SIP Forum
User Agent Configuration

One protocol to find them all and on the network configure them.
The Problem

• SIP User Agents (mostly phones) are not plug-and-play – even a minimal SIP configuration usually requires:
  – Domain or server name(s)
  – User identities
  – Options compatible with the service

• Configuration complexity is a significant barrier to adoption
Goals

• Discover where the UA is (IP parameters)
• Discover the domain to ask for configuration
• Locate the UA Configuration Service for the domain
• Request a configuration
  – Service selects/generates configuration based on user or device (service decides)
• Find out when the configuration changes
Non-Goals

• Configuration data format
  – UA Configuration Service provides a configuration in the format required by the UA.

• Multiple sources of configuration
  – UA Configuration Service provides a complete configuration.
UA wakes up

Prior configuration may determine whether or not the UA attempts to use this configuration process, including which steps may be skipped.
Get Local Network Information

DHCP

DHCP Server

DHCP Request

DHCP Response

- IP Address
- Subnet Mask
- Gateway Address
- DNS Server Address
- Domain Name
  - IPv4: DHCP option 15
  - IPv6: DHCPv6 option 21

To get configuration for the local SIP domain, start with the Domain Name
Find Configuration Service URL

Query: NAPTR example.net
Answer: SFUA.CFG "U"
https://cs.example.net/config

Resolve cs.example.net normally per HTTP
Add identifying parameters for the UA
## Identifying HTTP Query Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Meaning</th>
<th>Syntax</th>
</tr>
</thead>
<tbody>
<tr>
<td>sfua-user</td>
<td>The user</td>
<td>RFC 3261 ‘user’</td>
</tr>
<tr>
<td>sfua-id</td>
<td>The User Agent instance (UUID)</td>
<td>URN as defined in RFC 5626 (outbound)</td>
</tr>
<tr>
<td>sfua-vendor</td>
<td>The vendor of the User Agent</td>
<td>DNS domain name</td>
</tr>
<tr>
<td>sfua-model</td>
<td>The model of the User Agent Chosen by the vendor</td>
<td>RFC 3261 ‘token’</td>
</tr>
<tr>
<td>sfua-revision</td>
<td>The version within the model value of the User Agent</td>
<td>RFC 3261 ‘token’</td>
</tr>
<tr>
<td>generic-param</td>
<td>Anything</td>
<td>RFC 3261 ‘token’</td>
</tr>
<tr>
<td>(name must not</td>
<td>start with ‘sfua-’)</td>
<td></td>
</tr>
</tbody>
</table>

UA sends all values it knows; Service ignores any it does not need.
Request SIP UA Configuration

GET https://cs.example.net/config
  ?sfua-vendor=uamaker.example.com
  &sfua-model=NewSIP
  &sfua-revision=1_0
  &sfua-id=urn:uuid:00000000-0000-1000-8000-000A95A0E128

HTTP/1.1 200 OK
Etag: 3783rjmuqaoq911
Link: sip:uacfg.example.net;cfg=72341110000111;rel=monitor
Content-Type: vendor-defined
<configuration-body>
HTTP Flexibility

GET

GET https://cs.example.net/config
?sfua-vendor=uamaker.example.com
&sfua-model=NewSIP
&sfua-revision=1_0
&sfua-id=urn:uuid:00000000-0000-1000-8000-000A95A0E128

redirection

HTTP/1.1 302 Redirect
Location:
https://uacfg.example.net/cfg/sip/000A95A0E128.xml

GET

GET https://uacfg.example.net/
cfg/sip/000A95A0E128.xml

configuration

HTTP/1.1 200 OK
Etag: 3783rjmuqaoq911
Link: <sip:uacfg.example.net;cfg=72340000111> ;rel=monitor
Content-Type: vendor-defined
<configuration-body>
Request Change Notices

draft-roach-http-subscribe

DNS Server

DHCP Server

SUBSCRIBE sip:uacfg.example.net;cfg=72340000111
Event: http-monitor

NOTIFY ...
Content-Type: message/http

HTTP/1.1 200 Ok
Etag: 3783rjmuqaoq911
Link: sip:uacfg.example.net;cfg=72340000111;rel=monitor
Content-Type: vendor-defined
SIP Subscription to HTTP Resource

GET

GET https://uacfg.example.net/cfg/sip/000A95A0E128.xml

SUBSCRIBE

SUBSCRIBE sip:uacfg.example.net;cfg=72340000111
Event: http-monitor

NOTIFY...

HTTP/1.1 200 Ok
Link: sip:uacfg.example.net;cfg=72340000111
;rel=monitor
Content-Type: message/http
Etag: 449282kfmdkdfjixx
Link: sip:uacfg.example.net;cfg=72340000111
;rel=monitor
Content-Type: vendor-defined

<configuration-body>
Status

- The SIP Forum Board of Directors have made the decision to submit the specification as an Internet-Draft (I-D) to the IETF to seek publication as an RFC: draft-lawrence-sipforum-user-agent-config
- The I-D is following the AD-sponsored route and is currently being discussed in the IESG
- Two IETF dependencies are both in the RFC Editor’s queue
- Testable implementations expected at SIPit 26 (May 2010)
Configuring a Non-Local Domain

The SIP Configuration Domain may be provided manually. An alias mechanism is described for a future version of the Recommendation.

- The user will be able to enter a string of decimal digits to identify the domain called a Provider Alias Number (PAN).
- The PAN is resolved to a DNS name through a NAPTR lookup.
- This feature depends on the establishment of a registry, which is the subject of new SIP Forum work.
Status of alias work

• A specification has been submitted to the IETF DISPATCH Working Group: draft-lawrence-dispatch-sipforum-provider-alias
• Separate SIP Forum committee being established to create a Provider registry