

IETF History and Architecture

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Purpose

- Brief background on signaling at IETF
- IETF perspectives
 - Earlier considerations of offpath
 - Considerations on protocol extensions

RSVP and NSIS

- RSVP
 - Grew on resource allocation
 - On path, discovery in all
 - Additional applications (MPLS uses) as a variant
- NSIS
 - Two layers for independence from applications
 - On path, discovery one mode
 - Partial decoupling in development

RSVP Extension

- RSVP design with objects, object-specific parameters, filters, temptingly extensible
- The extensions uses the syntax, change the protocol state machine
- RFC 3936 (2004) manages the extensibility but the original protocol is RFC 2205 (1997)

NSIS Extension

- Transport protocol - GIST
- Application protocols
 - NSLP (qos)
 - NATFW
 - ... (uncharted)
- Extensibility design is in final stages of review by working group
- Perhaps GIST could convey signaling application for this research

SIP

- SIP design: one UA offers characteristics of a media stream, including its endpoint coordinates, peer answers with agreed-on values (its own and offerors').
- They arrange establishment of the off-path media stream
 - In practice: considerable effort to re-couple and other complexities...but the architecture is there

SIP Extension

- SIP design with text-based, unordered headers and object inclusion, is also temptingly extensible
 - Despite mechanisms for checking peer support, dialectization and success failure loomed
- RFC 3427 (2002), following the SIP spec, RFC 3267 (2002), manages the extensibility.
 - Note: same year, not 9 year gap!

Offpath Signaling

- One experience with offpath signaling: SIP operator pressures
- Other: since chartering, NSIS has had requests for signaling not to be bound to the path
 - Central control
 - Signaling in entities not only in the path (partial decoupling)

PADS BoF

- PAtch-Decoupled Signaling (PADS) was a TSV BoF in Spring 2003.
- It focused on centralized control, architected something like a vpn
 - Its orientation was qos and te. Compare the current PCE WG for MPLS
- People identified scaling and routing concerns strong enough to proceed

Partial Decoupling

- NSIS has a proposal to allow entities not onpath to participate in a supporting manner
- Just an informational pointer:
draft-hancock-nsis-pds-problem-03

Conclusions?

- Choose to extend an existing protocol only with great care (even when the protocol is new)
- Understand the RSVP and SIP experiences
- Research here is a great idea even with those caveats