
Protocol Variance Document: EPP .5, 1.0, 1.0 Consolidated

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1. Introduction

1.1 Terms and Acronyms

VNDS	VeriSign Naming and Directory Services
CTLD	Consolidated Top-Level Domain, a platform being launched by VNDS to support provisioning of many TLDs through a common interface.
ccTLD	Country Code Top-Level Domain: top-level domain assigned to a country, e.g. .TV.
gTLD	Global Top-Level Domain: top-level domain without regional assignment, e.g. .COM.
TLD	Top-level domain, encompassing both gTLDs and ccTLDs.
SDK	Software Development Kit, likely including various language SDKs, documentation and example code.
API	Application Programming Interface, a component of an SDK that provides compiled or source libraries for integration to specific programming language platforms.
EPP	Extensible Provisioning Protocol, an IETF standard protocol for object provisioning.
EPP SDK	A software package that includes a easy to use interface for implementing an EPP client along with a EPP Server Stub for testing.
CORE	Existing platform offered by VNDS for provisioning .COM and .NET domains.
IDN	Internationalized Domain Namenames provisioned or resolved using character sets other than traditional ASCII.
SSL	Secure Sockets Layer – a scheme for encrypting and authentication two-party network communications.

Table 1: Terms and Acronyms Used in This Document

1.2 Conventions

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" contained in this document are to be interpreted as described in [\[RFC 2119\]](#). Bolded items indicate updates/additions to syntax.

In protocol examples, "C:" represents lines sent by the registrar client and "S:" represents lines sent by the registry server.

1.3 References

The following documents are referenced herein and provide supporting documentation of the systems we are comparing.

Table 2 - Documentation References

Author(s)	Title	Revision	Date
Scott Hollenbeck	Extensible Provisioning Protocol		3/2004
Scott Hollenbeck	Extensible Provisioning Protocol (EPP) Transport Over TCP		3/2004
Scott Hollenbeck	Extensible Provisioning Protocol (EPP) Domain Name Mapping		3/2004
Scott Hollenbeck	Extensible Provisioning Protocol (EPP) Host Mapping		3/2004
Scott Hollenbeck	Extensible Provisioning Protocol (EPP) Transport Over TCP		3/2004
	Extensible Provisioning Protocol Extension Mapping: Namestore Extension	1.1	
	Extensible Provisioning Protocol Extension Mapping: Customer Contact	1.0 DRAFT 0.1	
	Extensible Provisioning Protocol Extension Mapping: Literal IT	1.0 DRAFT 0.1	
Karthik Shyamsunder	EPP Name Store RCC Contact Mapping Guide	2.0	02/24/2004
Karthik Shyamsunder	EPP Name Store RCC Domain Mapping Guide	2.0	03/04/2004
Karthik Shyamsunder	EPP Name Store RCC Host Mapping Guide	2.0	02/26/2004
Karthik Shyamsunder	EPP Name Store RCC Job Mapping Guide	1.0	2/24/2003
Scott Hollenbeck	Domain Registry Grace Period Mapping for the Extensible Provisioning Protocol (EPP)		9/2004
Scott Hollenbeck	ConsoliDate Mapping for the Extensible Provisioning Protocol	00	12/23/2003
Mahendra Jain	EPP RGP Poll Mapping Guide	1.1	5/23/2004

Mahendra Jain	EPP Low Balance Mapping Guide	1.1	5/23/2004
Venkat Munuswamy	Extensible Provisioning Protocol Extension Mapping: IDN Language Tag	1.1	
	Extensible Provisioning Protocol Extension Mapping: Namestore Domain Billing	1.0 DRAFT 0.1	

1.4 Purpose

The purpose of this document is to analyze the protocol differences between EPP .5, EPP 1.0 and EPP 1.0 Consolidated, clarifying the upgrade path for registrars and internal users from the NameStore .5 and NameStore 1.0 to NameStore Consolidated. NameStore Consolidated is an EPP 1.0 system that includes additional features that are not included with the NameStore 1.0 system. The NameStore .5 and the NameStore 1.0 systems are being replaced by NameStore Consolidated.

1.5 Audience

The audience for this document is software developers and support personnel planning to upgrade their software from using NameStore .5 or NameStore 1.0 to NameStore Consolidated.

2. High-Level Variance Analysis

2.1 *Introduction*

This section analyzes each command offered in EPP and examines the differences in syntax and business rules associated with each. Full documentation of the EPP syntax and business rules is provided in the various documents listed in the

References section of this document. This document does not attempt to enumerate all business rules or protocol variations, only to highlight important differences that may prove to be stumbling blocks in the upgrade process.

2.2 Highlights of Protocol Changes

The following is an overview of the protocol changes between EPP .5/1.0 implementations and EPP 1.0 Consolidated implementation.

1. **IDN Support** - EPP 1.0 Consolidated supports provisioning of ASCII-encoded IDN names with the new “Extensible Provisioning Protocol: IDN Language Tag” extension.
2. **Restore command** - EPP 1.0 Consolidated supports the restore command with the new “Domain Registry Grace Period Mapping for the Extensible Provisioning Protocol” extension. This command allows a registrar to undo a delete domain request in some situations. The extension includes support for both the restore request and the restore report. The extension adds an additional status to the domain info response.
3. **Sync command** - EPP 1.0 Consolidated supports the sync command with the new “ConsoliDate Mapping for the Extensible Provisioning Protocol” extension. This command allows a registrar to modify the month and day of a domain’s registration period for the purpose of synchronizing domain expirations and renewals.
4. **Removal of premium pricing extension from EPP .5** - The “Extensible Provisioning Protocol Extension Mapping: Namestore Domain Billing” is not supported in either EPP 1.0 or EPP 1.0 Consolidated.
5. **Registry Grace Period (RGP) Poll Notification** - EPP 1.0 Consolidated added support for a new poll message with the “EPP RGP Poll Mapping” to indicate that an RGP report is required. The “Domain Registry Grace Period Mapping for the Extensible Provisioning Protocol” extension requires both a restore request and a restore report to fully execute an RGP, so the poll message is required to notify that a restore report has not been received.
6. **Low Balance Poll Notification** - EPP 1.0 Consolidated added support for a new poll message with the “EPP Low Balance Mapping” to indicate that an account’s available credit is below the credit threshold.
7. **Transfer Poll Notification** - EPP 1.0 Consolidated added the use of the domain transfer poll notification as defined in “Extensible Provisioning Protocol (EPP) Domain Name Mapping”. The transfer poll notification is sent with each transfer transform operation including
8. **Multiple Extension Support** - Support for multiple extensions in the “Extensible Provisioning Protocol Extension Mapping: Namestore Extension” is not supported in EPP 1.0 and EPP 1.0 Consolidated and is replaced for the native EPP 1.0 support for multiple extensions. In EPP 1.0 a command and response can not contains multiple extensions, which is needed when passing both the Namestore Extension along with the IDN Language Tag, RGP extension, or ConsoliDate (Sync) extension.

9. **Use of <extValue> instead of <value> tag with Error Results** - EPP .5 used free-form text in the <value> element of error results to provide additional error information. In EPP 1.0 and EPP 1.0 Consolidated, the <extValue> element is used in place of <value>, where the free-form text is contained in the <reason> sub element and the <epp:undef> element is used in the <value> sub element.
10. **EPP 1.0 Syntax Changes** - Some of the core EPP syntax changed from EPP .5 to EPP 1.0 including the <login> command, the poll <msgQ> element, the requirement for the greeting <dcg> element, and the <result> elements.
11. **RCC Mapping (RCCDomain, RCCHost, RCCContact) Changes** - The RCC mappings had significant updates from EPP .5 to EPP 1.0 to make them closer to the IETF mappings (Domain, Host, Contact). RCC defined a new EPP poll message with EPP 1.0 which used XML in place of delimited data.
12. **NameStore Handling of client Statuses** – NameStore .5 and 1.0 provides a passthrough interface to RRP based servers, which means that EPP has to be mapped to RRP. NameStore Consolidated provides full EPP behavior, so a client using NameStore .5 and 1.0 needs to account for the different behavior when setting client statuses. For example, in NameStore .5 and 1.0 setting the clientHold status winds up mapping to RRP REGISTRAR-HOLD statuses, which has the effect of automatically setting the clientUpdateProhibited, clientDeleteProhibited, and clientTransferProhibited statuses. With NameStore Consolidated, a client must set all statuses to get the same result.

2.3 High-Level Variances of Underlying Platforms

There are many differences between the platforms under which the legacy ccTLD (.TV, .CC) implementations and the NameStore Consolidated implementation is run. Highlights of these differences include:

2.3.1 IP Address Variances

The .TV implementation only supports one IP address per host, the .CC implementation supports up to 13 IP addresses per host. Additionally, all legacy implementations have a unique constraint on IP addresses, such that only one unique IP may be used for any hosts within the registry. Additionally, the legacy registries do not support IPv6 IP addresses. EPP 1.0 Consolidated does support IPv6. The following table shows supported functionality with respect to IP addresses:

functionality	.CC	.TV	CTLTD
Multiple IP addresses per nameserver	YES	NO	YES
IP address must be unique within registry	YES	YES	NO
Support of IPv6	NO	NO	YES

Table 3: Matrix of support for IP address functionality across platforms

2.3.2 IDN Provisioning

The EPP 1.0 Consolidated implementation supports provisioning of punicode-encoded ASCII domains with the “Extensible Provisioning Protocol: IDN Language Tag” extension. EPP .5 and 1.0 do not support IDN provisioning. Details of the IDN Language Tag extension syntax “Extensible Provisioning Protocol: IDN Language Tag” document and details of the registry policy can be found in the Registrar Reference Manual. I

2.3.3 Domain Transfer

EPP .5 and 1.0 do not support registrar-to-registrar transfers for .TV and do not support transfer query or transfer EPP poll messages for .CC. Details of domain transfer syntax and business rules can be found in the Registrar Reference Manual, cited in the

References section of this document.

functionality	.CC	.TV	CTLD
Transfers	YES	NO	YES
Transfer EPP Poll Messages	NO	NO	YES

Table 4: Transfer functionality across platforms

2.3.4 Domain Auto-Renewal

All platforms auto-renew domain names when their existing registration period expires. Details of domain auto-renewal business rules within the CTLD and .TV Registry systems can be found below, in the *Grace and Pending Periods* section, as well as in supporting documents cited in the

References section of this document.

2.3.5 Variable Pricing For Domains

The .TV Registry and the EPP .5 implementation supports variable pricing for domains, or “premium names”. This support was implemented with the “Extensible Provisioning Protocol Extension Mapping: Namestore Domain Billing “ extension in EPP .5, but was removed in EPP 1.0. EPP 1.0 Consolidated does not support this extension and will be rejected with a 2001 error response “Command syntax error”. Each registrar has a single price for a domain.

2.3.6 New Domain Statuses

Domains and associated domain status codes exist in a one-to-many relationship. That is, a domain name may have more than one associated status at any given time. The Registry may change the status of all registered domain names, while registrars may only change the status of domain names that they have registered. EPP 1.0 Consolidated adds support for the “Domain Registry Grace Period Mapping for the Extensible Provisioning Protocol”, which will include three new RGP statuses defined in Table 5: New RGP Statuses in EPP 1.0 Consolidated that are applied when the EPP domain pendingDelete status is set.

redemptionPeriod	This status value is used to describe a domain for which a <delete> command has been received, but the domain has not yet been purged because an opportunity exists to restore the domain and abort the deletion process.
pendingRestore	This status value is used to describe a domain that is in the process of being restored after being in the redemptionPeriod state.
pendingDelete	This status value is used to describe a domain that has entered the purge processing state after completing the redemptionPeriod state. A domain in this status MUST also be in the pendingDelete status described in the EPP domain mapping.

Table 5: New RGP Statuses in EPP 1.0 Consolidated

The following is an example

For complete documentation on domain statuses within CTLD and EPP, consult the *Registrar Reference Manual*, cited in the

References section.

2.3.7 Grace and Pending Periods

Operational “Grace” and “Pending” periods are business-rule time windows in which registry objects are subject to special conditions or business rules that do not apply to those objects in typical situations. An example of a grace or pending period is the “Add Grace Period”, a span of time after creating a domain during which that domain may be immediately deleted with a full financial credit to the provisioning registrar.

With the exception of the added functionality of restore and transfer with CTLD EPP, all grace periods are consistent between legacy and CTLD implementations.

3. EPP Command/Response Variance

This section describes the syntax variances between EPP .5, 1.0, and 1.0 Consolidated.

3.1 EPP General Command/Response Variance

3.1.1 <greeting>

EPP 1.0 added the requirement for the <greeting> to contain the <dcp> element. In addition to the <dcp> requirement, the <dcp> sub-elements changed between EPP .5 and 1.0.

EPP .5	EPP 1.0
<pre><?xml version="1.0" encoding="UTF-8" standalone="no"?> <epp xmlns="urn:ietf:params:xml:ns:epp-1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema- instance" xsi:schemaLocation="urn:ietf:params:xml:ns:epp- 1.0 epp-1.0.xsd"> <greeting> <svID>Example Company EPP server epp.example.com</svID> <svDate>2000-06-08T22:00:00.0Z</svDate> <svcMenu> <version>1.0</version> <lang>en</lang> <lang>fr</lang> <objURI>urn:ietf:params:xml:ns:contact- 1.0</objURI> <objURI>urn:ietf:params:xml:ns:domain- 1.0</objURI> <objURI>urn:ietf:params:xml:ns:host- 1.0</objURI> <svcExtension> <extURI>http://custom/objlxt- 1.0</extURI> </svcExtension> </svcMenu></pre>	<pre><?xml version="1.0" encoding="UTF-8" standalone="no"?> <epp xmlns="urn:ietf:params:xml:ns:epp-1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema- instance" xsi:schemaLocation="urn:ietf:params:xml:ns:epp- 1.0 epp-1.0.xsd"> <greeting> <svID>Example EPP server epp.example.com</svID> <svDate>2000-06-08T22:00:00.0Z</svDate> <svcMenu> <version>1.0</version> <lang>en</lang> <lang>fr</lang> <objURI>urn:ietf:params:xml:ns:obj1</objURI> <objURI>urn:ietf:params:xml:ns:obj2</objURI> <objURI>urn:ietf:params:xml:ns:obj3</objURI> <svcExtension> <extURI>http://custom/objlxt- 1.0</extURI> </svcExtension> </svcMenu></pre>

<pre> <dcp> <access><all/></access> <statement> <purpose><dnReg/><contact/></purpose> <recipient><ours/><public/></recipient> <retention><business/></retention> </statement> </dcp> </greeting> </epp> </pre>	<pre> <dcp> <access><all/></access> <statement> <purpose><admin/><prov/></purpose> <recipient><ours/><public/></recipient> <retention><stated/></retention> </statement> </dcp> </greeting> </epp> </pre>
---	--

The <greeting> for EPP 1.0 Consolidated should look like the following:

```

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp
  xmlns="urn:ietf:params:xml:ns:epp-1.0"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd"
>
  <greeting>
    <svID>Verisign NADS EPP HTTP Server: Current Thread ID : 718579226</svID>
    <svDate>2004-09-13T20:03:00.0718Z</svDate>
    <svcMenu>
      <version>1.0</version>
      <lang>en</lang>
      <objURI>http://www.verisign-grs.com/epp/rcccontact-1.1</objURI>
      <objURI>urn:ietf:params:xml:ns:domain-1.0</objURI>
      <objURI>urn:ietf:params:xml:ns:host-1.0</objURI>
      <objURI>http://www.verisign-grs.com/epp/rccjob-1.0</objURI>
      <objURI>http://www.verisign-grs.com/epp/rcchost-1.1</objURI>
      <objURI>http://www.verisign-grs.com/epp/rccdomain-1.1</objURI>
      <objURI>http://www.verisign.com/epp/lowbalance-poll-1.0</objURI>
      <svcExtension>
        <extURI>http://www.verisign-grs.com/epp/namestoreExt-1.1</extURI>
        <extURI>http://www.verisign-grs.com/epp/rccLiteralIT-1.0</extURI>
        <extURI>http://www.verisign-grs.com/epp/rccCustContact-1.0</extURI>
        <extURI>urn:ietf:params:xml:ns:rgp-1.0</extURI>
        <extURI>http://www.verisign.com/epp/sync-1.0</extURI>
        <extURI> http://www.verisign.com/epp/idnLang-1.0</extURI>
      </svcExtension>
    </svcMenu>
    <dcp>
      <access>
        <all/>
      </access>
      <statement>
        <purpose>
          <admin/>
          <prov/>
        </purpose>
        <recipient>
          <ours/>
          <public/>
        </recipient>
        <retention>
          <stated/>
        </retention>
      </statement>
    </dcp>
  </greeting>
</epp>

```

3.1.2 <login> Command

All of the EPP .5 <creds> elements have been moved directly into the <login> command. The <creds> has been removed in EPP 1.0.

Table 6 - <login> Command Variance

EPP .5	EPP 1.0
<pre> <?xml version="1.0" encoding="UTF-8" standalone="no"?> <epp xmlns="urn:ietf:params:xml:ns:epp-1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema- instance" xsi:schemaLocation="urn:ietf:params:xml:ns:epp- 1.0 epp-1.0.xsd"> <command> <creds> <clID>ClientX</clID> <pw>foo-BAR2</pw> <newPW>bar-FOO2</newPW> <options> <version>1.0</version> <lang>en</lang> </options> </creds> <login> <svcs> <objURI>urn:ietf:params:xml:ns:contact- 1.0</objURI> <objURI>urn:ietf:params:xml:ns:domain- 1.0</objURI> <objURI>urn:ietf:params:xml:ns:host- 1.0</objURI> <svcExtension> <extURI>http://custom/objlxt- 1.0</extURI> </svcExtension> </svcs> </login> <clTRID>ABC-12345</clTRID> </command> </epp> </pre>	<pre> <?xml version="1.0" encoding="UTF-8" standalone="no"?> <epp xmlns="urn:ietf:params:xml:ns:epp-1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema- instance" xsi:schemaLocation="urn:ietf:params:xml:ns:epp- 1.0 epp-1.0.xsd"> <command> <login> <clID>ClientX</clID> <pw>foo-BAR2</pw> <newPW>bar-FOO2</newPW> <options> <version>1.0</version> <lang>en</lang> </options> <svcs> <objURI>urn:ietf:params:xml:ns:obj1</objURI> <objURI>urn:ietf:params:xml:ns:obj2</objURI> <objURI>urn:ietf:params:xml:ns:obj3</objURI> <svcExtension> <extURI>http://custom/objlxt- 1.0</extURI> </svcExtension> </svcs> </login> <clTRID>ABC-12345</clTRID> </command> </epp> </pre>

3.1.3 <logout> Command

No variance between EPP .5 and EPP 1.0.

3.1.4 Error <response>

EPP 1.0 added the <extValue> element to the <response> to allow the server to specify a free-form text <reason>. In EPP .5, NameStore used the <value> element to include free-form text error information, but EPP 1.0 requires XML data in the <value> element. NameStore EPP 1.0 now uses the <extValue> element for returning free-form text error

information to the client. Where a command element can not be identified, the element `<epp:undef/>` is used as the value of the `<value>` element of `<extValue>`.

Table 7 - Error `<response>` Variance

EPP .5	EPP 1.0
<pre> <?xml version="1.0" encoding="UTF-8" standalone="no"?> <epp xmlns="urn:ietf:params:xml:ns:epp-1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema- instance" xsi:schemaLocation="urn:ietf:params:xml:ns:epp- 1.0 epp-1.0.xsd"> <response> <result code="2005"> <msg>Parameter value range error</msg> <value>Invalid character found.</value> </result> <trID> <clTRID>ABC-12345</clTRID> <svTRID>54321-XYZ</svTRID> </trID> </response> </epp> </pre>	<pre> <?xml version="1.0" encoding="UTF-8" standalone="no"?> <epp xmlns="urn:ietf:params:xml:ns:epp-1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema- instance" xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd"> <response> <result code="2005"> <msg>Parameter value syntax error</msg> <extValue> <value xmlns:epp="urn:ietf:params:xml:ns:epp-1.0"> <epp:undef/> </value> <reason>Invalid character found.</reason> </extValue> </result> <trID> <clTRID>ABC-12345</clTRID> <svTRID>54321-XYZ</svTRID> </trID> </response> </epp> </pre>

3.1.5 `<poll>` Command/Response

The poll response format greatly changed between EPP .5 and EPP 1.0.

3.1.5.1 `<poll>` Command

No variance in this command between EPP .5 and EPP 1.0.

3.1.5.2 `<poll>` Response

The poll response elements were moved out of the generic `<result>` element and moved under the `<msgQ>` element. Specifically, The result code 1301 will always return a `<msg>` value of “Command completed successfully; ack to dequeue” in EPP 1.0, and the `<msgQ>` will contain the generic poll queue `<msg>` element associated with the poll message. Additionally, the message id has moved to an attribute of the `<msgQ>` element instead of an attribute of the `<result>` `<msg>` element.

Table 8 - Poll `<response>` Variance

EPP .5	EPP 1.0
<pre> <?xml version="1.0" encoding="UTF-8" standalone="no"?> <epp xmlns="urn:ietf:params:xml:ns:epp-1.0" </pre>	<pre> <?xml version="1.0" encoding="UTF-8" standalone="no"?> <epp xmlns="urn:ietf:params:xml:ns:epp-1.0" </pre>

<pre> xmlns:xsi="http://www.w3.org/2001/XMLSchema- instance" xsi:schemaLocation="urn:ietf:params:xml:ns:epp- 1.0 epp-1.0.xsd"> <response> <result code="1301"> <msg id="12345">Transfer requested.</msg> </result> <msgQ count="5"> <qDate>2000-06-08T22:00:00.0Z</qDate> </msgQ> <resData> <obj:trnData xmlns:obj="urn:ietf:params:xml:ns:obj" xsi:schemaLocation="urn:ietf:params:xml:ns:obj obj.xsd"> <obj:name>example</obj:name> <obj:trStatus>pending</obj:trStatus> <obj:reID>ClientX</obj:reID> <obj:reDate>2000-06- 08T22:00:00.0Z</obj:reDate> <obj:acID>ClientY</obj:acID> <obj:acDate>2000-06- 13T22:00:00.0Z</obj:acDate> <obj:exDate>2002-09- 08T22:00:00.0Z</obj:exDate> </obj:trnData> </resData> <trID> <clTRID>ABC-12345</clTRID> <svTRID>54321-XYZ</svTRID> </trID> </response> </epp> </pre>	<pre> xmlns:xsi="http://www.w3.org/2001/XMLSchema- instance" xsi:schemaLocation="urn:ietf:params:xml:ns:epp- 1.0 epp-1.0.xsd"> <response> <result code="1301"> <msg>Command completed successfully; ack to dequeue</msg> </result> <msgQ count="5" id="12345"> <qDate>2000-06-08T22:00:00.0Z</qDate> <msg>Transfer requested.</msg> </msgQ> <resData> <obj:trnData xmlns:obj="urn:ietf:params:xml:ns:obj- 1.0" xsi:schemaLocation="urn:ietf:params:xml:ns:obj- 1.0 obj-1.0.xsd"> <obj:name>example.com</obj:name> <obj:trStatus>pending</obj:trStatus> <obj:reID>ClientX</obj:reID> <obj:reDate>2000-06- 08T22:00:00.0Z</obj:reDate> <obj:acID>ClientY</obj:acID> <obj:acDate>2000-06- 13T22:00:00.0Z</obj:acDate> <obj:exDate>2002-09- 08T22:00:00.0Z</obj:exDate> </obj:trnData> </resData> <trID> <clTRID>ABC-12345</clTRID> <svTRID>54321-XYZ</svTRID> </trID> </response> </epp> </pre>
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EPP 1.0 Consolidated includes support for the following types of poll messages:

1. Transfer Poll Notification – This is a standard EPP poll notification for transfer operation (request, cancel, approve, reject) that will be supported for the first time with EPP 1.0 Consolidated.
2. Low Balance Poll Notification – New poll message, defined in the “EPP Low Balance Mapping Guide”, that is used to notify a customer that there available credit is below a specified threshold.
3. RGP Poll Notification – New poll message, defined in “EPP RGP Poll Mapping Guide”, that is used to notify a customer that a RGP restore command was received without the required RGP restore report command.
4. RCCTLD Pending Action Notification – EPP 1.0 poll notification, defined in the “EPP Name Store RCC Domain Mapping Guide”, that is used to provide the status of a domain pending action.

3.1.6 <hello> Command

No variance between EPP .5 and EPP 1.0.

3.2 EPP Namestore Extension Variance

The EPP Namestore Extension is used with all Domain Commands/Responses and Host Commands/Responses to specify the logical NameStore Registry. For EPP .5, the extension is version 1.0 and for EPP 1.0, the extension is version 1.1. The primary difference between version 1.0 and 1.1 is the removal of the support for the <namestoreExt:extensions> element. EPP 1.0 supports multiple extensions, so there is no need for <namestoreExt:extensions> in EPP 1.0. The list of possible subProduct values is defined in Table 10 - Possible subProduct Values.

Table 9 - <namestoreExt> Variance

EPP .5	EPP 1.0
<pre> <namestoreExt:namestoreExt xmlns:namestoreExt="http://www.verisign- grs.com/epp/namestoreExt-1.0" xsi:schemaLocation="http://www.verisign- grs.com/epp/namestoreExt-1.0 namestoreExt-1.0.xsd" > <namestoreExt:subProduct>dotCC</namestoreExt:subProduct> <namestoreExt:extensions> ... </namestoreExt:extensions> </namestoreExt:namestoreExt> </pre>	<pre> <namestoreExt:namestoreExt xmlns:namestoreExt="http://www.verisign- grs.com/epp/namestoreExt-1.1" xsi:schemaLocation="http://www.verisign- grs.com/epp/namestoreExt-1.1 namestoreExt-1.1.xsd" > <namestoreExt:subProduct>dotCC</namestoreExt:subPro </namestoreExt:namestoreExt> </pre>

Table 10 - Possible subProduct Values

Environment	EPP .5	EPP 1.0	Consolidated EPP 1.0
OT&E	dotCC, dotTV	dotCC, dotTV	dotBZ, dotCC, dotCOM, dotNET dotTV
Production	dotCC, dotTV	dotCC, dotTV	dotBZ, dotCC, dotTV

3.3 EPP Domain Command/Response Variance

3.3.1 Domain <check>

All systems allow a registrar to check availability of a domain in the registry.

3.3.1.1 Domain <check> Command Variance

No variance between EPP .5 and EPP 1.0.

3.3.1.2 Domain <check> Response Variance

As of EPP 1.0, NameStore does not support the use of the “Extensible Provisioning Protocol Extension Mapping: Namestore Domain Billing” extension which was a requirement for Domain <check> responses in EPP .5. The variance for error responses is described in section 3.1.4.

3.3.2 Domain <info>

All systems allow a registrar to check availability of a domain in the registry.

3.3.2.1 Domain <info> Command Variance

EPP 1.0 defines the option to use <domain:authInfo> for a <info> command, which is not supported by NameStore so the syntax for <info> command does not change between EPP .5 and EPP 1.0.

3.3.2.2 Domain <info> Response Variance

The format of the <domain:ns> and the <domain:authInfo> elements changed between EPP .5 and EPP 1.0 as well as the error responses as described in section 3.1.4.

Table 11 - Domain <info> Response Variance

EPP .5	EPP 1.0
<pre> <?xml version="1.0" encoding="UTF-8" standalone="no"?> <epp xmlns="urn:ietf:params:xml:ns:epp-1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema- instance" xsi:schemaLocation="urn:ietf:params:xml:ns:ep p-1.0 epp-1.0.xsd" > <response> <result code="1000"> <msg>Command completed successfully</msg> </result> <resData> <domain:infData xmlns:domain="urn:ietf:params:xml:ns:domain- 1.0" xsi:schemaLocation="urn:ietf:params:xml:ns:do main-1.0 domain-1.0.xsd" > <domain:name>TEST.CC</domain:name> <domain:roid>86377203DOMAIN- NAME</domain:roid> <domain:status s="ok"/> <domain:ns>NS1.TEST.CC</domain:ns> <domain:host>NS1.TEST.CC</domain:host> <domain:clID>TEST</domain:clID> <domain:crID>nccmaster</domain:crID> <domain:crDate>2004-09- 20T14:23:48.0000Z</domain:crDate> <domain:upID>TEST-ADMIN</domain:upID> <domain:upDate>2004-09- 21T15:26:34.0000Z</domain:upDate> <domain:exDate>2005-09- 20T14:23:48.0000Z</domain:exDate> <domain:authInfo type="pw">ctldpw</domain:authInfo> </domain:infData> </resData> <trID> <clTRID>ABC-12345</clTRID> <svTRID>1095780334978-13525</svTRID> </trID> </response> </epp> </pre>	<pre> <?xml version="1.0" encoding="UTF-8" standalone="no"?> <epp xmlns="urn:ietf:params:xml:ns:epp-1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema- instance" xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd" > <response> <result code="1000"> <msg>Command completed successfully</msg> </result> <resData> <domain:infData xmlns:domain="urn:ietf:params:xml:ns:domain- 1.0" xsi:schemaLocation="urn:ietf:params:xml:ns:domain- 1.0 domain-1.0.xsd" > <domain:name>TEST.CC</domain:name> <domain:roid>86377203DOMAIN- NAME</domain:roid> <domain:status s="ok"/> <domain:ns> <domain:hostObj>NS1.TEST.CC</domain:hostObj> </domain:ns> <domain:host>NS1.TEST.CC</domain:host> <domain:clID>TEST</domain:clID> <domain:crID>TEST-ADMIN</domain:crID> <domain:crDate>2004-09- 20T14:23:48.0000Z</domain:crDate> <domain:upID>TEST-ADMIN</domain:upID> <domain:upDate>2004-09- 21T15:26:34.0000Z</domain:upDate> <domain:exDate>2005-09- 20T14:23:48.0000Z</domain:exDate> <domain:authInfo> <domain:pw>password</domain:pw> </domain:authInfo> </domain:infData> </resData> <trID> <clTRID>ABC-12345</clTRID> <svTRID>1095780334978-13525</svTRID> </trID> </response> </epp> </pre>

3.3.2.3 Domain <create>

All systems allow a registrar to create or add a domain (on behalf of a registrant) to the registry.

3.3.2.3.1 Domain <create> Command Variance

EPP 1.0 changed the way domain name servers are referenced and changed the formatting of the <authInfo> element. NameStore supports the fully qualified name server host object through the use of the <domain:hostObj> elements. As of EPP 1.0,

NameStore does not support the use of the “Extensible Provisioning Protocol Extension Mapping: Namestore Domain Billing “extension, which was a required for Domain <create> commands in EPP .5.

Table 12 - Domain <create> Command Variance

EPP .5	EPP 1.0
<pre> <?xml version="1.0" encoding="UTF-8" standalone="no"?> <epp xmlns="urn:ietf:params:xml:ns:epp-1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd" > <command> <create> <domain:create xmlns:domain="urn:ietf:params:xml:ns:domain-1.0" xsi:schemaLocation="urn:ietf:params:xml:ns:domain-1.0 domain-1.0.xsd" > <domain:name>test.cc</domain:name> <domain:period unit="y">2</domain:period> <domain:ns>pri.domainnames.com</domain:ns> <domain:ns>ns1.example.cc</domain:ns> <domain:authInfo type="pw">ctldpw</domain:authInfo> </domain:create> </create> <extension> <namestoreExt:namestoreExt xmlns:namestoreExt="http://www.verisign- grs.com/epp/namestoreExt-1.0" xsi:schemaLocation="http://www.verisign- grs.com/epp/namestoreExt-1.0 namestoreExt-1.0.xsd" > <namestoreExt:subProduct>dotCC</namestoreExt:subProduct> </namestoreExt:namestoreExt> </extension> <clTRID>ABC-12345</clTRID> </command> </epp> </pre>	<pre> <?xml version="1.0" encoding="UTF-8" standalone="no"?> <epp xmlns="urn:ietf:params:xml:ns:epp-1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd" > <command> <create> <domain:create xmlns:domain="urn:ietf:params:xml:ns:domain-1.0" xsi:schemaLocation="urn:ietf:params:xml:ns:domain-1.0 domain-1.0.xsd" > <domain:name>test.cc</domain:name> <domain:period unit="y">2</domain:period> <domain:ns> <domain:hostObj>pri.domainnames.com</domain:hostObj> <domain:hostObj>ns1.example.cc</domain:hostObj> </domain:ns> <domain:authInfo> <domain:pw>ctldpw</domain:pw> </domain:authInfo> </domain:create> </create> <extension> <namestoreExt:namestoreExt xmlns:namestoreExt="http://www.verisign- grs.com/epp/namestoreExt-1.1" xsi:schemaLocation="http://www.verisign- grs.com/epp/namestoreExt-1.1 namestoreExt-1.1.xsd" > <namestoreExt:subProduct>dotCC</namestoreExt:subPro </namestoreExt:namestoreExt> </extension> <clTRID>ABC-12345</clTRID> </command> </epp> </pre>

3.3.2.3.2 Domain <create> Response Variance

No variance between EPP .5 and EPP 1.0 other than for errors as described in section 3.1.4.

3.3.2.4 Domain <update>

All systems allow a registrar to modify or update a domain (on behalf of a registrant) within the registry.

3.3.2.4.1 Domain <update> Command Variance

EPP 1.0 changed the way domain name servers are referenced and changed the formatting of the <authInfo> element. NameStore supports the fully qualified name server host object through the use of the <domain:hostObj> elements.

Table 13 - Domain <update> Command Variance

EPP .5	EPP 1.0
<pre> <?xml version="1.0" encoding="UTF-8" standalone="no"?> <epp xmlns="urn:ietf:params:xml:ns:epp-1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema- instance" xsi:schemaLocation="urn:ietf:params:xml:ns:epp- 1.0 epp-1.0.xsd" > <command> <update> <domain:update> xmlns:domain="urn:ietf:params:xml:ns:domain-1.0" xsi:schemaLocation="urn:ietf:params:xml:ns:domain- 1.0 domain-1.0.xsd" > <domain:name>test.cc</domain:name> <domain:rem> <domain:ns>ns1.example.cc</domain:ns> </domain:rem> <domain:add> <domain:ns>ns1.examples.cc</domain:ns> </domain:add> </domain:update> </update> <extension> <namestoreExt:namestoreExt xmlns:namestoreExt="http://www.verisign- grs.com/epp/namestoreExt-1.1" xsi:schemaLocation="http://www.verisign- grs.com/epp/namestoreExt-1.1 namestoreExt-1.1.xsd" > <namestoreExt:subProduct>dotCC</namestoreExt:subPro duct> </namestoreExt:namestoreExt> </extension> <clTRID>ABC-12345</clTRID> </command> </epp> </pre>	<pre> <?xml version="1.0" encoding="UTF-8" standalone="no"?> <epp xmlns="urn:ietf:params:xml:ns:epp-1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema- instance" xsi:schemaLocation="urn:ietf:params:xml:ns:epp- 1.0 epp-1.0.xsd" > <command> <update> <domain:update> xmlns:domain="urn:ietf:params:xml:ns:domain-1.0" xsi:schemaLocation="urn:ietf:params:xml:ns:domei n-1.0 domain-1.0.xsd" > <domain:name>test.cc</domain:name> <domain:rem> <domain:ns> </domain:rem> <domain:add> <domain:hostObj>ns1.example.cc</domain:hostObj> </domain:ns> </domain:add> </domain:update> </update> <extension> <namestoreExt:namestoreExt xmlns:namestoreExt="http://www.verisign- grs.com/epp/namestoreExt-1.1" xsi:schemaLocation="http://www.verisign- grs.com/epp/namestoreExt-1.1 namestoreExt- 1.1.xsd" > <domain:hostObj>ns1.examples.cc</domain:hostObj> </domain:ns> </domain:add> </domain:update> </update> <extension> <namestoreExt:namestoreExt xmlns:namestoreExt="http://www.verisign- grs.com/epp/namestoreExt-1.1" xsi:schemaLocation="http://www.verisign- grs.com/epp/namestoreExt-1.1 namestoreExt- 1.1.xsd" > <namestoreExt:subProduct>dotCC</namestoreExt:sub Product> </namestoreExt:namestoreExt> </extension> <clTRID>ABC-12345</clTRID> </command> </epp> </pre>

3.3.2.4.2 Domain <update> Response Variance

No variance between EPP .5 and EPP 1.0 other than for errors as described in section 3.1.4.

3.3.2.5 Domain <renew>

3.3.2.5.1 Domain <renew> Command Variance

As of EPP 1.0, NameStore does not support the use of the “Extensible Provisioning Protocol Extension Mapping: Namestore Domain Billing” extension, which was a required for Domain <renew> commands in EPP .5.

3.3.2.5.2 Domain <renew> Response Variance

No variance between EPP .5 and EPP 1.0 other than for errors as described in section 3.1.4.

3.3.2.6 Domain <delete>

All systems allow a registrar to delete availability a domain (on behalf of a registrant) attributed to them in the registry.

3.3.2.6.1 Domain <delete> Command Variance

No variance between EPP .5 and EPP 1.0.

3.3.2.6.2 Domain <delete> Response Variance

No variance between EPP .5 and EPP 1.0 other than for errors as described in section 3.1.4.

3.3.2.7 Domain <transfer>

Refer to section 2.3.3 for detail on transfer support across EPP .5, EPP 1.0, and Consolidated EPP 1.0.

3.3.2.7.1 Domain <transfer> Command Variance

EPP 1.0 defines the option to use <domain:authInfo> for a <transfer> query, which is not supported by NameStore so the syntax for <transfer> query does not change between EPP .5 and EPP 1.0. The format of the <domain:authInfo> has changed from EPP .5 and EPP 1.0, which is required for <transfer> requests.

Table 14 - Domain <transfer> Request Command Variance

EPP .5	EPP 1.0
<pre> <?xml version="1.0" encoding="UTF-8" standalone="no"?> <epp xmlns="urn:ietf:params:xml:ns:epp-1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd" > <command> <transfer op="request"> <domain:transfer xmlns:domain="urn:ietf:params:xml:ns:domain- 1.0" xsi:schemaLocation="urn:ietf:params:xml:ns:domain-1.0 domain-1.0.xsd" > <domain:name>test.cc</domain:name> <domain:period unit="y">1</domain:period> <domain:authInfo> <domain:pw roid="JD1234- REP">ctldpw</domain:pw> </domain:authInfo> </domain:transfer> </transfer> <extension> <namestoreExt:namestoreExt xmlns:namestoreExt="http://www.verisign- grs.com/epp/namestoreExt-1.1" xsi:schemaLocation="http://www.verisign- grs.com/epp/namestoreExt-1.1 namestoreExt-1.1.xsd" > <namestoreExt:subProduct>dotCC</namestoreExt:subProduct > </namestoreExt:namestoreExt> </extension> <clTRID>ABC-12345</clTRID> </command> </epp> </pre>	<pre> <?xml version="1.0" encoding="UTF-8" standalone="no"?> <epp xmlns="urn:ietf:params:xml:ns:epp-1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema- instance" xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd" > <command> <transfer op="request"> <domain:transfer xmlns:domain="urn:ietf:params:xml:ns:domain- 1.0" xsi:schemaLocation="urn:ietf:params:xml:ns:domain- 1.0 domain-1.0.xsd" > <domain:name>test.cc</domain:name> <domain:period unit="y">1</domain:period> <domain:authInfo> <domain:pw roid="JD1234- REP">ctldpw</domain:pw> </domain:authInfo> </domain:transfer> </transfer> <extension> <namestoreExt:namestoreExt xmlns:namestoreExt="http://www.verisign- grs.com/epp/namestoreExt-1.1" xsi:schemaLocation="http://www.verisign- grs.com/epp/namestoreExt-1.1 namestoreExt-1.1.xsd" > <namestoreExt:subProduct>dotCC</namestoreExt:subProd uct> </namestoreExt:namestoreExt> </extension> <clTRID>ABC-12345</clTRID> </command> </epp> </pre>

3.3.2.7.2 Domain <transfer> Response Variance

No variance between EPP .5 and EPP 1.0 other than for errors as described in section 3.1.4.

3.3.2.8 Domain <Restore>

Support of the [Domain Registry Grace Period Mapping for the Extensible Provisioning Protocol](#) extension is newly supported in NameStore Consolidated. The grace period statuses addPeriod, autoRenewPeriod, renewPeriod, and transferPeriod are not supported. The redemptionPeriod, pendingDelete, and pendingRestore statuses for supporting the restore request command. Restore command and restore report commands are new commands defined in the RGP specification. The restore request/report commands allow a registrar to undo a delete domain request in some situations.

3.3.2.9 Domain <sync>

Support of the ConsoliDate Mapping for the Extensible Provisioning Protocol extension is newly supported in NameStore Consolidated. ConsoliDate is used to synchronize a domain name registration period expiration date, and is specified by including an <sync:update> extension to an empty domain <update> command..

3.4 EPP Host Command/Response Variance

There are no EPP .5 to EPP 1.0 variances for EPP Host in NameStore since NameStore does not use the new pending statuses (pendingCreate and pendingUpdate).

3.5 RCCDomain Variance

RCCDomain has the following XML schema changes from EPP .5 to EPP 1.0:

1. The requirement to use a NamestoreExt extension to contain any other extension has been removed. This was previously required for create operations involving the RCCLiteralIT and RCCCustContact extensions.
2. The <check> element has had an optional <quality> element added. This will be used to specify a requested quality for the check responses.
3. The <cd> element has had an optional “quality” attribute added. This will be used to specify the estimated quality of the check result.
4. The <info>, <update> and <delete> elements can now take either <id> or <name> to determine the object to operate upon. Use of the <name> element has the possibility of returning multiple matches in certain cases. In the case of <info>, the most probable match will be returned, with the alternatives specified in the <infData> response. For other operations, multiple matches will cause the operation to operate upon the single active domain. If there is no active domain, the operation will fail.
5. The <registrantcontact> element has been renamed to <registrant> in all the locations where it is used.
6. The <admincontact> element has been renamed to <contact type=”admin”> in all the locations where it is used.
7. The <techcontact> element has been renamed to <contact type=”tech”> in all the locations where it is used.
8. The <host1> through <host4> elements have been renamed to <ns1> through <ns4> in all the locations where they are used.
9. New <ns5> though <ns13> elements have been added wherever <ns1> through <ns4> are used. These will allow more than 4 nameservers to be used for a domain.
10. The <infData> element has been extended to support zero or more new <status> elements that specify the currently applied statuses of the object.
11. The <infData> element has been extended to support zero or more new <alternatived> elements that specify other possible domain id’s when the info request has multiple matches.
12. The <infData> element has been extended to support zero or more new <host> elements that specify the subsidiary hosts of the domain object.

13. The <infData> element has been extended to include a new <delDate> element that specifies the date by which the domain must be deleted in order to avoid auto-renewal.
14. The <update> element has been extended to support the adding or removing of new <status> elements that specify the required modifications to the statuses of the object.
15. A new poll message format has been defined. This is documented in the RCCDomain Mapping Document as the <panData> element.

3.6 *RCCHost Variance*

RCCHost has the following XML schema changes from EPP .5 to EPP 1.0:

1. The <infData> element has been extended to support zero or more new <status> elements that specify the currently applied statuses of the object.
2. The <update> element has been extended to support the adding or removing of new <status> elements that specify the required modifications to the statuses of the object.

3.7 *RCCJob Variance*

No variance between EPP .5 and EPP 1.0.