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UNLEASHING
A SERVICES
RENAISSANCETM

Open issues from SIP list

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DHCP SIP Options

- Actually, no open issues
- Status:
 - no comments from DHCP group, which issued last call 4 weeks ago
 - comments from naming list recommended dropping SRV mimicking
 - new version to be submitted after IETF
 - Then to IESG for proposed
- Comments on new fast-track method?

Content in INVITE

- Wish to add things like JPEG, etc to INVITE
- Several issues:
 - Allow content in message itself, or indirectly vs. URL?
 - In message itself speeds up calls
 - UDP fragmentation bad
 - Wasteful if not understood at far side
 - PROPOSAL: both w/ guidelines
 - If content indirect, how is it referenced?
 - Via new headers: easier
 - As URI list in body: consistent with direct reference

Ugly WWW-Authenticate Syntax

- WWW-Authenticate uses commas as value separators and parameter separators

WWW-Authenticate: Digest, response=sda90sda, Digest, uri="sip:hello"

- Parsing this is hard
- Proposal:
 - If multiple values exist for the authentication headers, they MUST appear as separate headers

Tel URL vs. SIP URL

- Issue:
 - For phone numbers, when is sip url and tel url used?
 - Problem that was raised: if a device has an address like tel:101, which is its internal extension, and it transfers/redirects, this number is not resolvable outside system
- Proposed solutions:
 - tel URL contain tsp parameter indicating domain to go to
 - sip URL for numbers not internationalized, tel URL ONLY for internationalized numbers

URL Parameters for phones

- How to indicate that LNP translation has taken place?
 - Some kind of LNP parameter
 - tel URL when translated, SIP URL when not?
- How do indicate numbering plans and contexts?
 - phone-context parameter
 - need to define new parameters as new contexts are needed
 - Always SIP URL, with context as part of domain name
 - requires extra DNS entries
 - context is part of the user part of the SIP URL
 - user part is always within scope of domain

To Quote or not to Quote

- BNF for digest-uri (used in Authorization and Proxy-Authorization) has no quotes
- All examples have quotes
- Common usage seems to be with quotes
- No response from http basic/digest authors
- Which should we use?
 - Proposal: with quotes

Reinvite glare

- A re-INVITEs B and B re-INVITEs A at same time
- Since re-INVITE affects shared state, need some kind of resolution
- Proposal 1:
 - 500 response with random Retry-After
 - Ethernet style approach
 - Problem: retry-after large to give sufficient randomness - makes completion slow
- Proposal 2:
 - precedence - well known algorithm to decide who wins
 - Problem - needs additional headers to work
- Proposal 3:
 - Proposal 1 + randomization of interval

Authorization/Encryption of Media Streams

- SDP contains source address?
- SDP contains SSRC?
- How to do authorization of media streams w/o decryption
 - HMAC at end of RTP packet
 - rfc2198 encapsulation of HMAC
 - RTP extension
- Which ways to encrypt media streams?
 - IPSec
 - RTP Security
- Key exchange?
 - Diffie Helman within SDP
 - IKE/ISAKMP
 - Encrypted SDP in SIP INVITE contains key
 - Encryption from proxy/RTP translator out

SIP Authorization

- How many ways?
 - One or many?
- Approaches
 - Current basic and digest
 - Kerberos tickets in request
 - RADIUS authorization

When to send 183?

- Always send 183 when ACM comes at PSTN GW
 - allows any tone/announcement to be played
- Use 1XX response as appropriate
 - Possibly even 4xx
 - Determine which one from ISUP release codes?
- From GW Send 183 first, followed by better provisional response, if known
 - Seems like best solution

Overlap Nastiness..

- We all hate overlap, but...
- Proposed solution was to send multiple INVITEs, with different To & request URI, for each digit
- Problem:
 - How to guarantee these are routed to same egress gateway??
- Record-Route?
 - Subsequent INVITEs have different To - Record-Route no persistent across call legs

Early media distinction

- Need to distinguish media from a PSTN GW that's critical from media that's not
- Proposal 1
 - PCs send 180
 - Gateways send 183
 - Always accept early media on 183
- Proposal 2
 - Always pay attention to media in provisionals
 - PCs shouldn't send SDP in provisionals
- Question:
 - Should there be a way for caller to indicate “don't send me early media”? Caller preferences?
 - How to talk to PSTN if it can't?

481 Response to new INVITE w/ tag?

- UAS receives an INVITE with a To field containing a tag
- Old invite for old call
- What to do?
 - Reject with 481
 - Prevents old messages from establishing bad calls
 - Re-establish call
 - May help in cases of crash and restart
 - Depends on session

Simultaneous Transactions

- Can a UAC send a request whilst another request is still pending?
 - Spec currently says no
 - This might be overly restrictive
 - Overlap, for example, might need this...
 - Rapid re-invites for mobility?
 - UAS can always
 - reject requests whilst one is pending
 - queue them up and respond to all at once
 - other possibilities
- Question: should we allow it?