

Internet Engineering Task Force
Internet-Draft
Intended status: Experimental
Expires: November 30, 2017

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united-domains
October 27, 2017

**Registry Maintenance Notifications through
Extensible Provisioning Protocol (EPP) poll response with JSON payload
draft-sattler-epp-poll-maintenance-response-00**

Abstract

This document describes the JSON payload of an Extensible Provisioning Protocol (EPP) poll response to provide Domain Name Registry Maintenance Notifications to Domain Name Registrars.

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[1. Introduction](#)

This document describes the JSON [[RFC7159](#)] payload of an Extensible Provisioning Protocol (EPP) [[RFC5730](#)] poll response to provide Domain Name Registry Maintenance Notifications to Domain Name Registrars.

[1.1. Terminology and Definitions](#)

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [[RFC2119](#)] when specified in their uppercase forms.

The following list describes terminology and definitions used throughout this document:

EPP:	Extensible Provisioning Protocol
DNRY:	Domain Name Registry
DNRR:	Domain Name Registrar
JSON:	JavaScript Object Notation
NTFY:	Domain Name Registry Maintenance Notification

2. JSON payload

This is the JSON schema.

3. Common Data Types

JSON [[RFC7159](#)] defines the data types of a number, character string, boolean, array, object, and null. This section describes the semantics and/or syntax reference for common, JSON character strings used in this document.

notifications:	contains a single NTFY
id:	unique id for each NTFY, SHOULD NOT be changed if it gets postponed
systems:	contains name, host and impact
name:	name of affected system
host:	affected maintained system (host or ip)
impact:	impact level per affected sytem; values are either 'partial' or 'blackout'
environment:	environment of affected maintained system
start:	start of maintenance according ISO 8601 [RFC3339] YYYY-MM-DDThh:mm:ssTZD
end:	end of maintenance according ISO 8601 [RFC3339] YYYY-MM-DDThh:mm:ssTZD
reason:	free text why it is necessary, MAY be empty
remark:	URI to detailed maintenance description, MAY be empty
tlds:	affected top-level domains punycode encoded according [RFC3492]
intervention:	contains connection and implementation
connection:	true or false - indicates if DNRR needs to do something that is connection related
implementation:	true or false - indicates if DNRR needs to do something that is implementation related

4. EPP poll response

According to EPP [[RFC5730](#)], the EPP poll response allows mixed content and also be returned without object information.

Example <poll> response with mixed message content and without object-specific information:

```
S:<?xml version="1.0" encoding="UTF-8" standalone="no"?>
S:<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
S:  <response>
S:    <result code="1301">
S:      <msg>Command completed successfully; ack to dequeue</msg>
S:    </result>
S:    <msgQ count="4" id="12346">
S:      <qDate>2017-02-08T22:10:00.0Z</qDate>
S:      <msg lang="en">
S:        {"maintenance":[
S:          {"notification":{
S:            "system":["epp.registry.example"],
S:            "environment":"production",
S:            "start":"2017-04-30T06:00:00+00:00",
S:            "reason":"planned maintenance",
S:            "impact":["blackout"],
S:            "remark":
S:              "https://portal.registry.example/maintenance-desc",
S:            "end":"2017-04-30T07:00:00+00:00",
S:            "tlds":["example","test"],
S:            "intervention":
S:              ["connection":false,"implementation":false]
S:          }},
S:          {"notification":{
S:            "system":["epp.registry.example",
S:              "whois.registry.example",
S:              "https://portal.registry.example"],
S:            "environment":"production",
S:            "start":"2017-06-15T04:30:00+00:00",
S:            "reason":"planned maintenance",
S:            "impact":["partial","partial","blackout"],
S:            "remark":
S:              "https://portal.registry.example/maintenance-desc",
S:            "end":"2017-06-15T05:30:00+00:00",
S:            "tlds":["example"],
S:            "intervention":
S:              ["connection":true,"implementation":false]
S:          }}
S:        ]}
S:      </msg>
S:    </msgQ>
S:    <trID>
S:      <clTRID>ABC-12346</clTRID>
S:      <svTRID>54321-XYZ</svTRID>
S:    </trID>
S:  </response>
```

S:</epp>

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5. IANA Considerations

6. Security Considerations

This specification models information serialized in JSON format. As JSON is a subset of JavaScript, implementations are advised to follow the security considerations outlined in [Section 6 of \[RFC7159\]](#) to prevent code injection.

Implementers should be aware of the security considerations specified in [\[RFC5730\]](#).

7. References

7.1. Normative References

- [RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [BCP 14](#), [RFC 2119](#), March 1997, <<http://www.rfc-editor.org/info/rfc2119>>.
- [RFC3339] Klyne, G., Ed. and C. Newman, "Date and Time on the Internet: Timestamps", [RFC 3339](#), July 2002, <<https://www.rfc-editor.org/info/rfc3339>>.
- [RFC3492] Costello A., "Punycode: A Bootstring encoding of Unicode for Internationalized Domain Names in Applications (IDNA)", [RFC 3492](#), March 2003, <<https://www.rfc-editor.org/info/rfc3492>>.
- [RFC5730] Hollenbeck, S., "Extensible Provisioning Protocol (EPP)", STD 69, [RFC 5730](#), August 2009, <<https://www.rfc-editor.org/info/rfc5730>>.
- [RFC7159] Bray, T., "The JavaScript Object Notation (JSON) Data Interchange Format", [RFC 7159](#), March 2014, <<https://www.rfc-editor.org/info/rfc7159>>.

[Appendix A](#). Motivations for Using JSON

This section addresses a common question regarding the use of JSON over other data formats, most notably XML.

It is often pointed out that DNRY and DNRR support the EPP [[RFC5730](#)] standard, which is an XML serialised protocol. The logic is that since EPP is a common protocol in the industry, it follows that XML would be a more natural choice.

While that being true, the intent to use JSON is to use the already approved and reliable EPP command <poll> and its capabilities to transport mixed content without object information instead of creating a new EPP extension.

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