

EPP Extensibility and Extension Analysis Recommendations

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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 – The Swedish Internet Foundation
 - Maarten Wullink – SIDN

Analysis Statistics

- Analyzed 67 extensions
- Extensibility Mix
 - Core Extensibility
 - Transport Mapping – 2 (3%)
 - Protocol Extension – 3 (4.5%)
 - **Object Extension – 21 (31.4%) and 13 (19.4%) without Function Extension**
 - **Command-Response Extension – 41 (61.2%)**
 - Authorization Information Extension – 0 (0%)
 - Special Extensibility
 - Command Type Extension – 4 (6%)
 - Function Extension – 8 (11.9%)
 - Poll Message Extension – 7 (10.4%)
 - Key Value Pair Extension – 1 (1.5%)
 - Operational Practice – 2 (3%)
 - Object Property Extension – 7 (10.4%)
 - Enumeration Value Space Extension – 3 (4.5%)

RPP Recommendations

- 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)
- Transport Mapping (3.3% of EPP extensions)

RPP Extensibility Recommendations

- The RPP high-level extensibility recommendations include:
 1. Process Information
 2. Process Parameters
 3. Status Information
 4. Error Handling
 5. Alternative Signed Data Representation
 6. New Object Types
 7. Adding Properties
 8. New Command Types
 9. Read-only Resources
 10. Read-only Functions
 11. Alternative Resource Addressability
 12. Object Relationship
 13. Related Objects

RPP Object Specific Recommendations

- The RPP object specific recommendations include:
 1. Lifecycle Management
 2. Transfer Authorization
 3. Transfer Data
 4. IDN Management
 5. Resource Record Provisioning
 6. Nameserver Representation
 7. Contact Types

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
 1. RGP Extension with Enhance (Single Step Restore and Status Expiry)
 2. DNSSEC Extension
 3. RGP Poll (if Two Step Restore remains)
 4. Login Security Extension
 5. Unhandled Namespaces
 6. Secure Authorization Information for Transfer
 7. TTL Extension
 8. Use of Internationalized Email Addresses
 9. Organization Mapping and Extension

RPP Adopt EPP Extensions Recommendations Cont.

- Extension
 - Launch Phase Extension
 - Allocation Token Extension
 - Registry Fee Extension
 - Change Poll Extension
 - Registry Maintenance
 - Balance Extensions – Based on standardization in EPP
 - Includes draft-gould-regext-balance, Low Balance, Balance, FRED Credit Info, and Finance
 - IDN Extensions – Based on standardization in EPP
 - Includes IDN Language Tag, Related Domain, Strict Bundling, IDN Mapping and IDN Mapping – Identity Digital, IDN Table Mapping, Domain Variants

RPP Adopt EPP Extensions Recommendations Cont.

- Design
 - Includes 35 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

- Incorporate recommendations into RPP requirements
- Work in REGEXT on the EPP recommendations
- Perform analysis for the RPP embed, extension, and design recommendations after the RPP design is complete