Instance Identifiers for SIP User Agents
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Abstract

There are places in building SIP [2] based communications systems where it is useful to have a stable identifier for particular user agents that are used for user communications. This draft defines a convention for names that can be used to satisfy these needs.
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1. Conventions and Definitions

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in RFC-2119 [3].

2. Introduction and Use Cases

There are a few cases in which it is convenient to be able to identify instances of a user agent. Some examples are described. They all require the name to be stable across reboots of the device.

In the config framework[4], a user agent sends a subscribe to fetch its configuration. It needs to get the same configuration each time.

A particular user, Alice, has several user agents that all register as Alice. A registrar wishes to report which user agent are currently registered to a network management system. For this reporting to make sense, each of Alice’s user agents must have a stable name.

A system that is using the dialog package to monitor a particular user agent would like to be able to assign an alias like "My Office Phone" for display purposes to that particular user agent.

When several presence user agents are providing presence data, it must be possible to correlate a particular set of data with the particular device that provided it.

In all these cases, the user agent could be a software program running on a computer with more than one user.

3. Requirements

The identifier needs to be unique.

Identifiers are needed for user agents that are in dedicated pieces of hardware such as IP phones.

Identifiers are needed for software user agents running on multi-user computers.

In some of the cases with IP phones, it is desirable for this same identifier to be recorded as a bar code on the outside of the box that the IP phone comes in.
4. Solution

User agents that follow the convention of this document MUST put a unique identifier in a new tag, called "instance", of the Contact header when sending a SIP request. They MAY omit this for a particular sequence of SIP messages if the user has requested it be removed for privacy reasons.

The unique identifier has no real semantic information other than uniqueness. In cases in which the user agent runs on a single computer and this is the only user agent on that computer, the MAC address of the primary network card is the preferred identifier. In cases in which it is impossible to use the MAC address, then when the user agent is first run, it should generate a random 64 bit number and use this as the identifier. It MUST store this number in some non volatile storage that is stable over reboots and power outages. The user agent SHOULD use the same instance identifier tag even if it is registering different AOR or contacts.

If the identifier is a MAC address, it MUST be formatted as the letters "MAC-" followed by a 12 digit hexadecimal representation of the MAC address. The address can not include ":", whitespace, or other formatting. If the identifier is a random number, it MUST be formatted as the letters "RANID-" followed by a 16 digit hexadecimal representation of the number. Note that the identifiers are case sensitive and all alpha characters are upper case.

The MAC and RANID identify the namespace for the unique identifier. In the future this unique identifier namespace may be extended with other namespaces that use unique identifiers from things like USB, Bluetooth, or Firewire.

These same identifiers may be used in the user portion of request URIs when that is appropriate. A SUBSCRIBE for configuration information is a good example.

5. Discussion

The contact header in a SIP request identifies an address that can be used to reach the device that is sending the request. This address may change each time the device running the user agent gets a new IP address, but it is very reasonable for the display name to give a unique identifier for what this instance of the user agent wishes to be known by. Right now SIP does not give any recommendation on what to place in the field. This document suggests a naming convention for this.

MAC addresses are usually put on the outside of the box for IP phones.
in a form that humans can read and also by a barcode scanner.

6. BNF

The following ABNF follows the rules in RFC-2234 [1] and updates the
BNF in RFC 3261.

contact-params = c-p-q / c-p.expires / c-p-instance
               / contact-extentions
  c-p-instance = "instance" EQUAL uniq-ident
  UHEX = DIGIT / %x41-46 ; uppercase A-F
  MAC = %x4d.41.43 ; MAC in caps
  RANID = %x52.41.4e.44.49.44 ; RANID in caps
  uniq-ident = ( mac-ident / rand-ident )
   mac-ident = MAC "-" 12UHEX
   rand-ident = RANID "-" 16UHEX

7. Example

The following are some valid Contact headers:

Contact: <sip:alice@host22.example.com>;instance=MAC-123456789ABC
Contact: <sip:alice@host22.example.com>;instance=
          RANID-0123456789ABCD

8. Security Consideration

The unique identifier reveals further privacy related information to
other people that see the SIP signalling. Currently user agents put
an IP address or DNS name in the contact header, so the amount of
extra information this reveals is very minimal. The MAC address may
reveal the manufacturer of the user agent.

9. Open Issues

Would this be better in an "Instance-ID" header?

Would this be better in the User-Agent header? Some systems are doing
already doing this.

Is 64 bits the right size for the random identifier?

Is requiring upper case appropriate?

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Normative References


Informative References


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