

Redirection Capabilities in SIP

[draft-bharatia-sipping-redirect-00.txt](#)

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General Motivation

- ↗ **SIP should provide capabilities to build redirection services better than PSTN/ISDN**
- ↗ **Should support generic redirection-based services**
- ↗ **Interworking between SIP redirection capabilities and existing services should be simple and consistent**
 - Examples of such capabilities currently offered by PSTN/ISDN
 - Immediate notification of caller with redirected-to information
 - Notification of the original called party with redirected-to information when redirection invoked by network on behalf of called party
 - Presentation of the redirecting entity information to the redirected-to entity
 - Presentation of reason(s) for redirection to calling and redirected-to entities
 - Limit the number of diversions to prevent loops
- ↗ **To achieve the above, there is a requirement to transfer additional information as part of SIP messages in a standardised way**

Redirection Information Requirements

Information Element	Definition	Possible SIP representation	Limitations
Calling Entity Address	The entity who placed the call	<u>From: header</u> .	A PSTN system may be able to interpret only an E.164 identity
Redirecting Address(es)	The address from which the call is redirected	<u>To: header</u> <i>for first redirection</i> . <u>None for subsequent redirections</u> .	same as above No information about subsequent redirections
Redirected-to Address(es)	The address towards which the call has been forwarded or must be forwarded	Fwd: <u>Request-URI</u> . Bwd: <u>??</u>	No information provided to Calling Party until call terminates
Redirecting reason(s)	The reason for (each) redirection	None	No reason information
Redirection counter	A counter, which is incremented each time a redirection occurs during session set-up	None Max-Forwards header has similar usage but not specific to redirection.	Possible loops between PSTN and SIP network

Existing Work

Two approaches to carry these information between SIP entities:

- Service-specific Request-URI [RFC 3087]
 - Advantages:
 - ✓ client needs no special capability
 - ✓ extensible
 - Disadvantages:
 - ✓ privacy requirements cannot be met
 - ✓ not easy to maintain redirection history
 - ✓ Configuration complexity at client
 - ✓ Information not visible to intermediate entities (proxies, gateways)
- Generic redirection information in SIP headers
 - Advantages:
 - ✓ information visible to all SIP entities
 - ✓ privacy requirements can be met
 - ✓ extensible
 - Disadvantages:
 - ✓ Client/proxies needs new capability (e.g., support a new or existing header) to access services based on this information.

Solution using existing or proposed SIP headers

Remote-Party-Id (RPI)

- Advantages:
 - ✓ Can leverage the existing privacy framework (draft-ietf-sip-privacy-02.txt)
 - ✓ Stack multiple headers for multiple redirections
 - ✓ extensible

Cookie

- Advantages:
 - ✓ Flexible and extensible
- Disadvantages:
 - ✓ Generally used for keeping persistent state information across sessions. May not be a match here.
 - ✓ A new header just like Diversion. Also does not address privacy issues

State

- Advantages:
 - ✓ Existing SIP header used for carrying state information between the Proxies and the endpoints
- Disadvantages:
 - ✓ Needs behavior change in Proxies and UA's in treating this header.
 - ✓ Does not address privacy issues

Our recommendation is to use RPI for carrying the redirection information elements as it represents well the redirection endpoints & satisfies all the requirements discussed earlier