanisms (3)

M7. Update RFC 1006 (TP4 over TCP over IP)

M8. Support TP4 directly over IPv6

M9. Map NSAPs to IPv6 addresses via DNS