ENUM for Inter-Enterprise Rich Media Services

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Issues in Interenterprise Rich Media

- Numbering plan
- Call routing

Numbering Plan Problem Statement

- Desirable characteristics
  - Enable an inter-enterprise IP path for rich media communications
  - Maintain backward compatibility to non-IP aware infrastructure
  - Maintain backward compatibility with endpoints that can only dial digits
  - Consistent dialing rules exposed to the end user regardless of session path
- Current barriers
  - Telephony numbering plans are rooted in the traditional PSTN and associated regulations
  - Inter-organization coordination and control is difficult
    - E.164 numbers regulated, ITU-T, FCC, etc. (NANC)
    - IP addresses unregulated, IANA, RIRs, LIRs, etc.
  - The currently agreed-on Internet-based root for E.164 numbering is e164.arpa and rollout of e164.arpa has been slow.

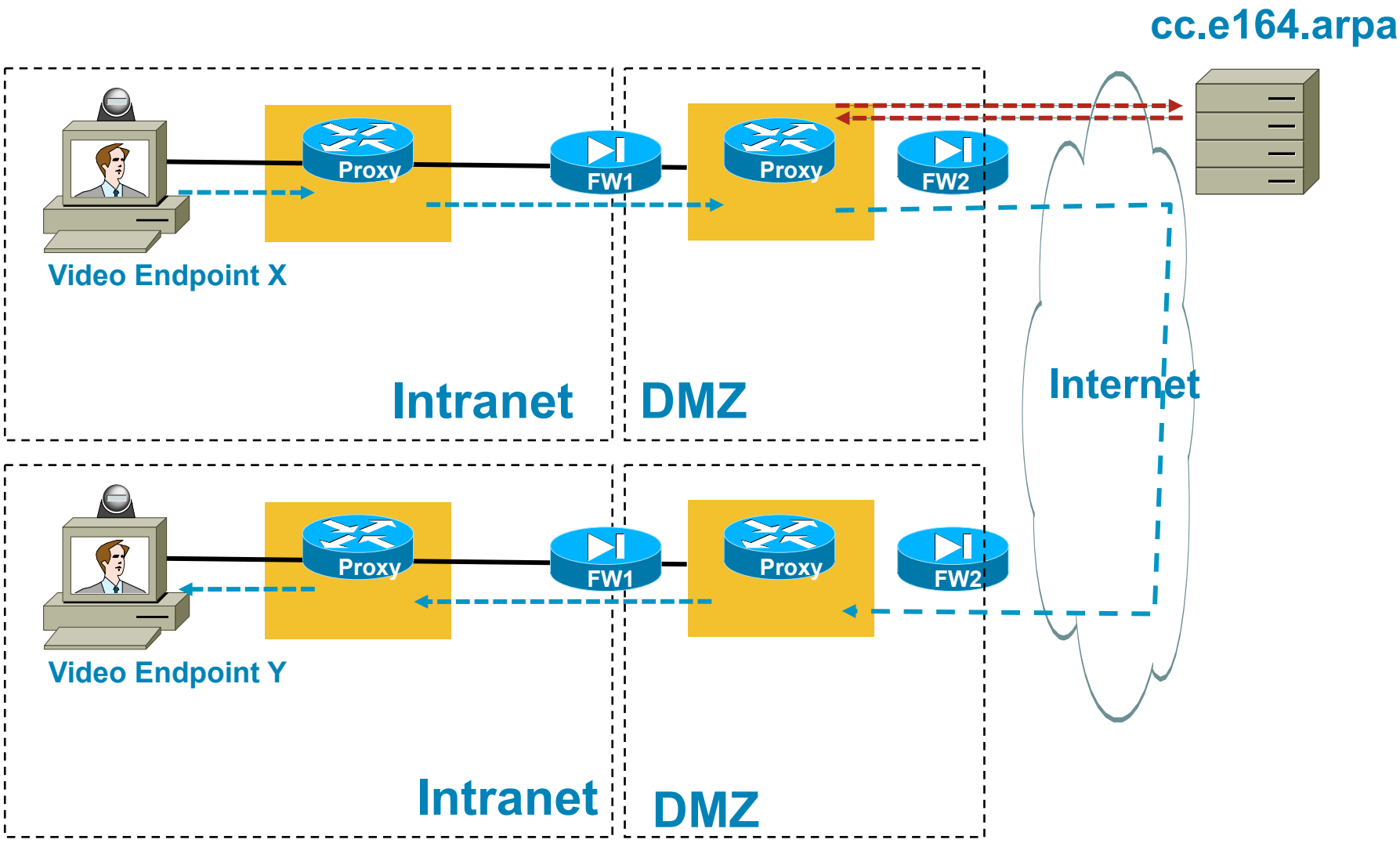
Numbering plan: Number assignment strategy

- Private Numbering Plans
  - Cheap
  - Enterprise owns its own fate
  - Introduces an overlap problem between Enterprises
- E.164 Numbers
  - No overlap between enterprises
  - Difficulties with ownership and usage of phone numbers.

Call Routing – Enterprise Perspective

- E.164 numbers are recommended to avoid overlap in B2B scenarios
- E.164 Numbers traditionally tied to voice calls
- Video/Rich Media calls might utilize a different path
  - Calls exit the enterprise differently based on expected media
  - This can force host routes in the enterprise call routing table
  - There is currently no routing protocol for E.164 addresses between enterprise nodes.

Typical Global Dialing Scenario



ENUM Considerations - Pro

- Supports dial by number only endpoints
  - Consistent with current dial plans
  - Consistent numbering and dialing rules between voice and rich media
- Uses DNS which is widely deployed and supported
  - Including in BIND
- Can be paired with an border proxy/SBC
  - Useful for firewall/NAT traversal
- Ease transition to URI-based calling

ENUM Considerations - Cons

- Global database is largely unpopulated.
- CC1 not even delegated
- Possible spotty support by call control systems/endpoints because of lack of deployment

Summary and Conclusions

- Internet based solutions have been poorly adopted by enterprises
- Even in academia, no single approach is universally adopted leading to inconsistent usability.
- A consistent numbering system has to exist; otherwise, users get confused
- Utilizing the existing telephony numbering system seems to be the most likely path to wide, successful adoption
- Other systems likely to arise, e.g., Global Dialing Scheme: http://commons.internet2.edu/gds.html