VIETNAM INTERNET NETWORK INFORMATION CENTER - VNNIC

TECHNICAL DEPARTMENT

VNNIC EPP GATEWAY SPEC DRAFT

VNNIC EPP GATEWAY SPECIFICATION

(Version 4.1)

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Part 1. Overview

1.1. Document using

- This document provides the specification of VNNIC EPP Gateway system for registrars building their EPP client and connect to VNNIC System via EPP.
- The Registrar shall not be permitted to provide part or all of the contents of this document for 3rd party.

1.2. Release note

- Vesion V4.1
  - Date: 16/07/2014
  - Note:
    - Add release note information
    - Add message poll from Registry actions (see 2.5.4)
    - Add list of CityCode in Viet Nam (apendix)
    - Add list of Country Code (apendix)
    - Update validate rule for <contact:city>
    - Correct some syntax error
- Version V4:
  - Date: 11/12/2013
  - Note: All relative document about VNNIC EPP Gateway.

1.3. EPP Overview

1.3.1. What is EPP

- The Extensible Provisioning Protocol (EPP) is flexible protocol designed for allocating objects within registries over the Internet, specialy for communication between domain name registries and domain name registrars through client-server model.
- EPP is based on XML - a structured, text-based format using TCP network transportation.
- EPP protocol implement by defined commands and all EPP commands are atomic.

1.3.2. EPP State Machine

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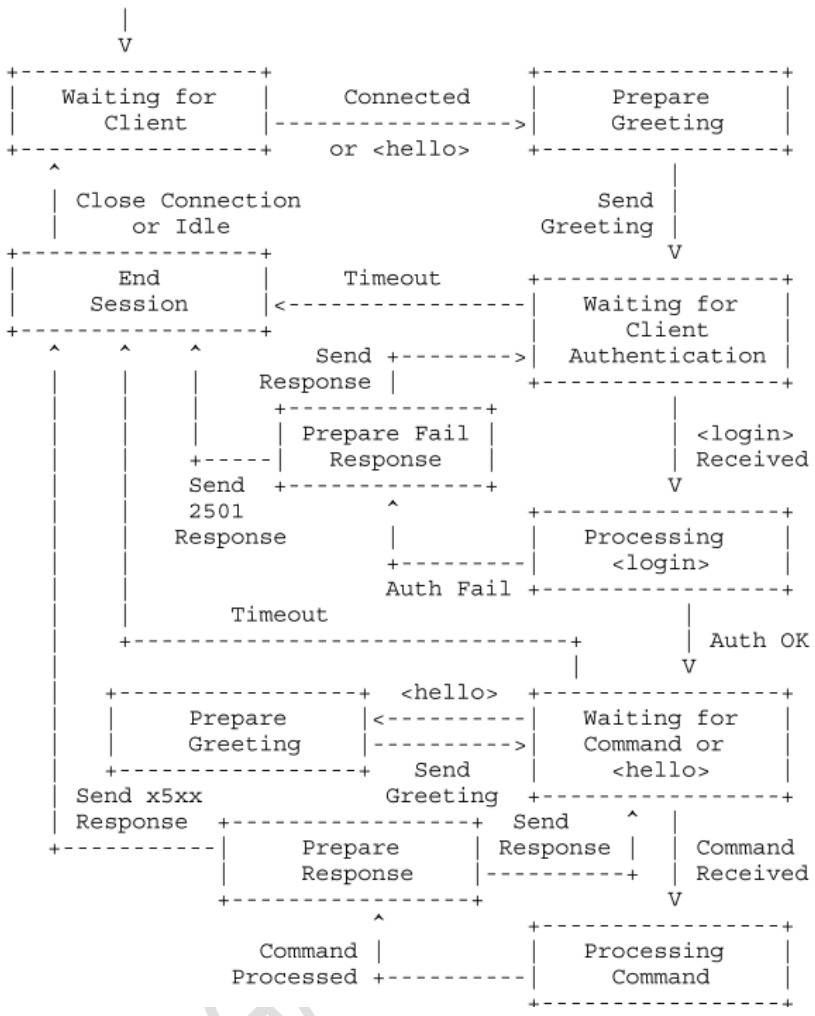
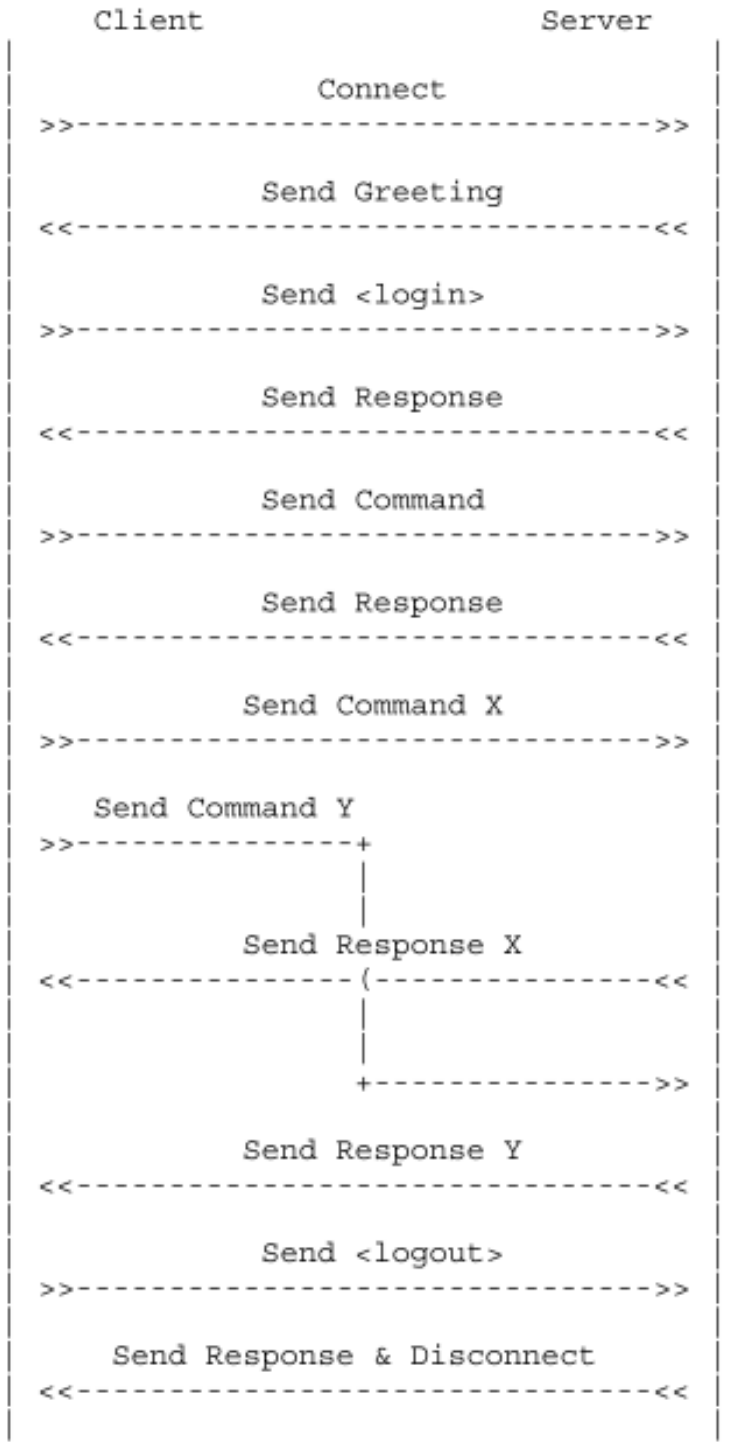


1.3.3. EPP Client – Server Message Exchange

- EPP messages are initiated by the EPP client in the form of EPP commands. An EPP server MUST return an EPP response to an EPP command on the same TCP connection that carried the command.
- EPP commands are idempotent, so processing a command more than once produces the same net effect on the repository as successfully processing the command once.
- An EPP client streams EPP commands to an EPP server on an established TCP connection. A client MUST NOT distribute commands from a single EPP session over multiple TCP connections. A client MAY establish multiple TCP connections to support multiple EPP sessions with each session mapped to a single connection.
- Each EPP data unit MUST contain a single EPP message. Commands MUST be processed independently and in the same order as sent from the client

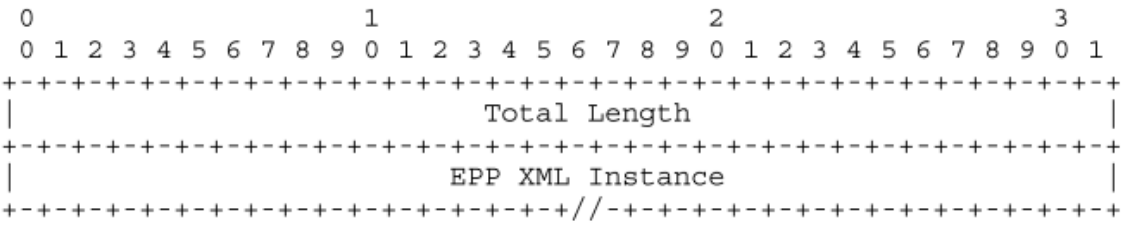


1.3.4. EPP Data Unit Format

- EPP Data Unit contain 2 fields:
  - 32 bit header that decribes the total length of the data unit

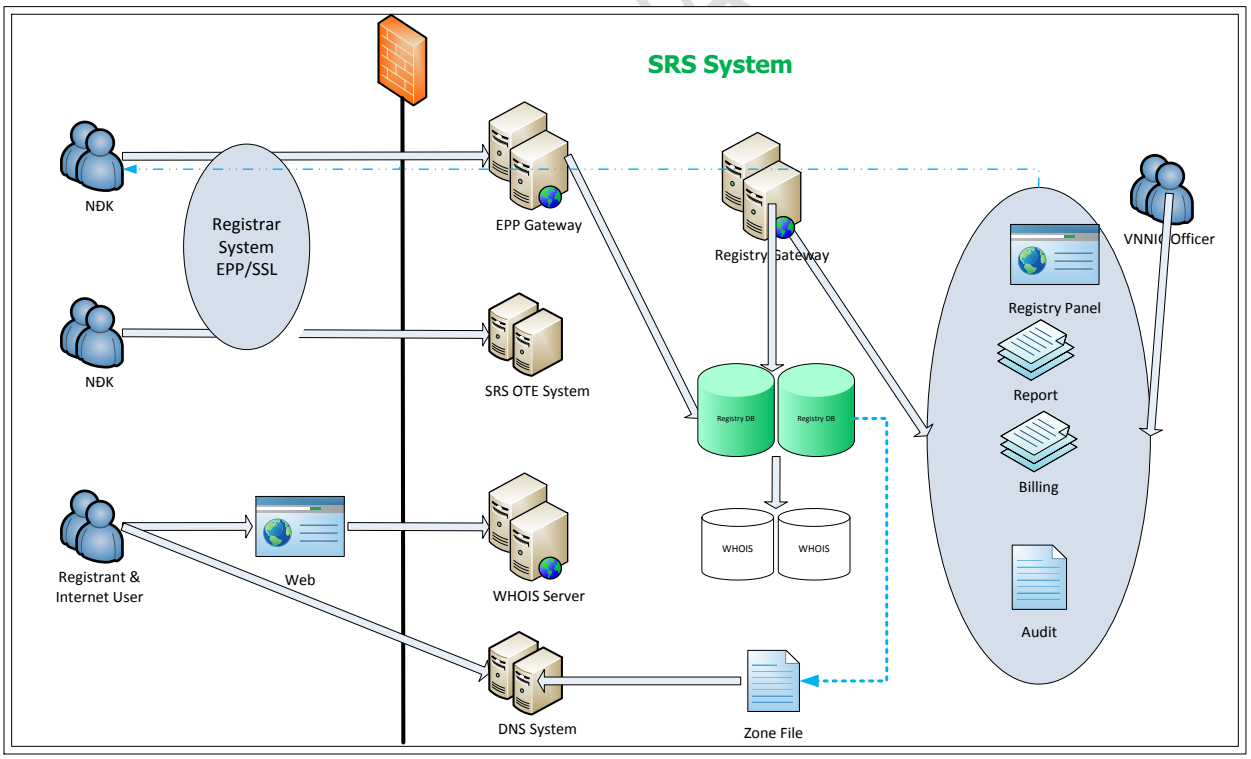
- the EPP XML instance.

- The length of the EPP XML instance is determined by subtracting four octets from the total length of the data unit.
- A receiver must successfully read that many octets to retrieve the complete EPP XML instance before processing the EPP message.
- EPP Data Unit Format (one tick mark represents one bit position) as below



1.3.5. An EPP System

This figure show VNNIC EPP System Model



1.4. EPP mapping in domain management

1.4.1. RFCs

The first EPP RFCs were published in March 2004, updated in 2007 and lastest version were updated in 2009

RFC	Description
5730	Extensible Provisioning Protocol (EPP)
5731	Extensible Provisioning Protocol (EPP) Domain Name Mapping
5732	Extensible Provisioning Protocol (EPP) Host Mapping
5733	Extensible Provisioning Protocol (EPP) Contact Mapping
5734	Protocol (EPP) Transport Over TCP
3735	Guidelines for Extending the Extensible Provisioning Protocol (EPP)

1.4.2. EPP Commands

- Session Management
- Query
- Transformation

1.4.3. EPP Object

- Domain
- Contact
- Host

EPP Commands and Objects mapping

<table>
<tr><th>Function</th><th>Command</th><th>Domain</th><th>Host</th><th>Contact</th></tr>
<tr><td rowspan="4">Session Management</td><td><hello></td><td colspan="3" rowspan="4">None</td></tr>
<tr><td><greeting></td></tr>
<tr><td><login></td></tr>
<tr><td><logout></td></tr>
</table>

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Query	**<check>**	√	√	√
	<info>	√	√	√
	<transfer>	√	**N/A**	√
	<poll>	**N/A**	**N/A**	**N/A**
Transformation	**<create>**	√	√	√
	<update>	√	√	√
	<delete>	√	√	√
	<renew>	√	**N/A**	**N/A**
	<transfer>	√	**N/A**	√

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Part 2. VNNIC EPP Mapping

2.1. Overview

2.1.1. Procedures

- VNNIC support only Domain object and Contact object, do not using Host object. So Name Servers are list in <domain:hostAttr> elements. Each element MAY contain an "ip" attribute to identify the IP address format. If the "ip" attribute is not specified, "v4" is the default attribute value.
- We have extension for Contact object to manage some extra information about Individual and Organization as Policy requirement.

2.1.2. Data Validation

Attributes	EPP elements	Validate
Domain Name	<domain:name>	- Characters should only be a-z | A-Z | 0-9 and period (.) and dash(-) - The domain name part (domain lable) should not start or end with dash (-) (e.g. -example-.vn) - The domain name part (domain lable) should be between 1 and 63 characters long and for fully domain name should be between 4 and 255
Renewal period	<domain:period>	- By year, 1<=N<=50
Authoration Code	<domain:authInfo> <domain:pw> </domain:authInfo>	- String, length must be between 6 and 255 - Characters should only be a-z | A-Z | 0-9
Name servers	<domain:ns> <domain:hostAttr> <domain:hostName> </domain:hostName> </domain:hostAttr> </domain:ns>	- <domain:hostName> refer to <domain:name> - <domain:hostAddr > refer to Ipv4 or Ipv6 syntax - Number of <domain: hostAttr > elements should be between 1 and 13
Registrant	<domain:registrant>	- Refer to <contact:id> validation in Contact object
Contacts	<domain:contact type=””>	- Refer to <contact:id> validation in Contact object - “type” value : admin, tech, billing
Status	<domain:status s="clientHold"/>	- All EPP standard status
Registrar	<domain:clID>	- Registrar account created by VNNIC

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Account		
Created Date	<domain:crDate>	- YYYY-MM-DDTHH:mm:ss
Last Updated Date	<domain:upDate>	- YYYY-MM-DDTHH:mm:ss
Expired Date	<domain:exDate>	- YYYY-MM-DD
Current Expiry Date	<domain:curExDate>	- YYYY-MM-DD
Reason	<domain:reason>	- String, length should be less than 500.
Pending Transfer Status	<domain:status s=”pendingTransfer”>	- pendingTransfer
Gain Registrar	<domain:reID>	- Refer to Registrar Account
Lost Registrar	<domain:acID>	- Refer to Registrar Account
Transfer Act Date	<domain:acDate>	- YYYY-MM-DDTHH:mm:ss
Transfer Request Date	<domain:reDate>	- YYYY-MM-DDTHH:mm:ss
ID Contact	<contact:id>	- Created by Registrars, unique in system - Should be between 8 and 32 characters long - Recommendation format : XXX-XXX (X is characters a-z | A-Z | 0-9)
Localization	<contact: postalInfo type=”loc/int”>	- “type” value : “loc” for localized and “int” for internationalized form
Contact Name	<contact:name>	- String, - Should be between 5 and 500 characters long
Organization Name	<contact:org>	- String, - Should be between 5 and 500 characters long
Address	<contact:street>	- String, - Should be between 5 and 500 characters long
City	<contact:city>	- String, - Should be between 2 and 50 characters long - If the <Country> is VN, the <City> should be CityCode refer to list of CityCode as an apendix of this document

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Country	<contact:cc>	- String, - Should be Country Code standard, refer to List of CountryCode as an apendix of this document
Phone	<contact:voice>	- +CC-XXXXX - One phone number only
Fax	<contact:fax>	- +CC-XXXXX - One fax number only
Email	<contact:email>	- Refer to email asdress standard syntax - One email address only
Disclosure	<contact:disclose flag=”0/1”>	- Support : voice, email, fax - Not yet applied
Contact extension		
Contact Type	<vncontact: extInfo type=”ind/org”>	- Support “ind” for individual and “org” for Organization
Trade Name	<vncontact: IntTraName>	- String, - Should be between 2 and 50 characters long
Identification or Passport Number	<vncontact: IDPP>	- String, - Should be between 2 and 50 characters long
Gender	<vncontact: gender>	- String, - Should be between 2 and 40 characters long
Birthday	<vncontact: birthDate>	- YYYY-MM-DD
Working Position	<vncontact:position>	- String, - Should be between 2 and 200 characters long

2.1.3. Result Code

- Using standard EPP result code as listed in RFC 5730.

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2.2. Session Management

2.2.1. Account, Connection limit

- Only one account per Registrar
- When a client change password, all active session of this account will be disconnected.
- We do some rule for connection limitation
    - Limitation on number of conncurrent session from a client : MaxSessionPerClient
    - Limitation on number of conncurrent session from an account : MaxSessionPerAccount
    - Limitation on number of commands in one session :
    - Idle time and max living time
        - MaxIdleTime = 10 minute
        - MaxLivingTime = 24h
    -
- These rules may be changed during runtime depend on operation of the system.

2.2.2. Hello

2.2.2.1. Input data

<hello> is an empty element command to keep connection between client and server.

2.2.2.2. Format

```
<?xml version="1.0" encoding="utf-8"?>
<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">
      <hello/>
</epp>
```

2.2.2.3. Response

Response is a greeting messae

```
<?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>VNNIC EPP Server</svID>
<svDate>2013-12-16T07:12:11.0791</svDate>
<svcMenu>
```

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```
<version>1.0</version>
<lang>en</lang>
<lang>vi</lang>
<objURI>urn:ietf:params:xml:ns:domain-1.0</objURI>
<objURI>urn:ietf:params:xml:ns:contact-1.0</objURI>
<objURI>urn:ietf:params:xml:ns:host-1.0</objURI>
<svcExtension>
<extURI>http://srs.vnnic.vn/epp/extensions/vncontact-1-0</extURI>
</svcExtension>
</svcMenu>
<dcp>
<access>
<all/>
</access>
<statement>
<purpose>
<admin/>
<contact/>
<other/>
<prov/>
</purpose>
<recipient>
<other/>
<ours/>
<public/>
</recipient>
<retention>
<business/>
</retention>
</statement>
</dcp>
</greeting>
</epp>
```

2.2.3. Login

2.2.3.1. Input data

Parameters	EPP attribute	Requirement	Note
Client ID	<clID>	Required	- Refer to <clID> syntax
Password	<pw>	Required	- Password of Registrars in MD5 code
New Password	<newPW>	Option	- Ussing incase client want to change the current password
EPP version	<options>	Required	- Ussing 1.0

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	<version> </ options>		
Client language	<options> <lang> </ options>	Required	- Support en, vi
Namespaces	< svcs> <objURI> </ svcs>	Required	- Namespace URIs representing the objects (domain, contact)
EPP Extension	< svcs> < svcExtension > </ svcs>	Option	- Khai báo URI cho các EPP mở rộng đó.
Client Transaction ID	<clTRID>	Option	

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2.2.3.2. Example

- **Login:**

```
<?xml version="1.0" encoding="utf-8"?>
<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>ndkmn</clID>
                  <pw>passWD</pw>
                  <options>
                        <version>1.0</version>
                        <lang>en</lang>
                  </options>
                  <svcs>
                        <objURI>urn:ietf:params:xml:ns:domain-1.0</objURI>
                        <objURI>urn:ietf:params:xml:ns:contact-1.0</objURI>
                  </svcs>
            </login>
            <clTRID>cltTRID-1234</clTRID>
      </command>
</epp>
```

- **Change Password:**

```
<?xml version="1.0" encoding="utf-8"?>
<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>ndkmn</clID>
                  <pw>oldPasswd</pw>
                  <newPW>newPasswd/newPW>
                  <options>
                        <version>1.0</version>
                        <lang>en</lang>
                  </options>
                  <svcs>
                        <objURI>urn:ietf:params:xml:ns:domain-1.0</objURI>
                        <objURI>urn:ietf:params:xml:ns:contact-1.0</objURI>
                  </svcs>
            </login>
            <clTRID>cltTRID-1234</clTRID>
      </command>
</epp>
```

2.2.3.3. Response message

- Login successfully

```
<?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>
      <trID>
            <clTRID>ABC-12345</clTRID>
            <svTRID>54321-XYZ</svTRID>
      </trID>
</response>
</epp>
```

- Change password successfully

```
<?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! All active sesion have been
terminated </msg>
        </result>
```

```
        <trID>
            <clTRID>ABC-12345</clTRID>
            <svTRID>54321-XYZ</svTRID>
        </trID>
    </response>
</epp>
```

2.2.3.4. Result code

STT	Lý do	Mã lỗi	Ghi chú
1	Invalid input parameters	2005	
2	Invalid syntax	2001	
3	Invalid username /password	2200	
4	Invalid username /password counts over limitation	2501	
5	Over max session limitation	2502	
6	Missing parameters	2003	

2.2.4. Logout

2.2.4.1. Input data

Command is used to end a session with an EPP Server.

2.2.4.2. Example command

```
<?xml version="1.0" encoding="utf-8"?>
<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>
            <logout/>
      </command>
</epp>
```

2.2.4.3. Response message

- Logout success, end session:

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```
<?xml version="1.0" encoding="utf-8"?>
<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="1500">
                  <msg>Command completed successfully; ending session</msg>
            </result>
            <trID>
                  <svTRID>54322-XYZ</svTRID>
            </trID>
      </response>
</epp>
```

2.3. Domain Management

2.3.1. Overview

- .VN Domain LifeCycle

- 3 days after expiration, domain name still active.
- In pendingDelete status, domain name does not active in DNS, domain name still belong to the registrant
- Do not using “pendingCreate” status
- A domain will have a <clientTransferProhibited> status as default status after created.
- Period for renew : by year: 1-50
- Domain & Nameserver information
    - One domain name have 2-13 nameservers
    - If the nameservers is a subdomain of the domain name, at least one IP address (Ipv4 or Ipv6) is required
- Domain & Contact information
    - One registrant, one contact for admin, one for technical and one for billing contact is required
    - Contact must be belong to the registrar
- Fee will be collected immediately after a domain created
- Create and renew domain command is processed only if the deposite is higher than Registrar Deposite Limitation

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2.3.2. Command <domain:check>

2.3.2.1. Input data

Parameter	EPP attribute	Requirement	Note
Domain Name	<domain:name>	Required	Refer to domain name syntax Up to 5 domain name

2.3.2.2. Example command

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
<command>
    <check>
            <domain:check xmlns:domain="urn:ietf:params:xml:ns:domain-1.0">
                  <domain:name>tenmien2014010701.vn</domain:name>
                  <domain:name>tenmien2014010702.vn</domain:name>
                  <domain:name>tenmien2014010703.vn</domain:name>
                  <domain:name>tenmiendadao.vn</domain:name>
            </domain:check>
      </check>
<clTRID>NDK1-DOMAIN-CHECK-123456</clTRID>
  </command>
</epp>
```

2.3.2.3. Response message

- Example response message

```
<?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:chkData 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:cd>
<domain:name avail="0">tenmien2014010701.vn</domain:name>
<domain:reason xmlns:domain="urn:ietf:params:xml:ns:epp-1.0">In
use.</domain:reason>
</domain:cd>
<domain:cd>
<domain:name avail="0">tenmien2014010702.vn</domain:name>
<domain:reason xmlns:domain="urn:ietf:params:xml:ns:epp-1.0">In
use.</domain:reason>
</domain:cd>
<domain:cd>
<domain:name avail="1">tenmien2014010703.vn</domain:name>
</domain:cd>
```

```
<domain:cd>
<domain:name avail="0">tenmiendadao.vn</domain:name>
<domain:reason xmlns:domain="urn:ietf:params:xml:ns:epp-1.0">Contain
forbidden word: dadao.</domain:reason>
</domain:cd>
</domain:chkData>
</resData>
<trID>
<clTRID>NDK1-DOMAIN-CHECK-123456</clTRID>
<svTRID>VNNIC_203.119.8.161_1389082314733</svTRID>
</trID>
</response>
</epp>
```

2.3.2.4. Result code

N0	Reason	Code	Note
1	Invalid input parameters	2005	

2.3.3. Command <domain:info>

2.3.3.1. Rules

- The command is used to retrieve information associated with a domain object.
- If the querying client is the sponsoring client (the registrar who manage this domain object), all available information will returned.
- If the querying client is not the sponsoring client but have valid authorization information, all available information will returned.
- If the querying client is not the sponsoring client and the client does not provide valid authorization information, server will return an error code 2200
- If the querying client is not the sponsoring client and the client does not provide authorization information (without authorization information), server will return only some information , such as : DomainName, ROID, clID, createdDate, expiration Date ..

2.3.3.2. Input data

Parameter	EPP attribute	Requirement	Note
Domain name	<domain:name>	Required	

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Authorization information	<domain:authInfo> </domain:pw> </domain:authInfo>	Optional	

2.3.3.3. Example command

Request command with <domain:authInfo> :

```
<?xml version="1.0" encoding="UTF-8"?>
<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>
        <info>
            <domain:info
                xmln domain="urn:ietf:param xml:n domain-1.0"
xsi:schemaLocation="urn:ietf:param xml:n domain-1.0 domain-1.0.xsd">
                <domain:name>tenmien2014010702.vn</domain:name>
                <domain:authInfo>
                    <domain:pw>12345678</domain:pw>
                </domain:authInfo>
            </domain:info>
        </info>
        <clTRID>NDK1-DOMAIN-INFO-123456</clTRID>
    </command>
</epp>
```

Request command without <domain:authInfo> :

```
<?xml version="1.0" encoding="UTF-8"?>
<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>
        <info>
            <domain:info
                xmln domain="urn:ietf:param xml:n domain-1.0"
xsi:schemaLocation="urn:ietf:param xml:n domain-1.0 domain-1.0.xsd">
                <domain:name>tenmien2014010702.vn</domain:name>
            </domain:info>
        </info>
        <clTRID>NDK1-DOMAIN-INFO-123456</clTRID>
    </command>
</epp>
```

2.3.3.4. Response message

- Request from sponsoring client.

```
<?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>tenmien2014010702.vn</domain:name>
<domain:roid>DOMAIN-307</domain:roid>
<domain:status s="ok"/>
<domain:status s="clientTransferProhibited"/>
<domain:registrant>NDK1-OCONTACT-1</domain:registrant>
<domain:contact type="admin">NDK1-CONTACT-1</domain:contact>
<domain:contact type="tech">NDK1-CONTACT-1</domain:contact>
<domain:contact type="billing">NDK1-CONTACT-1</domain:contact>
<domain:ns>
<domain:hostAttr>
<domain:hostName>dns1.vnnic.vn</domain:hostName>
</domain:hostAttr>
<domain:hostAttr>
<domain:hostName>dns2.vnnic.vn</domain:hostName>
</domain:hostAttr>
</domain:ns>
<domain:clID>ndk1_epp</domain:clID>
<domain:crID>ndk1 epp</domain:crID>
<domain:crDate>2014-01-07T08:06:38.0488</domain:crDate>
<domain:exDate>2015-01-06T17:00:00.0000</domain:exDate>
<domain:authInfo>
<domain:pw>12345678</domain:pw>
</domain:authInfo>
</domain:infData>
</resData>
<trID>
<clTRID>NDK1-DOMAIN-INFO-123456</clTRID>
<svTRID>VNNIC_203.119.8.161_1395283835269</svTRID>
</trID>
</response>
</epp>
```

- If the querying client is not the sponsoring client but have valid authorization :

```
<?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>tenmien2014010702.vn</domain:name>
<domain:roid>DOMAIN-307</domain:roid>
<domain:status s="ok"/>
<domain:status s="clientTransferProhibited"/>
<domain:registrant>NDK1-OCONTACT-1</domain:registrant>
<domain:contact type="admin">NDK1-CONTACT-1</domain:contact>
<domain:contact type="tech">NDK1-CONTACT-1</domain:contact>
<domain:contact type="billing">NDK1-CONTACT-1</domain:contact>
<domain:ns>
<domain:hostAttr>
<domain:hostName>dns1.vnnic.vn</domain:hostName>
</domain:hostAttr>
<domain:hostAttr>
<domain:hostName>dns2.vnnic.vn</domain:hostName>
</domain:hostAttr>
</domain:ns>
<domain:clID>ndk1_epp</domain:clID>
<domain:crID>ndk1_epp</domain:crID>
<domain:crDate>2014-01-07T08:06:38.0488</domain:crDate>
<domain:exDate>2015-01-06T17:00:00.0000</domain:exDate>
<domain:authInfo>
<domain:pw>12345678</domain:pw>
</domain:authInfo>
</domain:infData>
</resData>
<trID>
<clTRID>NDK1-DOMAIN-INFO-123456</clTRID>
<svTRID>VNNIC_203.119.8.161_1395283607171</svTRID>
</trID>
</response>
</epp>
```

- If the querying client is not the sponsoring client, don't have authorization information

```
<?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>tenmien2014010702.vn</domain:name>
<domain:roid>DOMAIN-307</domain:roid>
<domain:status s="ok"/>
<domain:status s="clientTransferProhibited"/>
<domain:registrant>NDK1-OCONTACT-1</domain:registrant>
<domain:ns>
<domain:hostAttr>
<domain:hostName>dns1.vnnic.vn</domain:hostName>
```

```
</domain:hostAttr>
<domain:hostAttr>
<domain:hostName>dns2.vnnic.vn</domain:hostName>
</domain:hostAttr>
</domain:ns>
<domain:clID>ndk1_epp</domain:clID>
<domain:crDate>2014-01-07T08:06:38.0488</domain:crDate>
<domain:exDate>2015-01-06T17:00:00.0000</domain:exDate>
</domain:infData>
</resData>
<trID>
<clTRID>NDK1-DOMAIN-INFO-123456</clTRID>
<svTRID>VNNIC_203.119.8.161_1395283610030</svTRID>
</trID>
</response>
</epp>
```

2.3.3.5. Response codes

N0	Reason	Code	Note
1	Invalid domain name syntax	2005	
2	Invalid <domain:authInfo> value	2202	

2.3.4. Command <domain:create>

2.3.4.1. Input data

Parameter	EPP attribute	Requirement	Note
Domain name	<domain:name>	Required	
Period	<domain:period>	Required	
Authorization information	<domain:authInfo> </domain:pw> </domain:authInfo>	Required	
Name Servers	<domain:ns>	Required	

VNNIC EPP GATEWAY SPEC

	</domain:hostAttr> </domain:ns>		
Registrant	<domain:registrant>	Required	
Admin contact	<domain:contact type=”admin”>	Required	
Technical contact	<domain:contact type=”tech”>	Required	
Billing contact	<domain:contact type=”billing”>	Required	

2.3.4.2. Example command

```
<?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>tenmien2014010702.vn</domain:name>
            <domain:period unit="y">1</domain:period>
            <domain:ns>
                  <domain:hostAttr>
                        <domain:hostName>dns1.vnnic.vn</domain:hostName>
                  </domain:hostAttr>
                  <domain:hostAttr>
                        <domain:hostName>dns2.vnnic.vn</domain:hostName>
                  </domain:hostAttr>
            </domain:ns>
            <domain:registrant>NDK1-OCONTACT-1</domain:registrant>
                  <domain:contact type="admin">NDK1-CONTACT-
1</domain:contact>
                  <domain:contact type="tech">NDK1-CONTACT-1</domain:contact>
                  <domain:contact type="billing">NDK1-CONTACT-
1</domain:contact>
            <domain:authInfo>
                  <domain:pw>12345678</domain:pw>
            </domain:authInfo>
      </domain:create>
</create>
<clTRID>NDK1-DOMAIN-CREATE-123456</clTRID>
</command>
</epp>
```

2.3.4.3. Response message

Example <create> response

```
<?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:creData 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>tenmien2014010702.vn</domain:name>
<domain:crDate>2014-01-07T08:06:38.0798</domain:crDate>
<domain:exDate>2015-01-07T08:06:38.0798</domain:exDate>
</domain:creData>
</resData>
<trID>
<clTRID>NDK1-DOMAIN-CREATE-123456</clTRID>
<svTRID>VNNIC_203.119.8.161_1389081999044</svTRID>
</trID>
</response>
</epp>
```

2.3.4.4. Response codes

N0	Reason	Code	Note
1	Invalid input parameters	2005	
2	Domainname in list of subdomain level 2 ccTLD	2308	
3	Domainname in list of Reserved List or Prohibited List	2308	
4	Object exist	2302	
5	Duplicate <domain:hostName>	2306	
6	Invalid number of <domain:hostAttr> parameters	2308	
7	ContactID does not exist	2303	
8	ContactID is not belong to requesting client	2201	
9	Billing failure	2104	

VNNIC EPP GATEWAY

2.3.5. Command <domain:update>

2.3.5.1. Input data

Parameter	EPP attribute	Requirement	Note
Domain Name	<domain:name>	Required	
Authorization information	<domain:authInfo> </domain:pw> </domain:authInfo>	Optional	
Name Servers	<domain:ns> </domain:hostAttr> </domain:ns>	Optional	
Registrant	<domain:registrant>	Optional	
Admin contact	<domain:contact type=”admin”>	Optional	
Technical contact	<domain:contact type=”tech”>	Optional	
Billing contact	<domain:contact type=”billing”>	Optional	
Status	<domain:status s="clientHold"/>	Optional	
Status	<domain:status s="clientRenewProhibited"/>	Optional	
Status	<domain:status s="clientTransferProhibited"/>	Optional	
Status	<domain:status s="clientDeleteProhibited"/>	Optional	
Status	<domain:status s="clientUpdateProhibited"/>	Optional	

2.3.5.2. Example command

```
<?xml version="1.0" encoding="UTF-8"?>
<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>tenmien2014010702.vn</domain:name>
                <domain:add>
```

VNNIC EPP GATEWAY SPEC DRAFT

```
                    <domain:ns>
                       <domain:hostAttr>
                              <domain:hostName>ns1.abc.net
                              </domain:hostName>
                       </domain:hostAttr>
                    </domain:ns>
                    <domain:status s="clientHold">Expired</domain:status>
                </domain:add>
                <domain:rem>
                    <domain:ns>
                       <domain:hostAttr>
                              <domain:hostName>ns2.abc.net
                              </domain:hostName>
                       </domain:hostAttr>
                    </domain:ns>
                    <domain:status s="clientDeleteProhibited"/>
                </domain:rem>
                <domain:chg>
                    <domain:registrant>84008023_7B48149654A50C19B2A5302
                    </domain:registrant>
                    <domain:authInfo>
                        <domain:pw>2fooBAR</domain:pw>
                    </domain:authInfo>
                </domain:chg>
            </domain:update>
        </update>
        <clTRID>NDK1-DOMAIN-UPDATE-123456</clTRID>
    </command>
</epp>
```

2.3.5.3. Response message

- Response message example

```
<?xml version="1.0" encoding="UTF-8"?>
<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>
        <trID>
            <clTRID>NDK1-DOMAIN-UPDATE-123456</clTRID>
            <svTRID>VNNIC_203.119.8.161_1389081999054</svTRID>
        </trID>
    </response>
</epp>
```

2.3.5.4. Response codes

N0	Reason	Code	Note

1	Invalid input parameters	2005	
2	Authorization error	2201	
3	Prohibited status	2304	
4	Object does not exist	2303	
5	Data management policy violation	2308	

2.3.6. Command <domain:renew>

2.3.6.1. Input data

Parameter	EPP attribute	Requirement	Note
Domain Name	<domain:name>	Required	
Period	<domain:period>	Required	
Current Expiration Date	<domain:curExpDate>	Required	

2.3.6.2. Example command

```
<?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>
      <renew>
            <domain:renew 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>tenmien2014010702.vn</domain:name>
                  <domain:curExpDate>2015-01-07</domain:curExpDate>
                  <domain:period unit="y">1</domain:period>
            </domain:renew>
      </renew>
      <clTRID>NDK1-DOMAIN-RENEW-123456</clTRID>
</command>
</epp>
```

2.3.6.3. Response message

- Example response message

```
<?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">
```

GATEWAY SPEC DRAFT

```
<response>
<result code="1000">
<msg>Command completed successfully</msg>
</result>
<resData>
<domain:renData 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>tenmien2014010702.vn</domain:name>
<domain:exDate>2016-01-06T17:00:00.0000</domain:exDate>
</domain:renData>
</resData>
<trID>
<clTRID>NDK1-DOMAIN-RENEW-123456</clTRID>
<svTRID>VNNIC_203.119.8.161_1395284310749</svTRID>
</trID>
</response>
</epp>
```

2.3.6.4. Response codes

N0	Reason	Code	Note
1	Invalid input parameters	2005	
2	Authorization error	2201	
3	Object doesn't exist	2303	
4	Object status prohibits operation	2304	
5	Billing failure	2104	

2.3.7. Command <domain:transfer>

The EPP <transfer> command provides a query operation that allows a client to determine the real-time status of pending and completed transfer requests or a transform operation that allows a client to manage requests to transfer the sponsorship of a domain object.

VNNIC support fully "op" for <domain:tranfer> command : request, approve, reject, cancel,query.

Limitation for transfer request:

- T1 days after created
- T2 days before expired

VNNIC EPP GATEWAY SPEC

- Input parameters:
  - Domain Name
  - period (Required, default =1 years)
  - domain:authInfo
- Note: After a domain name transferred, all its contacts and registrant object still belong to the lost registrar, the gain registrar SHOULD implement <domain:update> to using their contacts objects.

2.3.7.1. Input data

- Op=”request”

Parameter	EPP attribute	Requirement	Note
Domain name	<domain:name>	Required	
Authorization information	<domain:authInfo> </domain:pw> </domain:authInfo>	Required	
Period	<domain:period>	Required	

- Op=”query”

Parameter	EPP attribute	Requirement	Note
Domain Name	<domain:name>	Required	
Authorization information	<domain:authInfo> </domain:pw> </domain:authInfo>	Required	

- Op = “approve”

Parameter	EPP attribute	Requirement	Note
Domain Name	<domain:name>	Required	

- Op = “reject”

Parameter	EPP attribute	Requirement	Note
Domain Name	<domain:name>	Required	

VNNIC EPP GATEWAY SPEC DRAFT

Reason	<domain:reason>	Optional	

- Op = “cancel”

Parameter	EPP attribute	Requirement	Note
Domain Name	<domain:name>	Required	
Reason	<domain:reason>	Optional	

2.3.7.2. Example command

- Transfer request

```
<?xml version="1.0" encoding="UTF-8"?>
<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>tenmien2014010702.vn</domain:name>
                <domain:period>2</domain:period>
                <domain:authInfo>
                    <domain:pw>12345678</domain:pw>
                </domain:authInfo>
            </domain:transfer>
        </transfer>
        <clTRID>NDK2-DOMAIN-TRANSFER-REQUEST-123456</clTRID>
    </command>
</epp>
```

- Transfer query

```
<?xml version="1.0" encoding="UTF-8"?>
<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="query">
            <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>tenmien2014010702.vn</domain:name>
                <domain:authInfo>
                  <domain:pw>12345678</domain:pw>
                <domain:authInfo>
            </domain:transfer>
        </transfer>
        <clTRID>NDK2-DOMAIN-TRANSFER-QUERY-123456</clTRID>
    </command>
```

```
</epp>
```

- Transfer approve

```
<?xml version="1.0" encoding="UTF-8"?>
<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="approve">
           <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>tenmien2014010702.vn</domain:name>
            </domain:transfer>
        </transfer>
        <clTRID>NDK1-DOMAIN-TRANSFER-APPROVE-123456</clTRID>
    </command>
</epp>
```

- Transfer reject

```
<?xml version="1.0" encoding="UTF-8"?>
<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="reject">
            <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>tenmien2014010702.vn</domain:name>
                <domain:reason>Reject</domain:reason>
            </domain:transfer>
        </transfer>
        <clTRID>NDK1-DOMAIN-TRANSFER-REJECT-123456</clTRID>
    </command>
</epp>
```

- Transfer cancel

```
<?xml version="1.0" encoding="UTF-8"?>
<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="cancel">
            <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>tenmien2014010702.vn</domain:name>
                <domain:reason>cancel</domain:reason>
            </domain:transfer>
        </transfer>
        <clTRID>NDK2-DOMAIN-TRANSFER-CANCEL-123456</clTRID>
    </command>
</epp>
```

2.3.7.3. Response message

a. Transfer request

- Response message example

```
<?xml version="1.0" encoding="UTF-8"?>
<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:trnData
                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>tenmien2014010702.vn</domain:name>
                <domain:trStatus>pending</domain:trStatus>
                <domain:reID>ndk2_epp</domain:reID>
                <domain:reDate>2014-03-11T04:29:08.0006</domain:reDate>
                <domain:acID>ndk1_epp</domain:acID>
                <domain:acDate>2014-03-16T04:29:08.0006</domain:acDate>
                <domain:exDate>2016-01-07T17:00:00.0000</domain:exDate>
            </domain:trnData>
        </resData>
        <trID>
            <clTRID>NDK2-DOMAIN-TRANSFER-REQUEST-123456</clTRID>
            <svTRID>VNNIC_203.119.8.161_1395284310749</svTRID>
        </trID>
    </response>
</epp>
```

b. Transfer query

- Response message example

```
<?xml version="1.0" encoding="utf-8"?>
<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:trnData
            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>tenmien2014010702.vn</domain:name>
            <domain:trStatus>pending</domain:trStatus>
            <domain:reID>ndk2_epp</domain:reID>
```

```
            <domain:reDate>2014-03-11T04:29:08.0006</domain:reDate>
            <domain:acID>ndk1-epp</domain:acID>
            <domain:exDate>2016-01-07T17:00:00.0000</domain:exDate>
          </domain:trnData>
      </resData>
      <trID>
         <clTRID>NDK2-DOMAIN-TRANSFER-QUERY-123456</clTRID>
         <svTRID>VNNIC_203.119.8.161_1394512724689</svTRID>
      </trID>
 </response>
</epp>
```

c. Transfer approve

- Response message example

```
<?xml version="1.0" encoding="utf-8"?>
<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:trnData 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>tenmien2014010702.vn</domain:name>
    <domain:trStatus>clientApproved</domain:trStatus>
    <domain:reID>ndk2_epp</domain:reID>
    <domain:reDate>2014-03-11T07:04:08.0413</domain:reDate>
    <domain:acID>ndk1_epp</domain:acID>
    <domain:exDate>2017-01-07T17:00:00.0000</domain:exDate>
   </domain:trnData>
  </resData>
  <trID>
   <clTRID>NDK1-DOMAIN-TRANSFER-APPROVE-123456</clTRID>
   <svTRID>VNNIC_203.119.8.161_1394521714639</svTRID>
  </trID>
 </response>
</epp>
```

d. Transfer reject

- Response message example

```
<?xml version="1.0" encoding="utf-8"?>
<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:trnData 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>tenmien2014010702.vn</domain:name>
    <domain:trStatus>clientRejected</domain:trStatus>
    <domain:reID>ndk2_epp</domain:reID>
    <domain:reDate>2014-03-11T06:59:26.0515</domain:reDate>
    <domain:acID>ndk1_epp</domain:acID>
    <domain:acDate>2014-03-11T07:02:37.0455</domain:acDate>
    <domain:exDate>2016-01-07T17:00:00.0000</domain:exDate>
   </domain:trnData>
  </resData>
  <trID>
   <clTRID>NDK1-DOMAIN-TRANSFER-REJECT-123456</clTRID>
   <svTRID>VNNIC_203.119.8.161_1394521358426</svTRID>
  </trID>
 </response>
</epp>
```

e. Transfer cancel

- Response message example

```
<?xml version="1.0" encoding="utf-8"?>
<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:trnData 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>tenmien2014010702.vn</domain:name>
    <domain:trStatus>clientCancelled</domain:trStatus>
    <domain:reID>ndk2_epp</domain:reID>
    <domain:reDate>2014-03-11T04:29:08.0006</domain:reDate>
    <domain:acID>ndk2_epp</domain:acID>
    <domain:acDate>2014-03-11T06:43:18.0864</domain:acDate>
    <domain:exDate>2016-01-07T17:00:00.0000</domain:exDate>
   </domain:trnData>
  </resData>
  <trID>
   <clTRID>NDK2-DOMAIN-TRANSFER-CANCEL-123456</clTRID>
   <svTRID>VNNIC_203.119.8.161_1394521358426</svTRID>
  </trID>
 </response>
</epp>
```

2.3.7.4. Response codes

N0	Reason	Code	Note
1	Input parameters	2005	

2	Authorization error	2201	
3	Object does not exist	2303	
4	Invalid authorization information	2202	
5	Object status prohibits operation	2304	
6	Object pending transfer	2301	
7	Object is not eligible for transfer	2106	

2.3.8. Command <domain:delete>

2.3.8.1. Input parameters

Parameter	EPP attribute	Requirement	Note
Tên miền	<domain:name>	Required	

2.3.8.2. Example command

```
<?xml version="1.0" encoding="UTF-8"?>
<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>
        <delete>
            <domain:delete
                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>tenmien2014010702.vn</domain:name>
            </domain:delete>
        </delete>
        <clTRID>NDK2-DOMAIN-TRANSFER-CANCEL-123456</clTRID>
    </command>
</epp>
```

2.3.8.3. Response message

- Response message example

```
<?xml version="1.0" encoding="UTF-8"?>
<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>
```

VNNIC EPP GATEWAY SPEC DRAFT

```
        </result>
        <trID>
            <clTRID>NDK2-DOMAIN-TRANSFER-CANCEL-123456</clTRID>
            <svTRID>VNNIC_203.119.8.161_1394524732815</svTRID>
        </trID>
    </response>
</epp>
```

2.3.8.4. Response codes

N0	Reason	Code	Note
1	Invalid input parameters	2005	
2	Object does not exist	2303	
3	Object status prohibits operation	2304	

2.4. Contact management

2.4.1. Overview

- Using all standard attributes of the contact object in RFC 5733 and an extension to manage organization and individual contacts.
- Do not support <contact:transfer>
- Contact is using only by the sponsoring registrar (who created this contact)
- VNNIC Contact extension as follow:

For oranization

```
      <extension>
            <vncontact:create
xmlns:vncontact="http://srs.vnnic.vn/epp/extensions/vncontact-1-0"
xsi:schemaLocation="http://srs.vnnic.vn/epp/extensions/vncontact-1-0
vncontact-1-0.xsd">
                  <vncontact:extInfo type="org">
                        <vncontact:intTraName>VNNIC</vncontact:intTraName>
                  </vncontact:extInfo>
            </vncontact:create>
      </extension>
```

For individual

VNNIC EPP GATEWAY SPEC DRAFT

```
      <extension>
            <vncontact:create
xmlns:vncontact="http://srs.vnnic.vn/epp/extensions/vncontact-1-0"
xsi:schemaLocation="http://srs.vnnic.vn/epp/extensions/vncontact-1-0
vncontact-1-0.xsd">
                  <vncontact:extInfo type="ind">
                        <vncontact:IDPP>0313269551</vncontact:IDPP>
                        <vncontact:gender>Nam</vncontact:gender>
                        <vncontact:birthDate>1985-04-20</vncontact:birthDate>
                        <vncontact:position>Chuyên viên</vncontact:position>
                  </vncontact:extInfo>
            </vncontact:create>
      </extension>
```

2.4.1.1. Response codes

N0	Reason	Code	Note
1	Parameter value syntax error	2005	
2	Authorization error	2201	
3	Object does not exist	2303	
4	Invalid authorization information	2202	
5	Required parameter missing	2003	
6	Object exists	2302	
7	Object status prohibits operation	2304	
8	Object association prohibits operation	2305	
9	Data management policy violation	2308	

2.4.2. Command <contact:check>

2.4.2.1. Input data

Parameter	EPP attribute	Requirement	Note
ContactID	<contact:id>	Required	

VNNIC EPP GATEWAY SPEC DRAFT

2.4.2.2. Example command

```
<?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>
<check>
<contact:check xmlns:contact="urn:ietf:params:xml:ns:contact-1.0"
xsi:schemaLocation="urn:ietf:params:xml:ns:contact-1.0 contact-1.0.xsd">
<contact:id>vnnic0000-0001</contact:id>
</contact:check>
</check>
<clTRID>NDK1-CONTACT-CHECK-123456</clTRID>
</command>
</epp>
```

2.4.2.3. Response message

- Object does not exist.

```
<?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>
<contact:chkData xmlns:contact="urn:ietf:params:xml:ns:contact-1.0"
xsi:schemaLocation="urn:ietf:params:xml:ns:contact-1.0 contact-1.0.xsd">
<contact:cd>
<contact:id avail="0" xmlns:contact="urn:ietf:params:xml:ns:epp-
1.0">vnnic0000-0001</contact:id>
</contact:cd>
<contact:cd>
</contact:chkData>
</resData>
<trID>
<clTRID>NDK1-CONTACT-CHECK-123456</clTRID>
<svTRID>VNNIC_203.119.8.161_1394503434203</svTRID>
</trID>
</response>
</epp>
```

- Object exist.

```
<?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>
<contact:chkData xmlns:contact="urn:ietf:params:xml:ns:contact-1.0"
xsi:schemaLocation="urn:ietf:params:xml:ns:contact-1.0 contact-1.0.xsd">
<contact:cd>
<contact:id avail="1" xmlns:contact="urn:ietf:params:xml:ns:epp-
1.0">vnnic0000-0001</contact:id>
</contact:cd>
<contact:cd>
</contact:chkData>
</resData>
<trID>
<clTRID>NDK1-CONTACT-CHECK-123456</clTRID>
<svTRID>VNNIC_203.119.8.161_1394503434203</svTRID>
</trID>
</response>
</epp>
```

2.4.3. Command <contact:info>

2.4.3.1. Rules

- The command is used to retrieve information associated with a contact object.
- If the querying client is the sponsoring client (the registrar who manage this contact object), all available information will returned.
- If the querying client is not the sponsoring client but have valid authorization information, all available information will returned.
- If the querying client is not the sponsoring client and the client does not provide valid authorization information, server will return an error code 2200
- If the querying client is not the sponsoring client and the client does not provide authorization information (without authorization information), server will return limited information , such as <contact:name>, ..

2.4.3.2. Input parameters

Parameter	EPP attribute	Requirement	Note
ContactID	<contact:id>	Required	
Authorization information	<contact:authInfo>	Optional	

2.4.3.3. Example command

- Request with <contact:authInfo>

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
<command>
<info>
```

```
 <contact:info
  xmlns:contact="urn:ietf:params:xml:ns:contact-1.0">
      <contact:id>vnnic0000-0001</contact:id>
      <contact:authInfo>
            <contact:pw>12345678</contact:pw>
      </contact:authInfo>
 </contact:info>
</info>
<clTRID>NDK1-CONTACT-INFO-123456</clTRID>
</command>
</epp>
```

- Request without <contact:authInfo>

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
<command>
<info>
 <contact:info
  xmlns:contact="urn:ietf:params:xml:ns:contact-1.0">
   <contact:id>vnnic0000-0001</contact:id>
 </contact:info>
</info>
<clTRID>NDK1-CONTACT-INFO-123456</clTRID>
</command>
</epp>
```

2.4.3.4. Response message

Client is not the sponsoring client, without authorization information

```
<?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>
<contact:infData xmlns:contact="urn:ietf:params:xml:ns:contact-1.0"
xsi:schemaLocation="urn:ietf:params:xml:ns:contact-1.0 contact-1.0.xsd">
<contact:id>vnnic0000-0001</contact:id>
<contact:roid>CONTACT-780</contact:roid>
<contact:postalInfo type="int">
<contact:name>Trung TÃ¢m Internet Viá»‡t Nam</contact:name>
</contact:postalInfo>
<contact:clID>netnam_epp</contact:clID>
</contact:infData>
</resData>
<trID>
<clTRID>ABC-12345</clTRID>
<svTRID>VNNIC_203.119.8.161_1395287295933</svTRID>
```

```
</trID>
</response>
</epp>
```

Client is not the sponsoring client, have authorization information

- For organization

```
<?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>
<contact:infData xmlns:contact="urn:ietf:params:xml:ns:contact-1.0"
xsi:schemaLocation="urn:ietf:params:xml:ns:contact-1.0 contact-1.0.xsd">
<contact:id>vnnic0000-0002</contact:id>
<contact:roid>CONTACT-779</contact:roid>
<contact:status s="ok"/>
<contact:postalInfo type="int">
<contact:name>Nguyễn Văn A</contact:name>
<contact:org>Công ty ABC</contact:org>
<contact:addr>
<contact:street>Dương Đình Nghệ</contact:street>
<contact:city>Hà Nội</contact:city>
<contact:sp/>
<contact:pc/>
<contact:cc>VN</contact:cc>
</contact:addr>
</contact:postalInfo>
<contact:voice>+84.123456789</contact:voice>
<contact:fax>+84.31231232</contact:fax>
<contact:email>info@vnnic.vn</contact:email>
<contact:clID>netnam epp</contact:clID>
<contact:crID>netnam_epp</contact:crID>
<contact:crDate>2014-03-11T01:24:23.0565</contact:crDate>
<contact:authInfo>
<contact:pw>12345678</contact:pw>
</contact:authInfo>
<contact:disclose flag="0">
<contact:fax/>
</contact:disclose>
</contact:infData>
</resData>
<extension>
<vncontact:infData
xmlns:vncontact="http://srs.vnnic.vn/epp/extensions/vncontact-1-0"
xsi:schemaLocation="http://srs.vnnic.vn/epp/extensions/vncontact-1-0
vncontact-1-0.xsd">
<vncontact:extInfo type="org">
<vncontact:intTraName>VNNIC</vncontact:intTraName>
</vncontact:extInfo>
</vncontact:infData>
```

```
</extension>
<trID>
<clTRID>NDK1-CONTACT-INFO-123456</clTRID>
<svTRID>VNNIC_203.119.8.161_1394503733738</svTRID>
</trID>
</response>
</epp>
```

- For individual

```
<?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>
<contact:infData xmlns:contact="urn:ietf:params:xml:ns:contact-1.0"
xsi:schemaLocation="urn:ietf:params:xml:ns:contact-1.0 contact-1.0.xsd">
<contact:id>vnnic0000-0002</contact:id>
<contact:roid>CONTACT-779</contact:roid>
<contact:status s="ok"/>
<contact:postalInfo type="int">
<contact:name>Nguyễn Văn A</contact:name>
<contact:org>Công ty ABC</contact:org>
<contact:addr>
<contact:street>Dương Đình Nghệ</contact:street>
<contact:city>Hà Nội</contact:city>
<contact:sp/>
<contact:pc/>
<contact:cc>VN</contact:cc>
</contact:addr>
</contact:postalInfo>
<contact:voice>+84.123456789</contact:voice>
<contact:fax>+84.31231232</contact:fax>
<contact:email>info@vnnic.vn</contact:email>
<contact:clID>netnam_epp</contact:clID>
<contact:crID>netnam_epp</contact:crID>
<contact:crDate>2014-03-11T01:24:23.0565</contact:crDate>
<contact:authInfo>
<contact:pw>12345678</contact:pw>
</contact:authInfo>
<contact:disclose flag="0">
<contact:fax/>
</contact:disclose>
</contact:infData>
</resData>
<extension>
<vncontact:infData
xmlns:vncontact="http://srs.vnnic.vn/epp/extensions/vncontact-1-0"
xsi:schemaLocation="http://srs.vnnic.vn/epp/extensions/vncontact-1-0
vncontact-1-0.xsd">
<vncontact:extInfo type="ind">
<vncontact:IDPP>0313269551</vncontact:IDPP>
<vncontact:gender>Nam</vncontact:gender>
```

```
<vncontact:birthDate>1985-04-19</vncontact:birthDate>
<vncontact:position>Chuyên viên</vncontact:position>
</vncontact:extInfo>
</vncontact:infData>
</extension>
<trID>
<clTRID>NDK1-CONTACT-INFO-123456</clTRID>
<svTRID>VNNIC_203.119.8.161_1394503733738</svTRID>
</trID>
</response>
</epp>
```

Client is the sponsoring client, all relevant information will return

- For organization

```
<?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>
<contact:infData xmlns:contact="urn:ietf:params:xml:ns:contact-1.0"
xsi:schemaLocation="urn:ietf:params:xml:ns:contact-1.0 contact-1.0.xsd">
<contact:id>vnnic0000-0002</contact:id>
<contact:roid>CONTACT-779</contact:roid>
<contact:status s="ok"/>
<contact:postalInfo type="int">
<contact:name>Nguyễn Văn A</contact:name>
<contact:org>Công ty ABC</contact:org>
<contact:addr>
<contact:street>Dương Đình Nghệ</contact:street>
<contact:city>Hà Nội</contact:city>
<contact:sp/>
<contact:pc/>
<contact:cc>VN</contact:cc>
</contact:addr>
</contact:postalInfo>
<contact:voice>+84.123456789</contact:voice>
<contact:fax>+84.31231232</contact:fax>
<contact:email>info@vnnic.vn</contact:email>
<contact:clID>netnam_epp</contact:clID>
<contact:crID>netnam_epp</contact:crID>
<contact:crDate>2014-03-11T01:24:23.0565</contact:crDate>
<contact:authInfo>
<contact:pw>12345678</contact:pw>
</contact:authInfo>
<contact:disclose flag="0">
<contact:fax/>
</contact:disclose>
</contact:infData>
```

```
</resData>
<extension>
<vncontact:infData
xmlns:vncontact="http://srs.vnnic.vn/epp/extensions/vncontact-1-0"
xsi:schemaLocation="http://srs.vnnic.vn/epp/extensions/vncontact-1-0
vncontact-1-0.xsd">
<vncontact:extInfo type="org">
<vncontact:intTraName>VNNIC</vncontact:intTraName>
</vncontact:extInfo>
</vncontact:infData>
</extension>
<trID>
<clTRID>NDK1-CONTACT-INFO-123456</clTRID>
<svTRID>VNNIC_203.119.8.161_1394503733738</svTRID>
</trID>
</response>
</epp>
```

- For individual

```
<?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>
<contact:infData xmlns:contact="urn:ietf:params:xml:ns:contact-1.0"
xsi:schemaLocation="urn:ietf:params:xml:ns:contact-1.0 contact-1.0.xsd">
<contact:id>vnnic0000-0002</contact:id>
<contact:roid>CONTACT-779</contact:roid>
<contact:status s="ok"/>
<contact:postalInfo type="int">
<contact:name>Nguyễn Văn A</contact:name>
<contact:org>Công ty ABC</contact:org>
<contact:addr>
<contact:street>Dương Đình Nghệ</contact:street>
<contact:city>Hà Nội</contact:city>
<contact:sp/>
<contact:pc/>
<contact:cc>VN</contact:cc>
</contact:addr>
</contact:postalInfo>
<contact:voice>+84.123456789</contact:voice>
<contact:fax>+84.31231232</contact:fax>
<contact:email>info@vnnic.vn</contact:email>
<contact:clID>netnam_epp</contact:clID>
<contact:crID>netnam_epp</contact:crID>
<contact:crDate>2014-03-11T01:24:23.0565</contact:crDate>
<contact:authInfo>
<contact:pw>12345678</contact:pw>
</contact:authInfo>
<contact:disclose flag="0">
<contact:fax/>
</contact:disclose>
```

```
</contact:infData>
</resData>
<extension>
<vncontact:infData
xmlns:vncontact="http://srs.vnnic.vn/epp/extensions/vncontact-1-0"
xsi:schemaLocation="http://srs.vnnic.vn/epp/extensions/vncontact-1-0
vncontact-1-0.xsd">
<vncontact:extInfo type="ind">
<vncontact:IDPP>0313269551</vncontact:IDPP>
<vncontact:gender>Nam</vncontact:gender>
<vncontact:birthDate>1985-04-19</vncontact:birthDate>
<vncontact:position>Chuyên viên</vncontact:position>
</vncontact:extInfo>
</vncontact:infData>
</extension>
<trID>
<clTRID>NDK1-CONTACT-INFO-123456</clTRID>
<svTRID>VNNIC_203.119.8.161_1394503733738</svTRID>
</trID>
</response>
</epp>
```

2.4.4. Command <contact:create>

2.4.4.1. Input data

Parameter	EPP attribute	Requirement	Note
ID Contact	<contact:id>	Required	
Internationalized or localized address type	<contact: postalInfo type=”loc/int”>	Required	
Registrant or Contact Name	<contact:name>	Required	
Organization name	<contact:org>	Required	
Address	<contact:street>	Required	
City	<contact:city>	Required	
Country code	<contact:cc>	Required	
Phone number	<contact:voice>	Required	

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Fax number	<contact:fax>	Optional	
Email Address	<contact:email>	Required	
Data disclosure	<contact:disclose flag=”0/1”>	Required	
Extension			
Contact type (organization or individual)	<vncontact: extInfo type=”ind/org”>	Optional	
Organization Trade name	<vncontact:intTraName>	Optional	
Iditification or Passport number	<vncontact: IDPP>	Optional	
Gender	<vncontact: gender>	Optional	
Date of birth	<vncontact: birthDate>	Optional	
Working Possition	<vncontact:position>	Optional	

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2.4.4.2. Example command

- Create an individual contact:

```
<?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>
      <contact:create xmlns:contact="urn:ietf:params:xml:ns:contact-1.0"
xsi:schemaLocation="urn:ietf:params:xml:ns:contact-1.0 contact-1.0.xsd">
            <contact:id>vnnic0001-0002</contact:id>
            <contact:postalInfo type="int">
                  <contact:name>Nguyễn Văn A</contact:name>
                  <contact:org>Công ty ABC</contact:org>
                  <contact:addr>
                        <contact:street>Dương Đình Nghệ</contact:street>
                        <contact:city>Hà Nội</contact:city>
                        <contact:cc>VN</contact:cc>
                  </contact:addr>
            </contact:postalInfo>
            <contact:voice>+84.123456789</contact:voice>
            <contact:fax>+84.31231232</contact:fax>
```

```
            <contact:email>info@vnnic.vn</contact:email>
            <contact:authInfo>
                  <contact:pw>12345678</contact:pw>
            </contact:authInfo>
            <contact:disclose flag="0">
                  <contact:fax/>
            </contact:disclose>
      </contact:create>
</create>
<extension>
      <vncontact:create
xmlns:vncontact="http://srs.vnnic.vn/epp/extensions/vncontact-1-0"
xsi:schemaLocation="http://srs.vnnic.vn/epp/extensions/vncontact-1-0
vncontact-1-0.xsd">
            <vncontact:extInfo type="ind">
                  <vncontact:IDPP>0313269551</vncontact:IDPP>
                  <vncontact:gender>Nam</vncontact:gender>
                  <vncontact:birthDate>1985-04-20</vncontact:birthDate>
                  <vncontact:position>Chuyên viên</vncontact:position>
            </vncontact:extInfo>
      </vncontact:create>
</extension>
<clTRID>NDK1-CONTACT-CREATE-123456</clTRID>
</command>
</epp>
```

- Create an organization contact:

```
<?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>
      <contact:create xmlns:contact="urn:ietf:params:xml:ns:contact-1.0"
xsi:schemaLocation="urn:ietf:params:xml:ns:contact-1.0 contact-1.0.xsd">
            <contact:id>vnnic0001-0001</contact:id>
            <contact:postalInfo type="int">
                  <contact:name>Trung Tâm Internet Việt Nam</contact:name>
                  <contact:org>Bộ Thông tin và Truyền Thông</contact:org>
                  <contact:addr>
                        <contact:street>18 Nguyễn Du</contact:street>
                        <contact:city>Hà Nội</contact:city>
                        <contact:cc>VN</contact:cc>
                  </contact:addr>
            </contact:postalInfo>
            <contact:voice>+84.123456789</contact:voice>
            <contact:fax>+84.31231232</contact:fax>
            <contact:email>info@vnnic.vn</contact:email>
            <contact:authInfo>
                  <contact:pw>12345678</contact:pw>
            </contact:authInfo>
            <contact:disclose flag="0">
                  <contact:fax/>
            </contact:disclose>
      </contact:create>
</create>
```

```
<extension>
      <vncontact:create
xmlns:vncontact="http://srs.vnnic.vn/epp/extensions/vncontact-1-0"
xsi:schemaLocation="http://srs.vnnic.vn/epp/extensions/vncontact-1-0
vncontact-1-0.xsd">
            <vncontact:extInfo type="org">
                  <vncontact:intTraName>VNNIC</vncontact:intTraName>
            </vncontact:extInfo>
      </vncontact:create>
</extension>
<clTRID>NDK1-CONTACT-CREATE-123456</clTRID>
</command>
</epp>
```

2.4.4.3. Response message

- Example response message:

```
<?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>
<contact:creData xmlns:contact="urn:ietf:params:xml:ns:contact-1.0"
xsi:schemaLocation="urn:ietf:params:xml:ns:contact-1.0 contact-1.0.xsd">
<contact:id>vnnic0001-0001</contact:id>
<contact:crDate>2014-03-11T01:40:13.0088</contact:crDate>
</contact:creData>
</resData>
<trID>
<clTRID>NDK1-CONTACT-CREATE-123456</clTRID>
<svTRID>VNNIC_203.119.8.161_1395287295933</svTRID>
</trID>
</response>
</epp>
```

2.4.5. Command <contact:update>

This command provides a transform operation that allows a client to modify the attributes of a contact object already existed.

2.4.5.1. Input data

- Refer to <contact:create>
- Do not allow change attribute <vncontact: extInfo type=”ind/org”>

2.4.5.2. Example command

- For organization

```
<?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>
            <contact:update xmlns:contact="urn:ietf:params:xml:ns:contact-
1.0" xsi:schemaLocation="urn:ietf:params:xml:ns:contact-1.0 contact-1.0.xsd">
                  <contact:id>vnnic0000-0002</contact:id>
                  <contact:add>
                        <contact:status s="clientUpdateProhibited"/>
                        <contact:status s="clientDeleteProhibited"/>
                  </contact:add>
                  <contact:chg>
                        <contact:postalInfo type="int">
                              <contact:addr>
                                    <contact:city>Hà Nội</contact:city>
                                    <contact:cc>VN</contact:cc>
                              </contact:addr>
                        </contact:postalInfo>
                  </contact:chg>
            </contact:update>
      </update>
      <extension>
      <vncontact:create
xmlns:vncontact="http://srs.vnnic.vn/epp/extensions/vncontact-1-0"
xsi:schemaLocation="http://srs.vnnic.vn/epp/extensions/vncontact-1-0
vncontact-1-0.xsd">
            <vncontact:extInfo type="org">
                  <vncontact:intTraName>VNNIC1</vncontact:intTraName>
            </vncontact:extInfo>
      </vncontact:create>
</extension>
      <clTRID>NDK1-CONTACT-UPDATE-123456</clTRID>
</command>
</epp>
```

- For individual

```
<?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>
            <contact:update xmlns:contact="urn:ietf:params:xml:ns:contact-
1.0" xsi:schemaLocation="urn:ietf:params:xml:ns:contact-1.0 contact-1.0.xsd">
                  <contact:id>vnnic0000-0002</contact:id>
                  <contact:add>
                        <contact:status s="clientUpdateProhibited"/>
                        <contact:status s="clientDeleteProhibited"/>
                  </contact:add>
                  <contact:chg>
                        <contact:postalInfo type="int">
                              <contact:addr>
                                    <contact:city>Hà Nội</contact:city>
                                    <contact:cc>VN</contact:cc>
```

```
                              </contact:addr>
                        </contact:postalInfo>
                  </contact:chg>
            </contact:update>
      </update>
      <extension>
            <vncontact:update
xmlns:vncontact="http://srs.vnnic.vn/epp/extensions/vncontact-1-0"
xsi:schemaLocation="http://srs.vnnic.vn/epp/extensions/vncontact-1-0
vncontact-1-0.xsd">
                  <vncontact:extInfo type="ind">
                        <vncontact:IDPP>0313269551</vncontact:IDPP>
                        <vncontact:gender>Nam</vncontact:gender>
                        <vncontact:birthDate>1985-04-20</vncontact:birthDate>
                        <vncontact:position>Chuyên viên</vncontact:position>
                  </vncontact:extInfo>
            </vncontact:update>
      </extension>
      <clTRID>NDK1-CONTACT-UPDATE-123456</clTRID>
</command>
</epp>
```

2.4.5.3. Response message

- Example response message

```
<?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>
<contact:creData xmlns:contact="urn:ietf:params:xml:ns:contact-1.0"
xsi:schemaLocation="urn:ietf:params:xml:ns:contact-1.0 contact-1.0.xsd">
<contact:id>vnnic0000-0004</contact:id>
<contact:crDate>2014-03-11T01:40:13.0088</contact:crDate>
</contact:creData>
</resData>
<trID>
<clTRID>NDK1-CONTACT-UPDATE-123456</clTRID>
<svTRID>VNNIC_203.119.8.161_1394502013088</svTRID>
</trID>
</response>
</epp>
```

2.4.6. Command <contact:delete>

2.4.6.1. Input data

Parameter	EPP attribute	Requirement	Note

ContactID	<contact:id>	Required	

2.4.6.2. Example command

```
<?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>
      <delete>
            <contact:delete xmlns:contact="urn:ietf:params:xml:ns:contact-
1.0" xsi:schemaLocation="urn:ietf:params:xml:ns:contact-1.0 contact-1.0.xsd">
                  <contact:id>vnnic0000-0006</contact:id>
            </contact:delete>
      </delete>
      <clTRID>NDK1-CONTACT-DELETE-123456</clTRID>
</command>
</epp>
```

2.4.6.3. Response message

- Example response message

```
<?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>
<trID>
<clTRID>NDK1-CONTACT-DELETE-123456</clTRID>
<svTRID>VNNIC_203.119.8.161_1394506842930</svTRID>
</trID>
</response>
</epp>
```

2.5. Message poll management

2.5.1. Overview

- This command is used to discover and retrieve service messages queued by a server for each registrar.
- Have limitation on Number of Message (m < M = MaximumMessagePoll)
- Have limitation on Message Life Time count by days (t < L = MaximumMessageLife Time)

2.5.2. Command <poll op=”req”>

2.5.2.1. Input data

2.5.2.2. Example command

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
      <command>
            <poll op="req"/>
            <clTRID>NDK1-POLL-123456</clTRID>
      </command>
</epp>
```

2.5.2.3. Response message

- Empty queue:

```
      <?xml version="1.0" encoding="UTF-8" standalone="no"?>
   <epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
     <response>
       <result code="1301">
         <msg>Command completed successfully; ack to dequeue</msg>
       </result>
       <msgQ count="0" >
         <msg>Empty queue.</msg>
       </msgQ>
       <trID>
         <clTRID>ABC-12345</clTRID>
         <svTRID>54321-XYZ</svTRID>
       </trID>
     </response>
   </epp>
```

- Normal case, have message in queue:

```
      <?xml version="1.0" encoding="UTF-8" standalone="no"?>
   <epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
     <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">
           <obj:name>example.com</obj:name>
           <obj:trStatus>pending</obj:trStatus>
           <obj:reID>ClientX</obj:reID>
           <obj:reDate>08/06/2000 22:00:00</obj:reDate>
           <obj:acID>ClientY</obj:acID>
           <obj:acDate>13/06/2000 10:05:34</obj:acDate>
```

```
            <obj:exDate>08/09/2002 00:00:00</obj:exDate>
          </obj:trnData>
        </resData>
        <trID>
          <clTRID>ABC-12345</clTRID>
          <svTRID>54321-XYZ</svTRID>
        </trID>
      </response>
    </epp>
```

2.5.3. Command <poll op=”ack” >

2.5.3.1. Input data

Parameter	EPP attribute	Requirement	Note
Message ID	<poll op=”ack” msgID=”xxxxx”>	Required	

2.5.3.2. Example command

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
      <command>
            <poll op="ack" msgID="12345"/>
            <clTRID>ABC-12346</clTRID>
      </command>
</epp>
```

2.5.3.3. Response message

- Example message response:

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
      <response>
            <result code="1000">
                  <msg>Command completed successfully</msg>
            </result>
            <msgQ count="4" id="12345"/>
            <trID>
                  <clTRID>ABC-12346</clTRID>
                  <svTRID>54322-XYZ</svTRID>
            </trID>
      </response>
</epp>
```

2.5.4. Poll message from Registry

- All change on objects belong to registrar from Registry should be noticed to Registrars through <poll> messages, Registrar have to use <info> command to get detail information of updated objects.
- All template here is about content in tag <resData></resData> of <poll> messages

2.5.4.1. Domain object deleted by Registry

- Poll message

```
<resData>
DOMAIN=<domainName>; ROID=<roid>; ACTION=<delete>; ACTIONBY=<actionBy>;
ACTIONDATE=<actionDate>; NOTE=<note>.
</resData>
```

- With
  - <domainName>: The domain name of deleted domain object
  - <roid>: roid value of this domain object
  - <actionBy>: Actor
  - <actionDate> : Action time, in standard format : “yyyy-MM-dd'T'HH':'mm':'ss'.'SSSS"
  - <note>: Comment of registry about this action
- Example:

```
<resData>
DOMAIN=domainabc.com.vn; ROID=DOMAIN-007; ACTION=delete; ACTIONBY=registry;
ACTIONDATE=2014-01-07T08:06:38.0488; NOTE=Due to expiration.
</resData>
```

2.5.4.2. Domain object updated by Registry

- Poll message

```
<resData>
DOMAIN=<domainName>; ROID=<roid>; ACTION=<update>; ACTIONBY=<actionBy>;
ACTIONDATE=<actionDate >; NOTE=<note>
<resData>
```

- With
  - <domainName>: The domain name of updated domain object
  - <roid>: roid value of this domain object
  - <actionBy>: Actor
  - <actionDate> : Action time, in standard format : “yyyy-MM-dd'T'HH':'mm':'ss'.'SSSS"
  - <note>: Comment of registry about this action
- Example:

```
<resData>
DOMAIN=domainabc.com.vn; ROID=DOMAIN-006; ACTION=update; ACTIONBY=registry;
ACTIONDATE=2014-01-07T08:06:38.0488; NOTE=Update by VNNIC as request from
Registrar
</resData>
```

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2.5.4.3. Domain transfer action by Registry

- Incase of approve or reject a domain object in pendingTransfer status, the message poll information is the same in normal case, acted by Registrar.

2.5.4.4. Contact object deleted by Registry

- Poll message

```
<resData>
CONTACT=<ContactID>; ROID=<roid>; ACTION=<delete>; ACTIONBY=<actionBy>;
ACTIONDATE=<actionDate>; NOTE=<note>
</resData>
```

- With
  - <ContactID>: The ContactID of deleted contact object
  - <roid>: roid value of this contact object
  - <actionBy>: Actor
  - <actionDate> : Action time, in standard format : “yyyy-MM-dd'T'HH':'mm':'ss'.'SSSS"
  - <note>: Comment of registry about this action
- Example:

```
<resData>
CONTACT=NDKA-201407160001; ROID=CONTACT-000>; ACTION=delete;
ACTIONBY=registry; ACTIONDATE=2014-07-17T08:06:38.0488; NOTE=Contact not link
to any domain
</resData>
```

2.5.4.5. Contact object updated by Registry

- Poll message

```
<resData>
CONTACT=<ContactID>; ROID=<roid>; ACTION=<UPDATE>; ACTIONBY=<actiondBy>;
ACTIONDATE=<actionDate>; NOTE=<note>
</resData>
```

- With
  - <ContactID>: The ContactID of updated contact object
  - <roid>: roid value of this contact object
  - <actionBy>: Actor
  - <actionDate> : Action time, in standard format : “yyyy-MM-dd'T'HH':'mm':'ss'.'SSSS"
  - <note>: Comment of registry about this action
- Example:

```
<resData>
```

```
CONTACT=NDKA-201407160001; ROID=CONTACT-0008; ACTION=update;
ACTIONBY=registry; ACTIONDATE=2014-07-17T08:06:38.0488; NOTE=Update status of
contact
</resData>
```

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Part 3. Mapping EPP to VNNIC domain name tasks.

3.1. Create a domain name

3.1.1. Step by step

Step	Description	EPP command	Requirement
1.	Check if the domain name is available	<domain:check>	Optional
2.	- Check if all relevant contacts are existed - Update contact information if necessary - Create all relevant contacts if necessary	<contact:check> <contact:info> <contact:update> <contact:create>	Optional
3.	Created domain name	<domain:create>	Required

3.1.2. Notes

3.1.2.1. If the registrant is an organization

Create domain with <domain:registrant> is a contact object which having <vncontact:extInfo type=”org”>

3.1.2.2. If the registrant is an individual

Create domain with <domain:registrant> is a contact object which having <vncontact:extInfo type=”ind”>

3.1.2.3. If using self delegate name server

At least one Ipv4 or Ipv6 is required in this case, an example for a domain example.vn is:

```
<domain:ns>
<domain:hostAttr>
      <domain:hostName>dns1.vnnic.vn</domain:hostName>
</domain:hostAttr>
<domain:hostAttr>
      <domain:hostName>ns1.example.vn</domain:hostName>
      <domain:hostAddr ip="v4">1.1.1.1</domain:hostAddr>
      <domain:hostAddr ip="v6">2001:dc8::0:42</domain:hostAddr>
</domain:hostAttr>
</domain:ns>
```

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3.2. Renew a domain name

3.2.1. Step by step

Step	Description	EPP command	Requirement
1.	Check if the domain name is exist	<domain:check>	Optional
2.	Get domain name information, special current expired date.	<domain:info>	Optional
3.	Renew domain name	<domain:renew>	Required

3.3. Change domain or contact informations

3.3.1. Step by step

Step	Description	EPP command	Requirement
1.	Check if the domain name is exist	<domain:check>	Optional
2.	Get domain name informations	<domain:info>	Optional
3a.	Update domain object	<domain:update>	Required
3b.	Update contact object	<contact:check>	Optional
		<contact:info>	Optional
		<contact:update>	Required

3.3.2. Cases

3.3.2.1. Update Authorization information

```
<?xml version="1.0" encoding="UTF-8"?>
<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>example.com.vn</domain:name>
                <domain:chg>
                    <domain:authInfo>
                        <domain:pw>2fooBAR</domain:pw>
                    </domain:authInfo>
                </domain:chg>
            </domain:update>
        </update>
        <clTRID>ABC-12345-XYZ</clTRID>
    </command>
</epp>
```

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3.3.2.2. Change contact object for admin contact

```
<?xml version="1.0" encoding="UTF-8"?>
<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>example.com.vn</domain:name>
                <domain:chg>
                    <domain:contact type=”admin”>
                        84008023_DED1CB8D13D49E41F19E985
                    </domain:contact>
                </domain:chg>
            </domain:update>
        </update>
        <clTRID>ABC-12345-XYZ</clTRID>
    </command>
</epp>
```

3.3.2.3. Change contact object for technical contact

Do the same conmand like admin contact with parameters <domain:contact type=”admin”>

3.4. Change name servers

3.4.1. Step by step

Step	Description	EPP command	Requirement
1	Check if domain name exist	<domain:check>	Optional
2	Get domain name current informations	<domain:info>	Optional
3	Update new name server	<domain:update>	Required

3.5. Holding a domain name

3.5.1. Step by step

Step	Description	EPP command	Requirement
1.	Check if domain name exist	<domain:check>	Optional
2.	Get domain name current informations	<domain:info>	Optional
3.	Update domain status	<domain:update>	Required

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3.5.2. Example

Example command

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
  <command>
<update>
            <domain:update xmlns:domain="urn:ietf:params:xml:ns:domain-1.0">
                  <domain:name>test.com.vn </domain:name>
                  <domain:add>
                        <domain:status s="clientHold" lang="en">
                              Payment overdue.
                        </domain:status>
                  </domain:add>
            </domain:update>
      </update>
      <clTRID>ABC-12345</clTRID>
  </command>
</epp>
```

3.6. Restore/reactive a domain name

3.6.1. Step by step

Step	Description	EPP command	Requirement
1.	Check if domain name exist	<domain:check>	Optional
2.	Get domain name current informations	<domain:info>	Optional
3.	Update domain status	<domain:update>	Required

3.6.2. Example

Example command

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
<command>
<update>
                  <domain:update
                        xmlns:domain="urn:ietf:params:xml:ns:domain-1.0">
                        <domain:name>test.com.vn </domain:name>
                        <domain:rem>
                              <domain:status s="clientHold" lang="en">
                                    Payment overdue.
                              </domain:status>
                        </domain:rem>
                  </domain:update>
            </update>
            <clTRID>ABC-12345</clTRID>
      </command>
</epp>
```

3.7. Withdraw/ Delete a domain name

3.7.1. Step by step

Step	Description	EPP command	Requirement
1.	Check if domain name exist	<domain:check>	Optional
2.	Get domain name current status (not in delete Prohibited or Transfer status)	<domain:info>	Optional
3.	Delete domain object	<domain:delete>	Required

3.8. Transfer a domain name

3.8.1. Step by step

Step	Description	EPP command	Requirement
1.	Check if domain name exist	<domain:check>	Optional
2.	Get domain name current informations	<domain:info>	Optional
3.	The Lost Registrar unlock domain by remove clientTransferProhibited status	<domain:update>	Required
4.	The Gain Registrar request transfer	<domain:transfer op=”request”>	Required
5.	The Gain/Lost Registrar query transfer status	<domain:transfer op=”query”>	Optional
6.	The Lost Registrar approve transfer request	<domain:transfer op=”approve”>	Required

Example

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
<command>
<update>
                  <domain:update
                        xmlns:domain="urn:ietf:params:xml:ns:domain-1.0">
                        <domain:name>test.com.vn </domain:name>
                        <domain:rem>
                              <domain:status s="clientTransferProhibited"/>
                        </domain:rem>
                  </domain:update>
            </update>
            <clTRID>ABC-12345</clTRID>
      </command>
</epp>
```

GATEWAY SPEC DRAFT

Part 4. References

4.1. RFC documents

- Extensible Provisioning Protocol (EPP) RFC 5730

(http://www.ietf.org/rfc/rfc5730.txt)

- Extensible Provisioning Protocol (EPP) Domain Name Mapping FRC 5731

(http://www.ietf.org/rfc/rfc5731.txt)

- Extensible Provisioning Protocol (EPP) Host Mapping RFC 5732

(http://www.ietf.org/rfc/rfc5732.txt)

- Extensible Provisioning Protocol (EPP) Contact Mapping RFC 5733

(http://www.ietf.org/rfc/rfc5733.txt)

- Extensible Provisioning Protocol (EPP) Transport Over TCP RFC 5734

(http://www.ietf.org/rfc/rfc5734.txt)

- Guidelines for Extending the Extensible Provisioning Protocol (EPP) RFC

3735 (http://www.ietf.org/rfc/rfc3735.txt)

- Others relevant RFC …

4.2. EPP client opensource

- Verisign EPP Software Development Kits

http://www.verisign.com/information-services/namingservices/page_001081.html

- Source Forge

http://sourceforge.net/projects/epp-rtk

http://sourceforge.net/project/showfiles.php?group_id=26675

http://epp-rtk.sourceforge.net/epp-howto.html

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4.3. Apendix

4.3.1. List CityCode of Vietnam

N0	City Name	City Code
1	An Giang	AGG
2	Ba Ria - Vung Tau	BRV
3	Binh Duong	BDG
4	Binh Phuoc	BPC
5	Binh Thuan	BTN
6	Binh Dinh	BDH
7	Bac Lieu	BLN
8	Bac Giang	BGG
9	Bac Kan	BKN
10	Bac Ninh	BNH
11	Ben Tre	BTE
12	Cao Bang	CBG
13	Ca Mau	CMU
14	Can Tho	CTO
15	Gia Lai	GLI
16	Ha Giang	HAG
17	Ha Nam	HNM
18	Ha Noi	HNI
19	Ha Tinh	HTH
20	Hoa Binh	HBH
21	Hung Yen	HYN
22	Hai Duong	HDG
23	Hai Phong	HPG
24	Hau Giang	HUG
25	Khanh Hoa	KHN
26	Kien Giang	KGN
27	Kon Tum	KTM
28	Lai Chau	LCU
29	Long An	LAN
30	Lao Cai	LCI
31	Lam Dong	LDG
32	Lang Son	LSN
33	Nam Dinh	NDH
34	Nghe An	NAN

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35	Ninh Binh	NBH
36	Ninh Thuan	NTN
37	Phu Tho	PTO
38	Phu Yen	PYN
39	Quang Binh	QBH
40	Quang Nam	QNM
41	Quang Ngai	QNI
42	Quang Ninh	QNH
43	Quang Tri	QTI
44	Soc Trang	STG
45	Son La	SLA
46	TP HCM	HCM
47	Thanh Hoa	THA
48	Thai Binh	TBH
49	Thai Nguyen	TNN
50	Thua Thien Hue	TTH
51	Tien Giang	TGG
52	Tra Vinh	TVH
53	Tuyen Quang	TQG
54	Tay Ninh	TNH
55	Vinh Long	VLG
56	Vinh Phuc	VPC
57	Yen Bai	YBI
58	Dien Bien	DBN
59	Da Nang	DNG
60	Dak Lak	DLK
61	Dak Nong	DAG
62	Dong Nai	DNI
63	Dong Thap	DTP

4.3.2. Country Code

STT	Country Name	Country Code
1	Aaland Islands	AX
2	Afghanistan	AF
3	Albania	AL
4	Algeria	DZ
5	American Samoa	AS

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6	Andorra	AD
7	Angola	AO
8	Anguilla	AI
9	Antarctica	AQ
10	Antigua And Barbuda	AG
11	Argentina	AR
12	Armenia	AM
13	Aruba	AW
14	Australia	AU
15	Austria	AT
16	Azerbaijan	AZ
17	Bahamas	BS
18	Bahrain	BH
19	Bangladesh	BD
20	Barbados	BB
21	Belarus	BY
22	Belgium	BE
23	Belize	BZ
24	Benin	BJ
25	Bermuda	BM
26	Bhutan	BT
27	Bolivia	BO
28	Bosnia And Herzegovina	BA
29	Botswana	BW
30	Bouvet Island	BV
31	Brazil	BR
32	British Indian Ocean Territory	IO
33	Brunei Darussalam	BN
34	Bulgaria	BG
35	Burkina Faso	BF
36	Burundi	BI
37	Cambodia	KH
38	Cameroon	CM
39	Canada	CA
40	Cape Verde	CV
41	Cayman Islands	KY
42	Central African Republic	CF

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43	Chad	TD
44	Chile	CL
45	China	CN
46	Christmas Island	CX
47	Cocos (Keeling) Islands	CC
48	Colombia	CO
49	Comoros	KM
50	Congo	CG
51	Congo, The Democratic Republic Of The	CD
52	Cook Islands	CK
53	Costa Rica	CR
54	Croatia	HR
55	Cuba	CU
56	Cyprus	CY
57	Czech Republic	CZ
58	Cote DIvoire	CI
59	Denmark	DK
60	Djibouti	DJ
61	Dominica	DM
62	Dominican Republic	DO
63	Ecuador	EC
64	Egypt	EG
65	El Salvador	SV
66	Equatorial Guinea	GQ
67	Eritrea	ER
68	Estonia	EE
69	Ethiopia	ET
70	Falkland Islands (Malvinas)	FK
71	Faroe Islands	FO
72	Fiji	FJ
73	Finland	FI
74	France	FR
75	French Guiana	GF
76	French Polynesia	PF
77	French Southern Territories	TF
78	Gabon	GA
79	Gambia	GM

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80	Georgia	GE
81	Germany	DE
82	Ghana	GH
83	Gibraltar	GI
84	Greece	GR
85	Greenland	GL
86	Grenada	GD
87	Guadeloupe	GP
88	Guam	GU
89	Guatemala	GT
90	Guinea	GN
91	Guinea-bissau	GW
92	Guyana	GY
93	Haiti	HT
94	Heard Island And Mcdonald Islands	HM
95	Holy See (Vatican City State)	VA
96	Honduras	HN
97	Hong Kong	HK
98	Hungary	HU
99	Iceland	IS
100	India	IN
101	Indonesia	ID
102	Iran, Islamic Republic Of	IR
103	Iraq	IQ
104	Ireland	IE
105	Israel	IL
106	Italy	IT
107	Jamaica	JM
108	Japan	JP
109	Jordan	JO
110	Kazakhstan	KZ
111	Kenya	KE
112	Kiribati	KI
113	Korea, Democratic Peoples Republic Of	KP
114	Korea, Republic Of	KR
115	Kuwait	KW
116	Kyrgyzstan	KG

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117	Lao Peoples Democratic Republic	LA
118	Latvia	LV
119	Lebanon	LB
120	Lesotho	LS
121	Liberia	LR
122	Libyan Arab Jamahiriya	LY
123	Liechtenstein	LI
124	Lithuania	LT
125	Luxembourg	LU
126	Macao	MO
127	Macedonia, The Former Yugoslav Republic Of	MK
128	Madagascar	MG
129	Malawi	MW
130	Malaysia	MY
131	Maldives	MV
132	Mali	ML
133	Malta	MT
134	Marshall Islands	MH
135	Martinique	MQ
136	Mauritania	MR
137	Mauritius	MU
138	Mayotte	YT
139	Mexico	MX
140	Micronesia, Federated States Of	FM
141	Moldova, Republic Of	MD
142	Monaco	MC
143	Mongolia	MN
144	Montserrat	MS
145	Morocco	MA
146	Mozambique	MZ
147	Myanmar	MM
148	Namibia	NA
149	Nauru	NR
150	Nepal	NP
151	Netherlands	NL
152	Netherlands antilles	AN
153	New Caledonia	NC

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154	New Zealand	NZ
155	Nicaragua	NI
156	Niger	NE
157	Nigeria	NG
158	Niue	NU
159	Norfolk Island	NF
160	Northern Mariana Islands	MP
161	Norway	NO
162	Oman	OM
163	Pakistan	PK
164	Palau	PW
165	Palestinian Territory, Occupied	PS
166	Panama	PA
167	Papua New Guinea	PG
168	Paraguay	PY
169	Peru	PE
170	Philippines	PH
171	Pitcairn	PN
172	Poland	PL
173	Portugal	PT
174	Puerto Rico	PR
175	Qatar	QA
176	Romania	RO
177	Russian Federation	RU
178	Rwanda	RW
179	Reunion	RE
180	Saint Helena	SH
181	Saint Kitts And Nevis	KN
182	Saint Lucia	LC
183	Saint Pierre And Miquelon	PM
184	Saint Vincent And The Grenadines	VC
185	Samoa	WS
186	San Marino	SM
187	Sao Tome And Principe	ST
188	Saudi Arabia	SA
189	Senegal	SN
190	Serbia And Montenegro	CS

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191	Seychelles	SC
192	Sierra Leone	SL
193	Singapore	SG
194	Slovakia	SK
195	Slovenia	SI
196	Solomon Islands	SB
197	Somalia	SO
198	South Africa	ZA
199	South Georgia And The South Sandwich Islands	GS
200	Spain	ES
201	Sri Lanka	LK
202	Sudan	SD
203	Suriname	SR
204	Svalbard And Jan Mayen	SJ
205	Swaziland	SZ
206	Sweden	SE
207	Switzerland	CH
208	Syrian Arab Republic	SY
209	Taiwan, Province Of China	TW
210	Tajikistan	TJ
211	Tanzania, United Republic Of	TZ
212	Thailand	TH
213	Timor-Leste	TL
214	Togo	TG
215	Tokelau	TK
216	Tonga	TO
217	Trinidad And Tobago	TT
218	Tunisia	TN
219	Turkey	TR
220	Turkmenistan	TM
221	Turks And Caicos Islands	TC
222	Tuvalu	TV
223	Uganda	UG
224	Ukraine	UA
225	United Arab Emirates	AE
226	United Kingdom	GB
227	United States	US

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228	United States Minor Outlying Islands	UM
229	Uruguay	UY
230	Uzbekistan	UZ
231	Vanuatu	VU
232	Vatican City State (Holy See)	VA
233	Venezuela	VE
234	Virgin Islands, British	VG
235	Virgin Islands, U.S.	VI
236	Việt Nam	VN
237	Wallis And Futuna	WF
238	Western Sahara	EH
239	Yemen	YE
240	Zambia	ZM
241	Zimbabwe	ZW

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