SIP: Status and Directions

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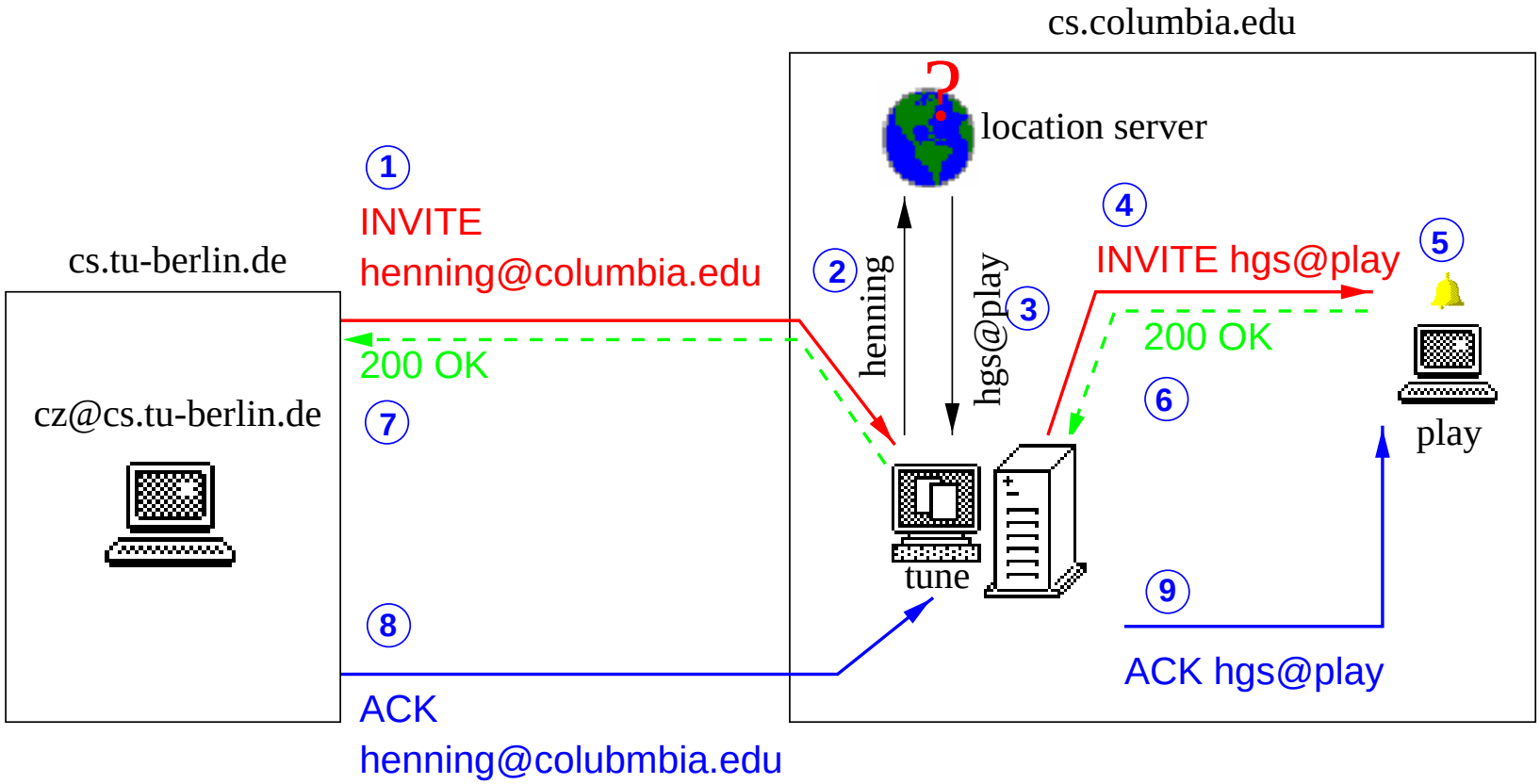
Overview

- SIP overview/review
- SIP standardization status
- SIP bake-off

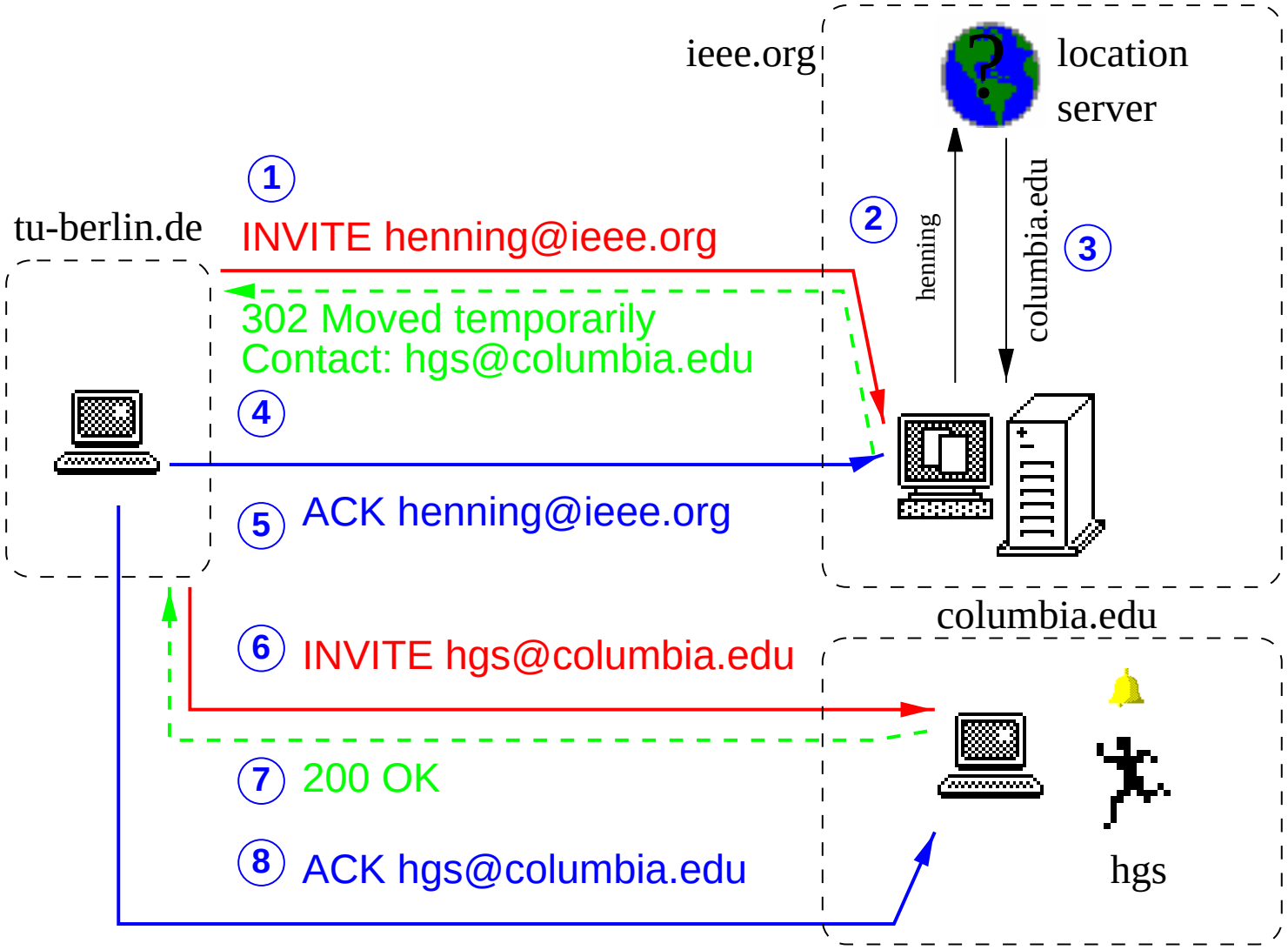
SIP: Basic Operation

1. use directory service (e.g., LDAP) to map name to *user@domain*
2. locate SIP servers using DNS lookup
3. called server may map name to *user@host*
4. callee accepts, rejects, forward (→ new address)
5. if new address, go to step 2
6. if accept, caller confirms
7. . . . conversation . . .
8. caller or callee sends BYE

SIP Operation in Proxy Mode



SIP Operation in Redirect Mode



SIP Advanced Features

- operation over UDP or TCP
- multicast invitations ➠ basic ACD
- “interactive web response” (IWR)
- UA ↔ proxy = proxy/redirect ↔ proxy/redirect
- stateless proxies: self-routing responses
- forking proxies: call several in sequence and/or parallel
- security: basic (password), digest (challenge/response), PGP

SIP Standardization Status

- Feb. 2, 1999: IETF Proposed Standard
- March 17, 1999: IETF RFC 2543
- eligible for Draft Standard: 6 months, 2 implementations $\surd$

SIP Work Items

- sip-cgi
- call processing language
- reliable provisional (1xx) responses
- caller preferences
- third-party call control
- SIP for subscribe/notify
- SIP–ISUP interworking
- SIP–H.323 interworking
- billing
- reverse channel setup for call progress tones
- pre-ringing resource reservation

SIP Bake-Off

- 35 implementors met at Columbia University, April 8th/9th, 1999
- hardware, PSTN gateways, proxy/redirect servers, clients, test instrument, . . .

SIP Bake-Off Participants

3Com	Ericsson (2)
Alcatel	Helsinki Univ. of Technology
Cisco	Hewlett-Packard (2)
British Telecom	Lucent
Columbia University	MCI Worldcom
Dialogic	Mediatrix
dynamicsoft	Nortel
Ellemtel	Pingtel

SIP Bake-Off Goals

- basic call set-up
- registration, user location
- proxies and redirect server operation
- advanced features: security
- identify implementation bugs and robustness issues
- identify spec ambiguities

SIP Bake-Off Results

- almost all implementations could establish basic calls – either on arrival or after minor on-site fixes
- tested redirection, proxying, security, registration, . . .
- generated interoperability test cases and tools
- will fold clarifications into Draft revision of RFC and web page at http://www.cs.columbia.edu/~hgs/sip
- second bake-off tentatively in August, with advanced features (DNS SRV, forking, call routing, . . .)
- install public testing mechanisms (Pulver OpenTestNet, www.sip-happens.com)