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VoIP client & demo environment

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Agenda

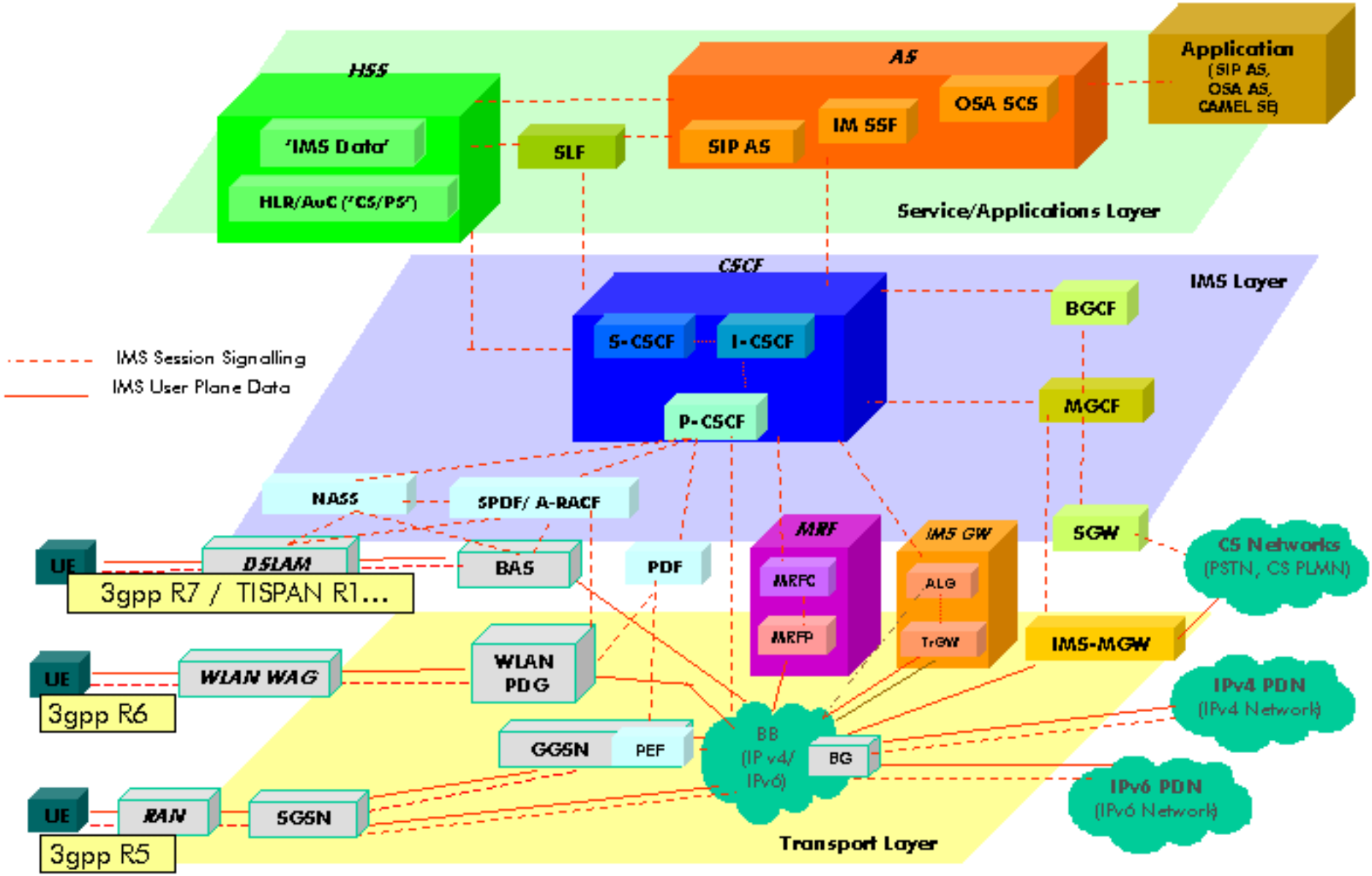
- Context
- IMS
- VoIP
- Server side
- Authentication flows
- Current status

IP Multimedia Subscription - IMS

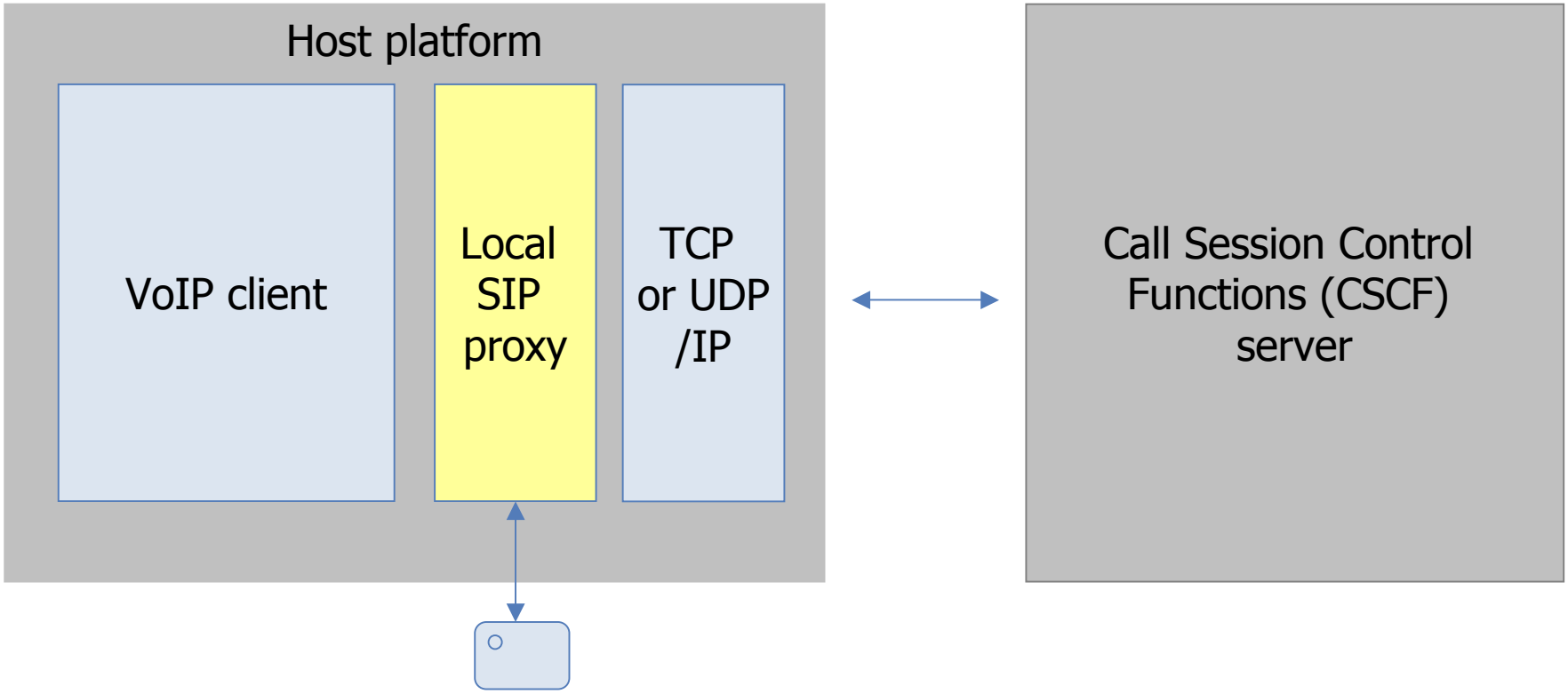
VoIP but not only…

- Many applications (services)
  - Chatting applications (messaging)
  - PoC
  - Presence
  - Group management
  - Conferencing
- IP based
  - Any IP connection
- IP enabled devices
- Peer-to-peer & peer-to-content connection

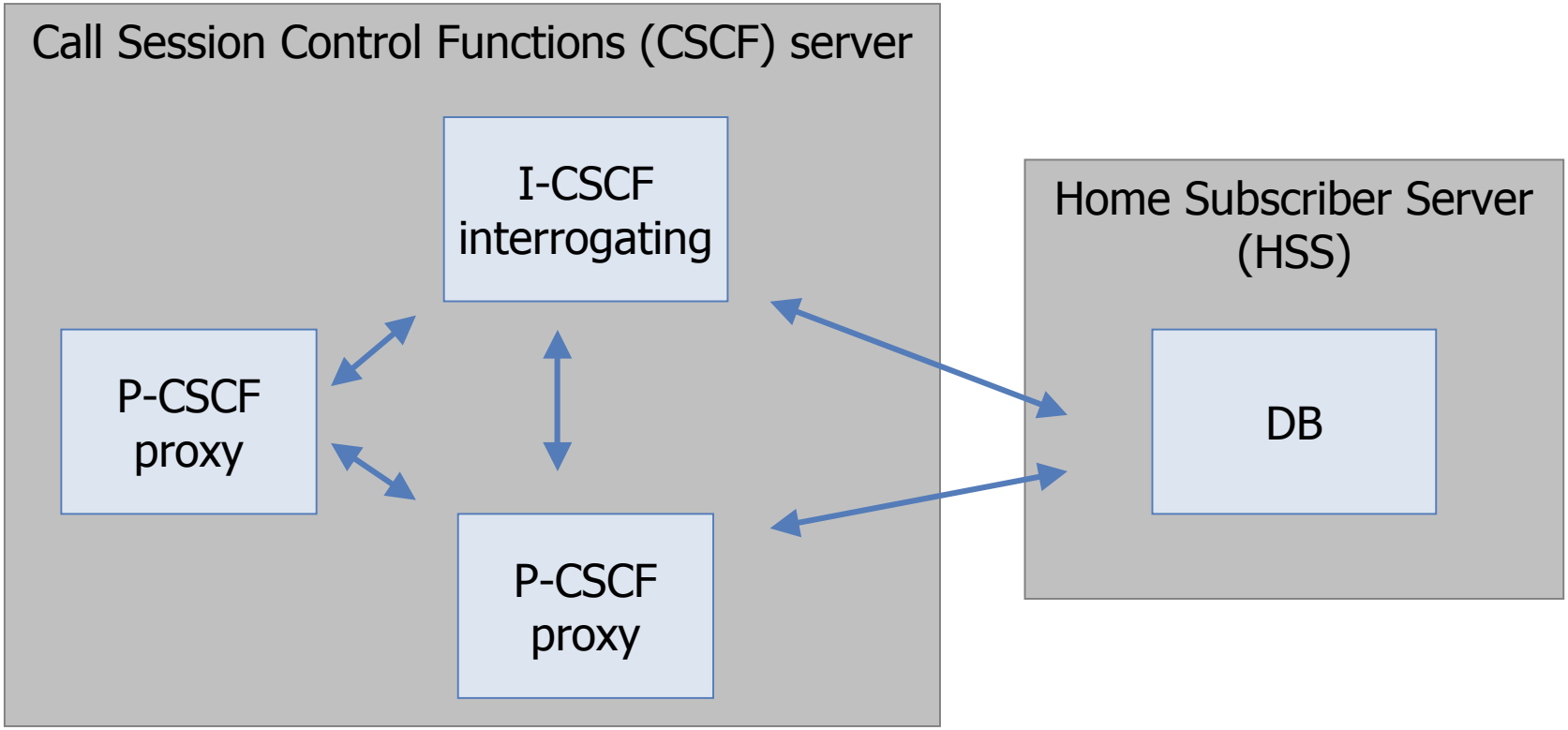
« IMS is a global, access-independent and standard-based connectivity and Service Control architecture that enables various type of multimedia services to end-users using common Internet based protocols »


HSS
'IMS Data'
HLR/AuC ('CS/PS')
SLF
AS
SIP AS
IM SSF
OSA SCS
Application
(SIP AS,
OSA AS,
CAMEL SE)
Service/Applications Layer
IMS Layer
CSCF
S-CSCF
I-CSCF
P-CSCF
BGCF
MGCF
SGW
IMS Session Signalling
IMS User Plane Data
NASS
SPDF/ A-RACF
PDF
MRF
MRFC
MRFP
IMS GW
ALG
TrGW
IMS-MGW
CS Networks
(PSTN, CS PLMN)
UE
DSLAM
BAS
3gpp R7 / TISPAN R1...
UE
WLAN WAG
WLAN PDG
3gpp R6
GGSN
PEF
BB
(IP v4/
IPv6)
BG
IPv4 PDN
(IPv4 Network)
IPv6 PDN
(IPv6 Network)
UE
RAN
SGSN
3gpp R5
Transport Layer

Voice over IP (VoIP)



Server side (1/2)

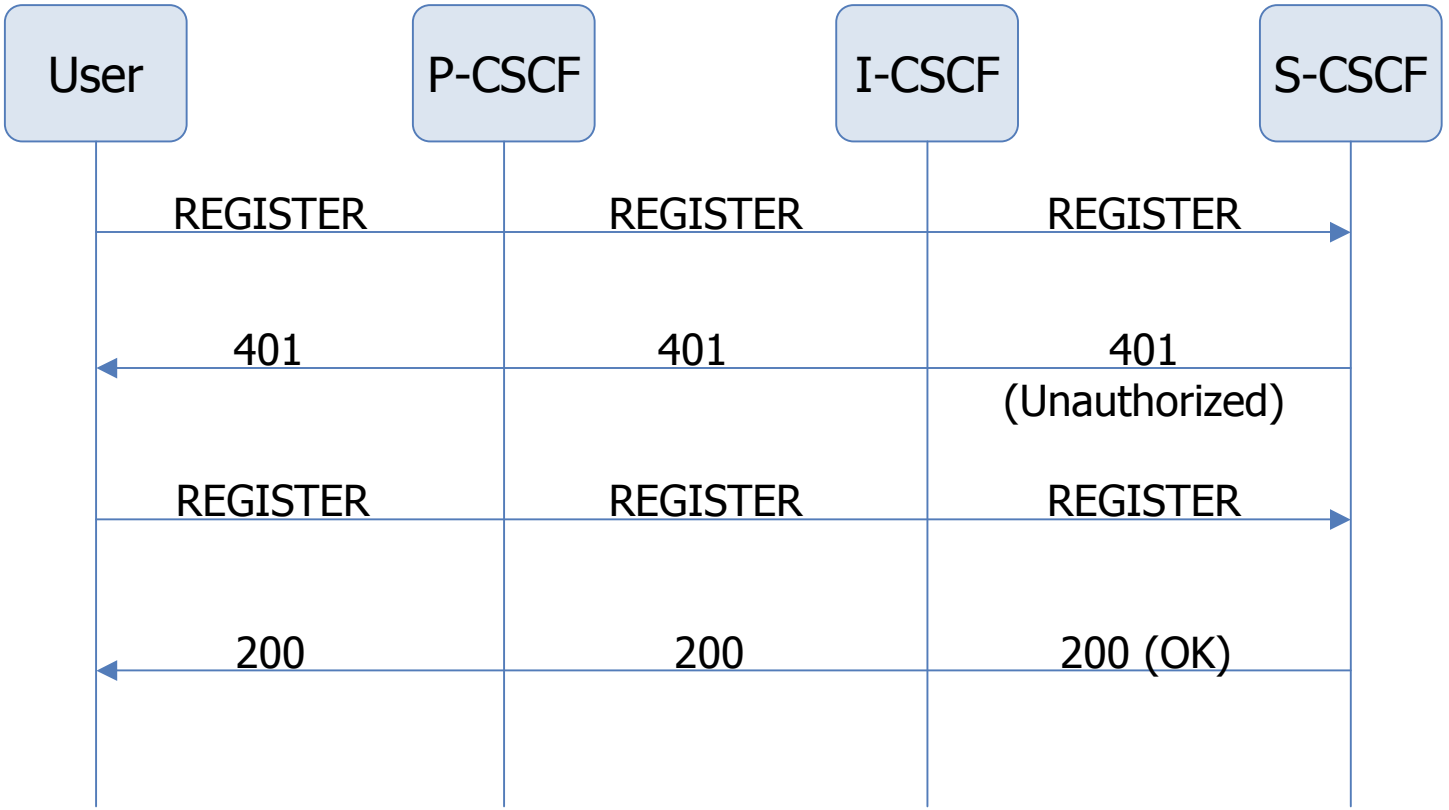


Server side (2/2)

Processing split between three components

- Proxy (P-CSCF)
  - Compression
  - IPsec
  - Emergency calls
  - Police Decision Function (PDF)
- Interrogating (I-CSCF)
  - Next hop from HSS: either S-CSCF or Application server (AS)
  - Assign S-CSCF
  - Route request to S-CSCF or AS
  - Provides Topology Hiding Inter-Network (THIG)
- Server (S-CSCF)
  - Registration
  - Routing decision
  - Maintain session states
  - Store service profiles

Session Initiation Protocol (SIP)
Authentication flows during registration



Current status

- Local SIP proxy
  - Used with various VoIP clients
  - AKAv1-MD5 (= 3GPP AKA) supported thanks to the ISIM smart card
  - No NAT
  - IPsec not supported so far
- CSCF server
  - Run in a VMWare
  - Able to make a call between two VoIP clients/PC
  - No GSM or PSTN gateways

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Questions/Answers ?

Thank you !