EPP Extensibility and Extension Analysis Update

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IETF-123

Background

- Google Doc
  - https://docs.google.com/document/d/1WR00oB43XZCDqD0zvRvRajuWAq_9wQ3c0RrFKlGC3So
- Goal
  - Provide recommendations for the RESTful Provisioning Protocol (RPP) and enhancements to the Extensible Provisioning Protocol (EPP) based on the analysis of existing EPP extensions
- Tiger Team
  - Jim Gould – Verisign
  - Jody Kolker – GoDaddy
  - Pawel Kowalik – DENIC
  - Eric Skoglund – Internet Stiftelsen
  - Maarten Wullink – SIDN

Analysis Update

- Analyzed 65 extensions
- Extensibility Mix
  - Core Extensibility
    - Transport Mapping – 2 (3.3%)
    - Protocol Extension – 2 (3.1%)
    - **Object Extension – 22 (33.9%) and 15 (23.1%) without Function Extension**
    - **Command-Response Extension – 39 (60%)**
    - Authorization Information Extension – 0 (0%)
  - Special Extensibility
    - Command Type Extension – 4 (6.2%)
    - Function Extension – 7 (11.5%)
    - Poll Message Extension – 7 (11.5%)
    - Key Value Pair Extension – 1 (1.6%)
    - Operational Practice – 2 (3.1%)
    - Object Property Extension – 7 (10.8%)
    - Enumeration Value Space Extension – 3 (4.6%)

EPP Recommendations (Preliminary)

- Enhance RGP Extension with single step Restore Command and optional “expiry” attribute to the RGP statuses
  - .SE EPP Extensions deactivation feature could be merged in
- Standardize ConsoliDate (Sync) Extension
- Standardize and consolidate IDN extensions, which include:
  - IDN Language Tag
  - Related Domain
  - Strict Bundling
  - IDN Mapping and IDN Mapping – Identity Digital
  - IDN Table Mapping

EPP Recommendations (Preliminary)

- Standardize and consolidate the Balance extensions, which include:
  - Low Balance
  - Balance
  - FRED Credit Info
  - Finance
- Transition proprietary to standard extensions
  - .SE EPP Extensions & Remove of Unlinked Contacts – SIDN to Change Poll
  - Domain Charge to Registry Fee
  - Reseller – SIDN to Organization Mapping and Organization Extension
  - Cancel Delete – SIDN to RGP Extension

RPP Recommendations (Preliminary)

- Recommendations broken into 4 categories:
  - RPP Adopt EPP Extensibility Recommendations
  - RPP Extensibility Recommendations
  - RPP Object Specific Recommendations
  - RPP Adopt EPP Extensions Recommendations

RPP Adopt EPP Extensibility Recommendations

- **Support**
  - Object Extension (33.9% of EPP extensions)
  - Command-Response Extension (60% of EPP extensions)
  - Command Type Extension – Explicitly (6.2% of EPP extensions)
  - Function Extension – Explicitly (11.5% of EPP extensions)
  - Operational Practice – Explicitly (3.1% of EPP extensions, but important)
  - Object Property Extension (10.8% of EPP extensions)
  - Enumeration Value Space Extension (4.6% of EPP extension, but important)
- **Not Support**
  - Authorization Information Extension (0% of EPP extensions)
  - Key Value Pair Extension (1.6% of EPP extensions)
- **Unknown**
  - Transport Mapping (3.3% of EPP extensions)

RPP Extensibility Recommendations

- The RPP high-level extensibility recommendations include:
  - Process Information
  - Process Parameters
  - Status Information
  - Error Handling
  - Alternative Signed Data Representation
  - New Object Types
  - Adding Properties
  - New Processes
  - Read-only Resources
  - Alternative Resource Addressability
  - Object Relationship
  - Related Objects
  - Transport Mechanism

RPP Object Specific Recommendations

- The RPP object specific recommendations include:
  - Domain Name
    - Lifecyle Management
    - Transfer Authorization
    - Transfer Data
    - IDN Management
    - Resource Record Provisioning
    - Nameserver Representation
    - Contact Types
  - Contact
    - Custom Properties
  - Hosts
    - None not related to Domain Names

RPP Adopt EPP Extensions Recommendations

- Recommendation types (mutually exclusive)
  - **Embed** - Embed support directly into core RPP
  - **Extension** - Define a standard RPP extension that supports the features of the EPP extension
  - **Design** - Verify that the RPP design supports the features of the EPP extension
  - **Not Applicable** - The extension is not applicable to RPP and does not need to be considered for support.
- Additive recommendation
  - **Enhance** – Enhance the functionality in the EPP extension with the Embed or Extension recommendations

RPP Adopt EPP Extensions Recommendations Cont.

- Embed
  - RGP Extension with Enhance (Single Step Restore and Status Expiry)
  - DNSSEC Extension
  - RGP Poll (if Two Step Restore remains)
  - Login Security Extension
  - Unhandled Namespaces
  - Secure Authorization Information for Transfer
  - Use of Internationalized Email Addresses
  - TTL Extension
  - Organization Mapping and Extension

RPP Adopt EPP Extensions Recommendations Cont.

- Extension
  - ConsoliDate (Sync) Extension – Based on standardization in EPP
  - IDN Extensions – Based on standardization in EPP
    - Includes IDN Language Tag, Related Domain, Strict Bundling, IDN Mapping and IDN Mapping – Identity Digital, and IDN Table Mapping
  - Balance Extension – Based on standardization in EPP
    - Includes Low Balance, FRED Credit Info, and Finance
  - Launch Phase Extension
  - Allocation Token Extension
  - Change Poll Extension
  - Registry Fee Extension
  - Registry Maintenance
  - LVContact Extension and LVDomain Extension

RPP Adopt EPP Extensions Recommendations Cont.

- Design
  - Includes 33 EPP extensions
  - If the recommended RPP extensibility recommendations are met, the EPP extension design recommendations should also be met
  - Tiger Team can perform an analysis of whether the design recommendations are met once the RPP design is complete

Next steps

- Finalize the recommendations
- Post final recommendations to the mailing lists (RPP and REGEXT) before IETF-124
- Present the final recommendations at IETF-124
- Perform analysis for the RPP embed, extension, and design recommendations after the RPP design is complete