ENUM@CNNIC in China

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Background

- ENUM perfectly matches phone numbers to internet URIs, it's a new naming and addressing technology based on DNS

- ENUM Trial of CNNIC is authorized by Ministry of Information Industry of China

Milestones of ENUM at CNNIC

- 2001/07, Project plan and objective defined, Trial is starting up.
- 2001/10, a very simple prototype ENUM testbed was setup
- 2001/12, Proposal on National ENUM trial was brought to the MII
- 2002/02, MII decided to organize ENUM trial plan
- 2002/06, Proposal to apply the 6.8.e164.arpa for comparison with 6.8.e164.cn
- 2002/09, 6.8.e164.arpa was delegated by RIPE-NCC and ITU-TSB and servers are operated by the CNNIC
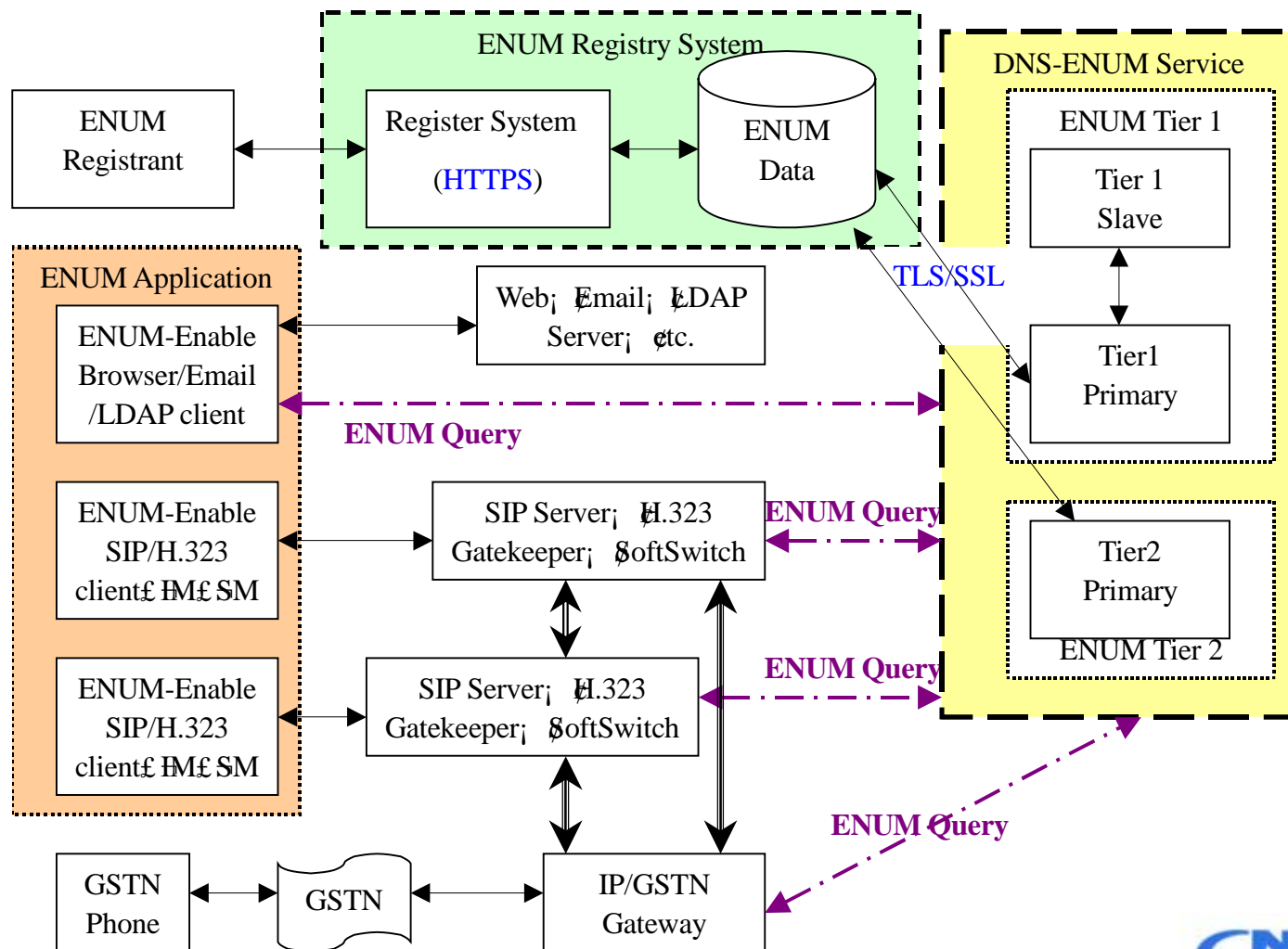
Milestones of ENUM at CNNIC

- 2002/10---CNNIC was asked by the RIPE-NCC to run one of the secondary servers for e164.arpa
- 2003/07---Begin to update the CNNIC ENUM trial Test-bed (Registration and Resolution)
- 2003/12---CNNIC published the Registry web-side and public ENUM trial service to Internet users
- 2004/2---At IETF WG meeting, Report ENUM status at CNNIC
- 2004/7---Cooperate with JPRS, KRNIC, SGNIC, TWNIC and set up APEET
- 2004/12---Update the trial system

ENUM Trial at CNNIC

- ENUM Trial Framework
- ENUM Resolution/Registration Platform
- ENUM Platform Function
- ENUM Client for Browser and Email
- What's going on

ENUM Trial Framework

ENUM Registry System

Register System (HTTPS)

ENUM Data

DNS-ENUM Service

ENUM Registrant

ENUM Tier 1

Tier 1 Slave

TLS/SSL

ENUM Application

ENUM-Enable Browser/Email /LDAP client

Web¡ ¢Email¡ ¢LDAP Server¡ ¢etc.

Tier1 Primary

ENUM Query

ENUM-Enable SIP/H.323 client£ ¬IM£ ¬SM

SIP Server¡ ¢H.323 Gatekeeper¡ ¢SoftSwitch

ENUM Query

Tier2 Primary

ENUM Tier 2

ENUM-Enable SIP/H.323 client£ ¬IM£ ¬SM

SIP Server¡ ¢H.323 Gatekeeper¡ ¢SoftSwitch

ENUM Query

GSTN Phone

GSTN

IP/GSTN Gateway

ENUM Query

CNNIC
中国互联网络信息中心
CHINA INTERNET NETWORK INFORMATION CENTER

ENUM Resolution Platform

- **Tier 0---currenty e164.arpa**
  - CNNIC is running one of the six slave server of "e164.arpa"
    - Operated as the same condition as ccTLD name servers (monitoring, logging, backup...)
- **Tier 1---6.8.e164.arpa**
  - CNNIC is running two servers for this domain, one primary and one secondary
    - arpa-ns0.enum.net.cn
    - arpa-ns1.enum.net.cn
- **Tier 2**
  - Store all the NAPTR records

ENUM Registration Platform

- **http://WWW.ENUM.CN**
  - provides registration, modification, deletion, query, etc.
  - User check-up function
    - System manager checks registration information
    - Confirmed through E-mail
  - Information updated to "6.8.e164.arpa" zone in every 5 seconds
  - ENUM enabled SIP server for SIP registration

ENUM Platform Function

- **Phone call**
  - IP <-> IP, based on SIP
  - IP -> PSTN, through GW
- **IE toolbar**

| × | 🏠CNNIC-ENUM | | ▼ | 🔍Search ▾ | 🕸Help | ✏中文 | 🗑Uninstall |

- **Voicemail**
  - Send voice mail to user's Email when user is offline
  - Use SER module *vm.so*

ENUM Client for Browser

- **IE client**
  - Used to reach http link by ENUM number
  - Capture the local DNS Server's IP address, then ask the DNS Server to query the domain name
  - The size of this client software is only 558k
  - Support IE version 4.0 and above
- **Other browsers**
  - Hope to support in the near future

ENUM Client for Email

- ## Outlook client
  - ### Used to send E-mail by ENUM number
  - ### Capture the local DNS Server's IP address, then ask the DNS Server to query the domain name
  - ### The size of this client software is only 569k
  - ### Support office 2000 Outlook and newer version

What's going on

- Privacy and safety enhanced for special users and environments
    - ENUM users set different preference to URIs for query
    - Query client creates query message with key & validation information
    - Server validate user name, password, and key
    - Result will be got by synthesizing the current situation and configuration
- Making proposal of operation and administration of ENUM in China

Other Activities

- **ITU-T**
  - 2004/05, submitted TLD evaluation report, discussed interim procedure, etc.
  - 2005/02, Infrastructure-ENUM as potential solution for NP Database
- **IETF ENUM WG**
- **APEET**
  - Early 2004, proposed originating ENUM Engineering Team
  - 2004/07, formation of APEET
  - 2005/02, build the cooperated testing platform for APEET live show in Apricot2005

Next Steps

- Commercial Trial
  - Many Carriers show big interests on ENUM/SIP trial system
  - Plan to begin the commercial trial system in special scope, cooperated with carriers
- Series of standards will be considered to be submitted, based on the commercial trial experiences
  - Overall technical specification for ENUM
  - And others, e.g. registration, monitoring, operation, accounting and etc.
  - Will be supervised by China government(MII)

Thanks

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