

RFC 6665, REFER, and GRUUs (aka “REFER Madness”)

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Thursday, March 6, 2014

Background

- Through experience gathered via standardization efforts and interop events, we determined that introducing dialog reuse was a mistake.
- Consequently, RFC 6665 states: “[T]he dialog reuse technique described in RFC 3265 is now deprecated.”

But REFER is special, right?

- No, we explicitly decided not to exempt REFER:

“[T]he prohibition on reusing dialogs does not exempt implicit subscriptions created by the REFER method. This means that implementations complying with this specification are required to use the “Target-Dialog” mechanism described in [RFC4538] when the remote target is a GRUU.”

Okay, but you don't have to use a GRUU, do you?

- Yes. You do.

*“Notifiers **MUST** implement the Globally Routable User Agent URI (GRUU) extension defined in [RFC5627], **and MUST use a GRUU as their local target**. This allows subscribers to explicitly target desired devices.”*

But REFER is special, right?

- Don't make me go back two slides.

What about if we use RFC 4488?

- Ah, yes, that's actually a little interesting. RFC 4488 defines the "norefersub" extension.

*"If the **REFER-Recipient**^[1] supports the extension and is willing to process the REFER transaction without establishing an implicit subscription, it **MUST** insert the "Refer-Sub" header field set to "false" in the 2xx response to the REFER-Issuer."*

[1] That's the same as the NOTIFIER, in RFC 6665 terminology

Wait, what was that footnote?

- Oh, right. That's important. The "REFER recipient" is the same as the Notifier, in RFC 6665 terminology.

*"Notifiers **MUST** implement the Globally Routable User Agent URI (GRUU) extension defined in [RFC5627], **and MUST use a GRUU as their local target**. This allows subscribers to explicitly target desired devices."*

But if we're using RFC 4488, he doesn't *have* to be a Notifier, right?

- Not always.
- But he won't know that when he sets up the dialog.

But what about if he puts “Require: norefersub” in the first INVITE?

- Wait. What?
- Are you kidding?
- Do you really want the call to **fail** if the other side doesn't implement a minor protocol optimization?

Yes. I want calls to fail rather than sending two extra messages.

- I question your stewardship of a network.
- However, even going nuclear like that doesn't do what you want.
- If the Notifier sets up the dialog with a "Require: norefersub", it requires that the other side understand the extension defined in RFC 4488.
- **But it does not require them to use it.**

Wait, What? Why not?

- The “norefersub” option tag simply says that you support RFC 4488, not that you plan to use it for every dialog.
- The “Refer-Sub” header field (set to “true” or “false”) is what *actually* controls whether the NOTIFY is suppressed.
 - I mean, think about it – the only way you can get a “Refer-Sub: true” is if you understand this extension and want NOTIFYs anyway.

But what if I know, *a priori*, that *all* clients will support *and use* “Refer-Sub: false”?

- Sorry, that’s not how SIP works.
- All behavior is negotiated.
- Walled gardens grow doors.

Next Steps

- Clearly, there is confusion here.
- But is there an actual errata to be filed?
 - Is some document actually wrong, or does this situation merely require making lots of logical connections that aren't immediately obvious?
- Or do we need an informational draft that walks people through the conclusions outlined in this slide deck?
- Or are things okay as they are?