ATM Name Service (ANS)

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What is a name system?

ATM Name system

ATM address to name translation
ATM Name System

- Directory services
- Similar to Domain Name System (DNS)
- Provides numerical address and other info for a name
  - DNS Name = Liberia.cis.ohio-state.edu
  - IP Address = 164.107.134.5
- Domain name to address translation and vice versa
- DNS specified in RFC 1034 and 1035
What is the IP address of snoopy.cis.ohio-state.edu?

Name Resolution

- Local Name Server
  - Local Cache
  - Ohio-State
    - Edu
      - .
        - .
          - snoopy.cis.ohio-state.edu

The Ohio State University

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ANS Server

- Similar to DNS Server
- Provides domain names to ATM Address translation
- ATM Address types:
  - AESA = ATM End System Address = NSAP format
  - ATM address
  - E164 = E.164 format
AESA Translation

- Domain name = Selector.End system identifier.Domain specific part.Data country code.Authority and format id.ATM address type.ATM Address.International
- Digits of High Order-Domain Specific Part (HO-DSP) field are reversed and separated by “.”
- ATM Address: 3924-6F00-0E7C-9C03-1200-0100-0100-0012-3456-7800
- Domain Name:
  00.000012345678.1.0.0.0.1.0.0.0.2.1.3.0.C.9.C.7.E.0.0.0.24
  6F.39.AESA.ATMA. INT
E.164 Translation

- National number.country code.E164.ATMA.INT
- Digits of national number are reversed and separated by .
- Phone Number: +358.400.1234567
- ATM Address: 3584001234567
- Domain name: 7.6.7.4.3.2.1.0.0.4.358.E164.ATMA.INT
ANS: Other Details

- User interfaces may allow ATM address to be written in natural order with or without dots.
- ANS runs directly on ATM.
  DNS runs on TCP/IP or UDP/IP.
- ANS server to ATM clients use VC.
- ANS servers use TCP (for reliability) to communicate among themselves in Phase 1.
- Clients get ANS server address via ILMI or from a well known address.
- The well-known address is:
  02C5 0079 0000 0000 0000 0000 0000.00A03E000002.00
Why DNS?

- DNS is widely implemented, well understood, works.
- Domain registration procedures in most countries
- Future DNS extensions on dynamic updates and security can be reused.
- Allows dual hosts to choose between IP and native ATM.
ANS: Phase 2 Plans

- Security extensions
- Dynamic update capability
- Prompt notification of zone changes
- Incremental zone transfer capability
ATM Name system is modeled after domain name system
ATM addresses can be translated to domain names
References: Directory Services