Pre-Delegation Testing

EPP Test Cases

Version

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# Introduction

## Scope

The Pre-Delegation Testing Provider will execute an *Extensible Provisioning Protocol* (EPP) test case suite using registrar credentials supplied by the applicant. The tests include:

* IPv6 transport support (if supported by the applicant)
* IPv6 DNS glue record handling
* DNSSEC support

All tests are to be performed over IPv4 and IPv6 from various points on the Internet.

## References

### External

* IEEE 829-2008
* ICANN gTLD Applicant Guidebook, Version 2012-06-04

### Internal

* Pre-Delegation Testing, Statement of Work
* Pre-Delegation Testing, Master Test Plan
* Pre-Delegation Testing, EPP Test Plan
* Pre-Delegation Testing, DNS Delegation Test Case
* Pre-Delegation Testing, Whois CLI Test Cases

### Document Hierarchy

## Context

The first test (EPP Conn Test) is to be performed over IPv4 and IPv6 (if supported by the applicant) from at least five points on the Internet. At least one probe node should be located in every ICANN region. The rest of the tests will only be performed from one location.

## Notation for description

Each test case for the EPP service is described in their own chapter. The test procedures are described directly in the test case.

# EPP Conn Test

## Test case identifier

EPPConnTest

## Objective

This test verifies the connectivity from different nodes to the EPP provisioning system by doing a login and then a logout. For information about nodes, see 1.3.

The test will be performed over IPv4, and also IPv6 if applicant supports it.

## Inputs

The following information is needed as input for this test case:

| Id | Description | Type |
| --- | --- | --- |
| EppLoginId | Login ID for EPP test user | String |
| EppLoginPwd | Login password for EPP test user | String |
| EppNsDomainUri | Object URI for Domain Object | String |
| EppNsDomainSl | Schema location for Domain Object | String |
| EppNsContactUri | Object URI for Contact Object | String |
| EppNsContactSl | Schema location for Contact Object | String |
| EppNsHostUri | Object URI for Host Object. If the applicant is not supporting Host Objects, this field is not manadatory. | String |
| EppNsHostSl | Schema location for Host Object. If the applicant is not supporting Host Objects, this field is not manadatory. | String |
| EppExtSecDnsUri | Object URI for Sec Dns Object Extension | String |
| EppExtSecDnsSl | Schema location for Sec Dns Object Extension | String |
| EppExtUri-[1..n] | Object URI for extension 1..n | String |
| EppExtSl-[1..n] | Schema location for extensions 1..n | String |
| EppServerIPv4 | IPv4 address to EPP server | String |
| EppServerIPv6 | IPv6 address to EPP server if applicant supports IPv6 | String |
| EppServerPort | Port number to EPP server | Number |
| EppClientCertificate | Yes if applicant requires client certificate | Boolean |
| EppClientKeyPairPem | PEM file with valid client certificate for test user (Public and private) | PEM file |
| EppClientKeyPairPwd | Password for client certificate for test user | String |
| EppServerCertificatePem | PEM file with server certificate (Public) | PEM file |

## Outcome(s)

The login command from each probe MUST complete with result code 1000

The logout command from each probe MUST complete with result code 1500.

## Environmental needs

* EPP test script
* IPv4 connectivity
* IPv6 connectivity

## Special procedural requirements

Abort the test if any operation takes longer than 30 seconds.

## Intercase dependencies

This test has no intercase dependencies.

## Ordered description of steps to be taken to execute the test case

This test will be performed from all of the nodes.

1. Connect to EppServerIPv4.  
   Create a login command with *EppLoginId* and password *EppLoginPwd*.  
   Use the *EppNsDomainUri*, *EppNsDomainSl*, *EppNsContactUri*, *EppNsContactSl*, *EppNsHostUri* and *EppNsHostSl* to build the login message.  
   Add the secDNS extension with *EppExtSecDnsUri* and *EppExtSecDnsSl*.  
   Add zero or more extra extensions with *EppExtUri* and *EppExtSl*.  
   If the server requires client certificate, connect with client certificate *EppClientKeyPairPem.*  
   The login command MUST complete with result code 1000.
2. Create a logout command.  
   The logout command MUST complete with result code 1500.

If applicant supports IPv6:

1. Connect to EppServerIPv6.  
   Create a login command with *EppLoginId* and password *EppLoginPwd*.  
   Use the *EppNsDomainUri*, *EppNsDomainSl*, *EppNsContactUri*, *EppNsContactSl*, *EppNsHostUri* and *EppNsHostSl* to build the login message.  
   Add the secDNS extension with *EppExtSecDnsUri* and *EppExtSecDnsSl*.  
   Add zero or more extra extensions with *EppExtUri* and *EppExtSl*.  
   If the server requires client certificate, connect with client certificate *EppClientKeyPairPem.*  
   The login command MUST complete with result code 1000.
2. Create a logout command.  
   The logout command MUST complete with result code 1500.

# EPP Domain Create 01

## Test case identifier

EPPDomCreate01

## Objective

This test verifies compliance of the EPP server with RFC’s for logging in, creating a domain object, logging out, and verifying that the domain is visible in the zone within 24 hours. It also verifies that information is visible in Whois within 24 hours.

## Inputs

The following information is needed as input for this test case:

The IP address for the authoritative name server for the TLD zone is required as the test verifies DNS visibility. It is fetched from the XML data file provided by the applicant for the DNS tests.

The IP address of the Whois server is extracted from the DNS zone by the Whois test and is also used for this TC.

The full information from the input table in 2.3 is also used for login.

| Id | Description | Type |
| --- | --- | --- |
| DnsGlueRecord1 | IPv4 or IPv6 address of 1st authoritative name server | String |
| WhoisIPv4Port43 | The IPv4 address of the Whois service on port 43 | String |
| EppDomCreate01Name | Domain name to create | String |
| EppDomCreate01Period | Domain period type | Y/M |
| EppDomCreate01PeriodValue | Domain period value | Number |
| EppDomCreate01RegistrantId | Domain registrant id | String |
| EppDomCreate01AdminId | Domain Admin id if required | String |
| EppDomCreate01TechId | Domain Tech id if required | String |
| EppDomCreate01BillingId | Domain Billing id if required | String |
| EpPDomCreate01AuthPw | AuthPw if requited | String |
| EppDomCreate01Ns01 | Host Object or Host Attribute name for ns01 | String |
| EppDomCreate01Ns02 | Host Object or Host Attribute name for ns02 | String |
| EppDomCreate01Ext01Uri | Extension 01 object URI | String |
| EppDomCreate01Ext01Sl | Extension 01 schema location | String |
| EppDomCreate01Ext01ExtName | Extension 01 name | String |
| EppDomCreate01Ext01ExtValue | Extension 01 value for direct text node | String |
| EppDomCreate01Ext01Field01 | Extension 01 field name 01 | String |
| EppDomCreate01Ext01Value01 | Extension 01 field value 01 | String |
| … | Repeat for max y fields |  |
| … | Repeat for max x extensions |  |

## Outcome(s)

Initial DNS lookup MUST return NXDOMAIN for *EppDomCreate01Name*.

Initial Whois lookup MUST NOT return any information about *EppDomCreate01Name*.

Login step MUST complete with result code 1000.

Create step MUST complete with result code 1000 or 1001.

Logout step MUST complete with result code 1500.

*EppDomCreate01Name* MUST be visible in zone within 24 hours.

*EppDomCreate01Name* MUST be visible in Whois after within 24 hours.

## Environmental needs

* DNS test script
* Whois client software
* EPP test script
* IPv4 connectivity
* *EppDomCreate01Name* MUST NOT exist in the DNS zone.
* *EppDomCreate01RegistrantId* MUST exist in applicant contact database
* *EppDomCreate01Ns01* MUST exist in applicant host database, and be configured to serve domain *EppDomCreate01Name*.
* *EppDomCreate01Ns02* MUST exist in applicant host database, and be configured to serve domain *EppDomCreate01Name*.

## Special procedural requirements

Abort the test if any Whois query takes longer than 10 seconds.

Abort the test if any EPP operation takes longer than 30 seconds.

## Intercase dependencies

This test has no intercase dependencies.

## Ordered description of steps to be taken to execute the test case

1. Verify that the domain is not present in Whois:
   1. Start a terminal.
   2. Query the Whois service using the client software:  
      whois -h *WhoisIPv4Port43* *EppDomCreate01Name*
   3. The domain name MUST NOT be present in the response.
2. Perform a DNS lookup for the domain name *EppDomCreate01Name*.  
   The result MUST be NXDOMAIN.
3. Perform the same login as the login step in 2.8.  
   The login command MUST complete with result code 1000.
4. Create a domain create command with *EppDomCreate01Name*.
   1. Use period name from *EppDomCreate01Period* and period value from *EppDomCreate01PeriodValue*.
   2. Use name server 1 from *EppDomCreate01Ns01* and name server 2 from *EppDomCreate01Ns02*.
   3. If domain create requires extra extensions and values, create an extension part from *EppDomCreate01Ext01Uri* and fill in field name from *EppDomCreateExt01Field01* and values from *EppDomCreateExt01Value01*.

The domain create command MUST complete with result code 1000 or 1001.

1. Create a logout command.  
   The logout command MUST complete with result code 1500.
2. Verify that the *EPPDomCreate01Name* domain is visible in the zone within 24 hours.
3. Verify that the *EPPDomCreate01Name* is visible in Whois within 24 hours.

# EPP Domain Create 02

## Test case identifier

EPPDomCreate02

This test is changed from creating a domain to adding subordinate hosts to an existing domain. As a consequence, all fields required for creating the domain are now optional, and will be ignored if they are present in the input data. They will be removed in a future release.

## Objective

This test verifies compliance of the EPP server with RFC’s for logging in, creating subordinate Host Objects for a domain, updating the domain, logging out, and verifying the correct handling of glue records.

If the applicant does not support Host Objects, the test uses Host Attributes to insert the subordinate name servers for the domain.

## Inputs

The following information is needed as input for this test case:

The IP address for the authoritative name server for the TLD zone is required as the test verifies DNS visibility. It is fetched from the XML data file provided by the applicant for the DNS tests.

The full information from the input table in 2.3 is also used for login.

| Id | Description | Type |
| --- | --- | --- |
| DnsGlueRecord1 | IPv4 or IPv6 address of 1st authoritative name server | String |
| EppDomCreate02Name | Domain name to update | String |
| EppDomCreate02Ns01 | Subordinate Host Object or Host Attribute name for name server 01 | String |
| EppDomCreate02Ns01Ipv4 | Subordinate name server 01 IPv4 address | String |
| EppDomCreate02Ns01Ipv6 | Subordinate name server 01 IPv6 address | String |
| EppDomCreate02Ns02 | Subordinate Host Object or Host Attribute name for name server 02 | String |
| EppDomCreate02Ns02Ipv4 | Subordinate name server 02 IPv4 address | String |
| EppDomCreate02Ns02Ipv6 | Subordinate name server 02 IPv6 address | String |
| EppDomCreate02UpdExt01Uri | Extension 01 object URI | String |
| EppDomCreate02UpdExt01Sl | Extension 01 schema location | String |
| EppDomCreate02UpdExt01ExtName | Extension 01 name | String |
| EppDomCreate02UpdExt01ExtValue | Extension 01 value for direct text node | String |
| EppDomCreate02UpdExt01Field01 | Extension 01 field name 01 | String |
| EppDomCreate02UpdExt01Value01 | Extension 01 field value 01 | String |
| … | Repeat for max y fields for Update |  |
| … | Repeat for max x extensions for Update |  |
| EppDomCreate02Ns01Ext01Uri | Extension 01 object URI | String |
| EppDomCreate02Ns01Ext01Sl | Extension 01 schema location | String |
| EppDomCreate02Ns01Ext01ExtName | Extension 01 name | String |
| EppDomCreate02Ns01Ext01ExtValue | Extension 01 value for direct text node | String |
| EppDomCreate02Ns01Ext01Field01 | Extension 01 field name 01 | String |
| EppDomCreate02Ns01Ext01Value01 | Extension 01 field value 01 | String |
| … | Repeat for max y fields for name server 01 |  |
| … | Repeat for max x extensions for name server 01 |  |
| EppDomCreate02Ns02Ext01Uri | Extension 01 object URI | String |
| EppDomCreate02Ns02Ext01Sl | Extension 01 schema location | String |
| EppDomCreate02Ns02Ext01ExtName | Extension 01 name | String |
| EppDomCreate02Ns02Ext01ExtValue | Extension 01 value for direct text node | String |
| EppDomCreate02Ns02Ext01Field01 | Extension 01 field name 01 | String |
| EppDomCreate02Ns02Ext01Value01 | Extension 01 field value 01 | String |
| … | Repeat for max y fields for name server 02 |  |
| … | Repeat for max x extensions for name server 02 |  |

## Outcome(s)

Initial DNS lookup MUST NOT show neither *EppDomCreate02Ns01* nor *EppDomCreate02Ns02* as Nameservers for *EppDomCreate02Name*.

The login command MUST complete with result code 1000.

If the applicant is using Host Objects, the host create command MUST complete with result code 1000 or 1001.

The domain update command MUST complete with result code 1000 or 1001.

The logout command MUST complete with result code 1500.

*EppDomCreate02Name* MUST be visible in zone with correct glue records within 24 hours.

## Environmental needs

* DNS test script
* EPP test script
* IPv4 connectivity
* *EppDomCreate02Name* MUST exist in applicant EPP database.
* *EppDomCreate02RegistrantId* MUST exist in applicant contact database
* *EppDomCreate02Ns01* MUST be configured to serve domain *EppDomCreate02Name*.
* *EppDomCreate02Ns02* MUST be configured to serve domain *EppDomCreate02Name*.

## Special procedural requirements

Abort the test if any EPP operation takes longer than 30 seconds.

## Intercase dependencies

This test has no intercase dependencies.

## Ordered description of steps to be taken to execute the test case

1. Perform a DNS lookup for *EppDomCreate02Name* domain name.  
   The result MUST NOT show neither *EppDomCreate02Ns01 n*or *EppDomCreate02Ns02* as Nameservers for *EppDomCreate02Name*.
2. Perform the same login as the login step in 2.8.  
   The login command MUST complete with result code 1000.
3. If the applicant does not support Host Objects, skip to step 6.
4. Create a host create command for subordinate host *EppDomCreate02Ns01* with IPv4 address *EppDomCreate02Ns01Ipv4* and/or IPv6 address *EppDomCreate02Ns01Ipv6.*The host create command MUST complete with result code 1000 or 1001.
5. Create a host create command for subordinate host *EppDomCreate02Ns02* with IPv4 address *EppDomCreate02Ns02Ipv4* and/or IPv6 address *EppDomCreate02Ns02Ipv6.*The host create command MUST complete with result code 1000 or 1001.
6. Create a domain update command with *EppDomCreate02Name* and hosts *EppDomCreate02Ns01* and *EppDomCreate02Ns02.*- If the applicant supports Host Objects, use Host Objects.  
   - If the applicant does not support Host Objects, use Host Attributes.The domain update command MUST complete with result code 1000 or 1001.
7. Create a logout command.  
   The logout command MUST complete with result code 1500.
8. Verify that the *EppDomCreate02Name* domain and the correct glue records are visible in the zone within 24 hours.

# EPP Domain Create 03

## Test case identifier

EPPDomCreate03

## Objective

This test verifies compliance of the EPP server with RFC’s for logging in, creating a domain object with DNSSEC records and logging out.

## Inputs

The following information is needed as input for this test case:

The IP address for the authoritative name server for the TLD zone is required as the test verifies DNS visibility. It is fetched from the XML data file provided by the applicant for the DNS tests.

The full information from the input table in 2.3 is also used for login.

| Id | Description | | Type |
| --- | --- | --- | --- |
| DnsGlueRecord1 | IPv4 or IPv6 address of 1st authoritative name server | | String |
| EppDomCreate03Name | Domain name to create | | String |
| EppDomCreate03Period | Domain period type | | Y/M |
| EppDomCreate03PeriodValue | Domain period value | | Number |
| EppDomCreate03RegistrantId | Domain registrant id | | String |
| EppDomCreate03AdminId | Domain admin id if required | String | |
| EppDomCreate03TechId | Domain tech id if required | String | |
| EppDomCreate03BillingId | Domain billing id if required | String | |
| EpPDomCreate03AuthPw | Authentication password if required | String | |
| EppDomCreate03Ns01 | Host Object name for ns01 | | String |
| EppDomCreate03Ns02 | Host Object name for ns02 | | String |
| EppDomCreate03Ext01Uri | Extension 01 object URI | | String |
| EppDomCreate03Ext01Sl | Extension 01 schema location | | String |
| EppDomCreate03Ext01ExtName | Extension 01 name | String | |
| EppDomCreate03Ext01ExtValue | Extension 01 value for direct text node | | String |
| EppDomCreate03Ext01Field01 | Extension 01 field name 01 | | String |
| EppDomCreate03Ext01Value01 | Extension 01 field value 01 | | String |
| … | Repeat for max y fields | |  |
| … | Repeat for max x extensions | |  |
| EppDomCreate03KeyType | D for dsData specification  K for keyData specification  DK for dsData and keyData specification | | String |
| EppDomCreate03DsKeyTag01 | Value for dsData 01 keytag | | String |
| EppDomCreate03DsAlg01 | Value for dsData 01 alg | | Number |
| EppDomCreate03DsDigestType01 | Value for dsData 01 digest type | | Number |
| EppDomCreate03DsDigest01 | Value for dsData 01 digest | | String |
| … | Repeat for max x dsData records | |  |
| EppDomCreate03KdFlags01 | Value for keyData 01 flags | | Number |
| EppDomCreate03KdProtocol01 | Value for keyData 01 protocol | | Number |
| EppDomCreate03KdAlg01 | Value for keyData 01 alg | | Number |
| EppDomCreate03KdPubKey01 | Value for keyData 01 pubKey | | String |
| … | Repeat for max x keyData records | |  |

## Outcome(s)

Initial DNS lookup MUST return NXDOMAIN for *EppDomCreate03Name*.

The domain create command MUST complete with result code 1000 or 1001.

The logout command MUST complete with result code 1500.

*EppDomCreate03Name* MUST be visible in the zone with correct DNS records within 24 hours.

## Environmental needs

* DNS test script
* EPP test script
* IPv4 connectivity
* *EppDomCreate03Name* MUST NOT exist in the DNS zone.
* *EppDomCreate03RegistrantId* MUST exist in applicant contact database
* *EppDomCreate03Ns01* MUST exist in applicant host database, and be configured to serve domain *EppDomCreate03Name* with correct DNSSEC records.
* *EppDomCreate03Ns02* MUST exist in applicant host database, and be configured to serve domain *EppDomCreate03Name* with correct DNSSEC records.

## Special procedural requirements

Abort the test if any EPP operation takes longer than 30 seconds.

## Intercase dependencies

This test has no intercase dependencies.

## Ordered description of steps to be taken to execute the test case

1. Perform a DNS lookup for *EppDomCreate03Name* domain name.  
   The result MUST be NXDOMAIN.
2. Perform the same login as the login step in 2.8.  
   The login command MUST complete with result code 1000.
3. Create a domain create command with *EppDomCreate03Name*.
   1. Use period name from *EppDomCreate03Period* and period value from *EppDomCreate03PeriodValue*.
   2. Use name server 1 from *EppDomCreate03Ns01* and name server 2 from *EppDomCreate03Ns02*.
   3. Add one or more secDNS records with dsData or keyData or both, depending on the value of *EppDomUpdate01KeyType*. Use appropriate values from *EppDomUpdate01DsKeyTag01*, *EppDomUpdate01DsAlg01*, *EppDomUpdate01DsDigestType01*, *EppDomUpdate01DsDigest01*, *EppDomUpdate01KdFlags01*, *EppDomUpdate01KdProtocol01*, *EppDomUpdate01KdAlg01*, *EppDomUpdate01kdPubKey01*.
   4. If domain create requires extra extension and values, create an extension part from *EppDomCreate03Ext01Uri* and fill in field name from *EppDomCreate03Ext01Field01* and values from *EppDomCreate03Ext01Value01*.

The domain create command MUST complete with result code 1000 or 1001.

1. Create a logout command.  
   The logout command MUST complete with result code 1500.
2. Verify that the *EppDomCreate03Name* domain is visible, with the correct DNSSEC records, in the zone within 24 hours.

# EPP Domain Renew 01

## Test case identifier

EPPDomRenew01

## Objective

This test verifies compliance of the EPP server with RFC’s for logging in, renewing a domain object and logging out.

## Inputs

The following information is needed as input for this test case:

The full information from the input table in 2.3 is also used for login.

| Id | Description | Type |
| --- | --- | --- |
| EppDomRenew01Name | Domain name to renew | String |
| EppDomRenew01Period | Domain period type | Y/M |
| EppDomRenew01PeriodValue | Domain period value | Number |
| EppDomRenew01ExpDate | Domain current expiry date | String |
| EppDomRenew01Ext01Uri | Object URI for extension 01 | String |
| EppDomRenew01Ext01Sl | Extension 01 schema location | String |
| EppDomRenew01Ext01ExtName | Extension 01 name | String |
| EppDomRenew01Ext01ExtValue | Extension 01 value for direct text node | String |
| EppDomRenew01Ext01Field01 | Extension 01 field name 01 | String |
| EppDomRenew01Ext01Value01 | Extension 01 field value 01 | String |
| … | Repeat for max y fields |  |
| … | Repeat for max x extensions |  |

## Outcome(s)

The login command MUST complete with result code 1000.

The renew command MUST complete with result code 1000 or 1001.

The logout command MUST complete with result code 1500.

## Environmental needs

* EPP test script
* IPv4Connectivity
* *EppDomRenew01Name* domain MUST exist in the applicant domain database, and be ready for renewal

## Special procedural requirements

Abort the test if any EPP operation takes longer than 30 seconds.

## Intercase dependencies

This test has no intercase dependencies.

## Ordered description of steps to be taken to execute the test case

1. Perform the same login as the login step in 2.8.  
   The login command MUST complete with result code 1000.
2. Create a domain renew command with *EppDomRenew01Name*.
   1. Use period name from *EppDomRenew01Period* and period value from *EppDomRenew01PeriodValue*.
   2. If domain renew requires extra extension and values, create an extension part from *EppDomRenew01Ext01Uri* and fill in field name from *EppDomRenewe01Ext01Field01* and values from *EppDomRenew01Ext01Value01*.

The domain renew command MUST complete with result code 1000 or 1001.

1. Create a logout command.  
   The logout command MUST complete with result code 1500.

# EPP Domain Transfer 01

## Test case identifier

EPPDomTransfer01

## Objective

This test verifies compliance of the EPP server with RFC’s for logging in, requesting a transfer of a domain object and logging out.

## Inputs

The following information is needed as input for this test case:

The full information from the input table in 2.3 is also used for login.

| Id | Description | Type |
| --- | --- | --- |
| EppDomTransfer01Name | Domain name to transfer | String |
| EppDomTransfer01AddPeriod | Yes if the applicant support adding a period to transfer | Boolean |
| EppDomTransfer01Period | Domain period type | Y/M |
| EppDomTransfer01PeriodValue | Domain period value | Number |
| EppDomTransfer01AuthInfo | Authorization info for domain, registrant or associated contacts | String |
| EppDomTransfer01AuthRoid | Roid for registrant or contact if EppDomTransfer01AuthInfo is associated with registrant or contact object | String |
| EppDomTransfer01Ext01Uri | Extension 01 object URI | String |
| EppDomTransfer01Ext01Sl | Extension 01 schema location | String |
| EppDomTransfer01Ext01ExtName | Extension 01 name | String |
| EppDomTransfer01Ext01ExtValue | Extension 01 value for direct text node | String |
| EppDomTransfer01Ext01Field01 | Extension 01 field name 01 | String |
| EppDomTransfer01Ext01Value01 | Extension 01 field value 01 | String |
| … | Repeat for max y fields |  |
| … | Repeat for max x extensions |  |

## Outcome(s)

The login command MUST complete with result code 1000.

The domain transfer command MUST complete with result code 1000 or 1001.

The logout command MUST complete with result code 1500.

## Environmental needs

* EPP test script
* IPv4 connectivity
* *EppDomTransfer01Name* domain MUST exist in the applicant domain database, and be available for transfer.

## Special procedural requirements

Abort the test if any EPP operation takes longer than 30 seconds.

## Intercase dependencies

This test has no intercase dependencies.

## Ordered description of steps to be taken to execute the test case

1. Perform the same login as the login step in 2.8.  
   The login command MUST complete with result code 1000.
2. Create a domain transfer command with *EppDomTransfer01Name*.
   1. Add an Op attribute in transfer command with the value “request”.
   2. If *EppDomTransfer01AddPeriod* is true, add period part with Period name from *EppDomTransfer01Period* and period value from *EppDomTransfer01PeriodValue*.
   3. Add authinfo part with *EppDomTransfer01AuthInfo*.
   4. If *EppDomTransfer01AuthRoid* is defined, add a roid attribute to pw part with the value *EppDomTransfer01AuthRoid*.
   5. If domain renew requires extra extension and values, create an extension part from *EppDomTransfer01Ext01Uri* and *EppDomTransfer01Ext01Sl* and fill in field name from *EppDomTransfer01Ext01Field01* and values from *EppDomTransfer01Ext01Value01*.

The domain transfer command MUST complete with result code 1000 or 1001.

1. Create a logout command.  
   The logout command MUST complete with result code 1500.

# EPP Domain Transfer 02

## Test case identifier

EPPDomTransfer02

## Objective

This test verifies compliance of the EPP server with RFC’s for logging in, approving a transfer of a domain object if the applicant supports this operation via EPP, and logging out.

This test will only be run if the *EppDomTransfer02Approve* is set to yes.

## Inputs

The following information is needed as input for this test case:

The full information from the input table in 2.3 is also used for login.

| Id | Description | Type |
| --- | --- | --- |
| EppDomTransfer02Approve | Yes if the applicant supports the approve operation | Boolean |
| EppDomTransfer02Name | Domain name to transfer | String |
| EppDomTransfer02AddPeriod | Yes if the applicant support adding a period to transfer | Boolean |
| EppDomTransfer02Period | Domain period type | Y/M |
| EppDomTransfer02PeriodValue | Domain period value | Number |
| EppDomTransfer02AuthInfo | Authorization info for domain, registrant or associated contacts if required | String |
| EppDomTransfer02AuthRoid | Roid for registrant or contact if EppDomTransfer01AuthInfo is associated with registrant or contact object | String |
| EppDomTransfer02Ext01Uri | Extension 01 object URI | String |
| EppDomTransfer02Ext01Sl | Extension 01 schema location | String |
| EppDomTransfer02Ext01ExtName | Extension 01 name | String |
| EppDomTransfer02Ext01ExtValue | Extension 01 value for direct text node | String |
| EppDomTransfer02Ext01Field01 | Extension 01 field name 01 | String |
| EppDomTransfer02Ext01Value01 | Extension 01 field value 01 | String |
| … | Repeat for max y fields |  |
| … | Repeat for max x extensions |  |

## Outcome(s)

The login command MUST complete with result code 1000.

The domain transfer command MUST complete with result code 1000 or 1001.

The logout MUST complete with result code 1500.

## Environmental needs

* EPP test script
* IPv4 connectivity
* *EppDomTransfer02Name* domain MUST exist in the applicant domain database, and be available for transfer approve.

## Special procedural requirements

Abort the test if any EPP operation takes longer than 30 seconds.

## Intercase dependencies

This test has no intercase dependencies.

## Ordered description of steps to be taken to execute the test case

1. Perform the same login as the login step in 2.8.  
   The login command MUST complete with result code 1000.
2. Create a domain transfer command with *EppDomTransfer02Name*.
   1. Add an Op attribute in transfer command with the value “approve”.
   2. If *EppDomTransfer02AddPeriod* is true, add period part with period name from *EppDomTransfer02Period* and period value from *EppDomTransfer02PeriodValue.*
   3. Add authinfo part with *EppDomTransfer01AuthInfo*.
   4. If *EppDomTransfer02AuthRoid* is defined add a roid attribute to pw part with the value *EppDomTransfer02AuthRoid*.
   5. If domain transfer requires extra extension and values, create an extension part from *EppDomTransfer02Ext01Uri* and *EppDomTransfer02Ext01Sl* and fill in field name from *EppDomTransfer02Ext01Field01* and values from *EppDomTransfer02Ext01Value01*.

The domain transfer command MUST complete with result code 1000 or 1001.

1. Create a logout command.  
   The logout command MUST complete with result code 1500.

# EPP Domain Delete 01

## Test case identifier

EPPDomDelete01

## Objective

This test verifies compliance of the EPP server with RFC’s for logging in, deleting a domain object and logging out.

## Inputs

The following information is needed as input for this test case:

The full information from the input table in 2.3 is also used for login.

| Id | Description | Type |
| --- | --- | --- |
| EppDomDelete01Name | Domain name to delete | String |
| EppDomDelete01Ext01Uri | Extension 01 object URI | String |
| EppDomDelete01Ext01Sl | Extension 01 schema location | String |
| EppDomDelete01Ext01ExtName | Extension 01 name | String |
| EppDomDelete01Ext01ExtValue | Extension 01 value for direct text node | String |
| EppDomDelete01Ext01Field01 | Extension 01 field name 01 | String |
| EppDomDelete01Ext01Value01 | Extension 01 field value 01 | String |
| … | Repeat for max y fields |  |
| … | Repeat for max x extensions |  |

## Outcome(s)

The login command MUST complete with result code 1000.

The domain delete command MUST complete with result code 1000 or 1001.

The logout command MUST complete with result code 1500.

## Environmental needs

* EPP test script
* IPv4 connectivity
* *EppDomDelete01Name* domain MUST exist in the applicant domain database, and be available for delete.

## Special procedural requirements

Abort the test if any EPP operation takes longer than 30 seconds.

## Intercase dependencies

This test has no intercase dependencies.

## Ordered description of steps to be taken to execute the test case

1. Perform the same login as the login step in 2.8.  
   The login command MUST complete with result code 1000.
2. Create a domain delete command with *EppDomDelete01Name*.
   1. If domain delete requires extra extension and values, create an extension part from *EppDomDelete01Ext01Uri* and *EppDomDelete01Ext01Sl* and fill in field name from *EppDomDelete01Ext01Field01* and values from *EppDomDelete01Ext01Value01*.

The domain delete command MUST complete with result code 1000 or 1001.

1. Create a logout command.  
   The logout command MUST complete with result code 1500.

# EPP Contact Create 01

## Test case identifier

EppConCreate01

## Objective

This test verifies compliance of the EPP server with RFC’s for logging in, creating a contact object and logging out.

## Inputs

The following information is needed as input for this test case:

The full information from the input table in 2.3 is also used for login.

| Id | Description | Type |
| --- | --- | --- |
| EppConCreate01Id | Contact ID to create | String |
| EppConCreate01PIntMand | Yes if PostalInfo type INT is mandatory | Boolean |
| EppConCreate01PIntName | Contact PostalInfo Int Name | String |
| EppConCreate01PIntOrg | Contact PostalInfo Int Org | String |
| EppConCreate01PIntStreet1 | Contact PostalInfo Int Street1 | String |
| EppConCreate01PIntStreet2 | Contact PostalInfo Int Street2, if mandatory | String |
| EppConCreate01PIntStreet3 | Contact PostalInfo Int Street3, if mandatory | String |
| EppConCreate01PIntCity | Contact PostalInfo Int City | String |
| EppConCreate01PIntSp | Contact PostalInfo Int State or Province, if mandatory | String |
| EppConCreate01PIntPc | Contact PostalInfo Int Postcode, if mandatory | String |
| EppConCreate01PIntCc | Contact PostalInfo Int Country Code | String |
| EppConCreate01PLocMand | Yes if PostalInfo type LOC is mandatory | Boolean |
| EppConCreate01PLocName | Contact PostalInfo Loc Name | String |
| EppConCreate01PLocOrg | Contact PostalInfo Loc Org | String |
| EppConCreate01PLocStreet1 | Contact PostalInfo Loc Street1 | String |
| EppConCreate01PLocStreet2 | Contact PostalInfo Loc Street2, if mandatory | String |
| EppConCreate01PLocStreet3 | Contact PostalInfo Loc Street3, if mandatory | String |
| EppConCreate01PLocCity | Contact PostalInfo Loc City | String |
| EppConCreate01PLocSp | Contact PostalInfo Loc State or Province, if mandatory | String |
| EppConCreate01PLocPc | Contact PostalInfo Loc Postcode, if mandatory | String |
| EppConCreate01PLocCc | Contact PostalInfo Loc Country Code | String |
| EppConCreate01Voice | Contact Voice telephone number, if mandatory | String |
| EppConCreate01Fax | Contact Fax telephone number, if mandatory | String |
| EppConCreate01Email | Contact Email address | String |
| EppConCreate01Auth | Contact Auth Info, if mandatory | String |
| EppConCreate01Ext01Uri | Extension 01 object URI | String |
| EppConCreate01Ext01Sl | Extension 01 schema location | String |
| EppConCreate01Ext01ExtName | Extension 01 name | String |
| EppConCreate01Ext01ExtValue | Extension 01 value for direct text node | String |
| EppConCreate01Ext01Field01 | Extension 01 field name 01 | String |
| EppConCreate01Ext01Value01 | Extension 01 field value 01 | String |
| … | Repeat for max y fields |  |
| … | Repeat for max x extensions |  |

## Outcome(s)

The login command MUST complete with result code 1000.

The contact create command MUST complete with result code 1000 or 1001.

The logout command MUST complete with result code 1500.

## Environmental needs

* EPP test script
* IPv4 connectivity
* *EppConCreate01Id* domain MUST NOT exist in the applicant domain database.

## Special procedural requirements

Abort the test if any EPP operation takes longer than 30 seconds.

## Intercase dependencies

This test has no intercase dependencies.

## Ordered description of steps to be taken to execute the test case

1. Perform the same login as the login step in 2.8.  
   The login command MUST complete with result code 1000.
2. Create a contact create command with *EppConCreate01Id*.
   1. If *EppConCreate01PIntMand* is yes, create a Postal Info type Int with appropriate fields from *EppConCreate01PIntName*, *EppConCreate01PIntOrg*, *EppConCreate01PIntStreet1*, *EppConCreate01PIntStreet2*, *EppConCreate01PIntStreet3*, *EppConCreate01PIntCity*, *EppConCreate01PIntSp*, *EppConCreate01PIntPc* and *EppConCreate01PIntCc*.
   2. If *EppConCreate01PLocMand* is yes, create a Postal Info type Loc with appropriate fields from *EppConCreate01PLocName*, *EppConCreate01PLocOrg*, *EppConCreate01PLocStreet1*, *EppConCreate01PLocStreet2*, *EppConCreate01PLocStreet3*, *EppConCreate01PLocCity*, *EppConCreate01PLocSp*, *EppConCreate01PLOcPc* and *EppConCreate01PLocCc*.
   3. Add *EppConCreate01Voice*, *EppConCreate01Fax*, *EppConCreate01Email* and *EppConCreate01Auth* fields.
   4. If contact create requires extra extension and values, create an extension part from *EppConCreate01Ext01Uri* and *EppConCreate01Ext01Sl* and fill in field name from *EppConCreate01Ext01Field01* and values from *EppConCreate01Ext01Value01*.

The contact create command MUST complete with result code 1000 or 1001.

1. Create a logout command.  
   The logout command MUST complete with result code 1500.

# EPP Contact Delete 01

## Test case identifier

EPPConDelete01

## Objective

This test verifies compliance of the EPP server with RFC’s for logging in, deleting a contact object and logging out.

## Inputs

The following information is needed as input for this test case:

The full information from the input table in 2.3 is also used for login.

| Id | Description | Type |
| --- | --- | --- |
| EppConDelete01Id | ContactID to delete | String |
| EppConDelete01Ext01Uri | Extension 01 object URI | String |
| EppConDelete01Ext01Sl | Extension 01 schema location | String |
| EppConDelete01Ext01ExtName | Extension 01 name | String |
| EppConDelete01Ext01ExtValue | Extension 01 value for direct text node | String |
| EppConDelete01Ext01Field01 | Extension 01 field name 01 | String |
| EppConDelete01Ext01Value01 | Extension 01 field value 01 | String |
| … | Repeat for max y fields |  |
| … | Repeat for max x extensions |  |

## Outcome(s)

The login command MUST complete with result code 1000.

The contact delete command MUST complete with result code 1000 or 1001.

The logout command MUST complete with result code 1500.

## Environmental needs

* EPP test script
* IPv4 connectivity
* *EppConDelete01Id* domain MUST exist in the applicant domain database, and be available for delete.

## Special procedural requirements

Abort the test if any EPP operation takes longer than 30 seconds.

## Intercase dependencies

This test has no intercase dependencies.

## Ordered description of steps to be taken to execute the test case

1. Perform the same login as the login step in 2.8.  
   The login command MUST complete with result code 1000.
2. Create a contact delete command with *EppConDelete01Id*.
   1. If contact delete requires extra extension and values, create an extension part from *EppConDelete01Ext01Uri* and *EppConDelete01Ext01Sl* and fill in field name from *EppConDelete01Ext01Field01* and values from *EppConDelete01Ext01Value01*.

The contact delete command MUST complete with result code 1000 or 1001.

1. Create a logout command.  
   The logout command MUST complete with result code 1500.

# EPP Host Delete 01

## Test case identifier

EPPHostDelete01

## Objective

This test verifies compliance of the EPP server with RFC’s for logging in, deleting a Host Object and logging out.

If the applicant does not support Host Objects, this test will not be performed.

## Inputs

The following information is needed as input for this test case:

The full information from the input table in 2.3 is also used for login.

| Id | Description | Type |
| --- | --- | --- |
| EppHostDelete01Name | Host name to delete | String |
| EppHostDelete01Ext01Uri | Extension 01 object URI | String |
| EppHostDelete01Ext01Sl | Extension 01 schema location | String |
| EppHostDelete01Ext01ExtName | Extension 01 name | String |
| EppHostDelete01Ext01ExtValue | Extension 01 value for direct text node | String |
| EppHostDelete01Ext01Field01 | Extension 01 field name 01 | String |
| EppHostDelete01Ext01Value01 | Extension 01 field value 01 | String |
| … | Repeat for max y fields |  |
| … | Repeat for max x extensions |  |

## Outcome(s)

The login command MUST complete with result code 1000.

The host delete command MUST complete with result code 1000 or 1001.

The logout command MUST complete with result code 1500.

## Environmental needs

* EPP test script
* IPv4 connectivity
* *EppHostDelete01Name* host MUST exist in the applicant domain database, and be available for delete.

## Special procedural requirements

Abort the test if any EPP operation takes longer than 30 seconds.

## Intercase dependencies

This test has no intercase dependencies.

## Ordered description of steps to be taken to execute the test case

1. Perform the same login as the login step in 2.8.  
   The login command MUST complete with result code 1000.
2. Create a contact delete command with *EppHostDelete01Id*.
   1. If contact delete requires extra extension and values, create an extension part from *EppHostDelete01Ext01Uri* and *EppHostDelete01Ext01Sl* and fill in field name from *EppHostDelete01Ext01Field01* and values from *EppHostDelete01Ext01Value01*.

The contact delete command MUST complete with result code 1000 or 1001.

1. Create a logout command.  
   The logout command MUST complete with result code 1500.

# EPP Host Update 01

## Test case identifier

EPPHostUpdate01

## Objective

This test verifies compliance of the EPP server with RFC’s for logging in, updating a Host Object and logging out.

If the applicant does not support Host Objects, this test will not be performed.

## Inputs

The following information is needed as input for this test case:

The full information from the input table in 2.3 is also used for login.

| Id | Description | Type |
| --- | --- | --- |
| EppHostUpdate01Name | Host name to update | String |
| EppHostUpdate01Ipv4 | IPv4 address to add | String |
| EppHostUpdate01Ext01Uri | Extension 01 object URI | String |
| EppHostUpdate01Ext01Sl | Extension 01 schema location | String |
| EppHostUpdate01Ext01ExtName | Extension 01 name | String |
| EppHostUpdate01Ext01ExtValue | Extension 01 value for direct text node | String |
| EppHostUpdate01Ext01Field01 | Extension 01 field name 01 | String |
| EppHostUpdate01Ext01Value01 | Extension 01 field value 01 | String |
| … | Repeat for max y fields |  |
| … | Repeat for max x extensions |  |

## Outcome(s)

The login command MUST complete with result code 1000.

The host update command MUST complete with result code 1000.

The logout command MUST complete with result code 1500.

## Environmental needs

* EPP test script
* IPv4 connectivity
* *EppHostUpdate01Name* host MUST exist in the applicant domain database, and be available for update.

## Special procedural requirements

Abort the test if any EPP operation takes longer than 30 seconds.

## Intercase dependencies

This test has no intercase dependencies.

## Ordered description of steps to be taken to execute the test case

1. Perform the same login as the login step in 2.8.  
   The login command MUST complete with result code 1000.
2. Create a host update command with *EppHostUpdate01Name* and add IPv4 address *EppHostUpdate01Ipv4*
   1. If host update requires extra extension and values, create an extension part from *EppHostUpdate01Ext01Uri* and *EppHostUpdate01Ext01Sl* and fill in field name from *EppHostUpdate01Ext01Field01* and values from *EppHostUpdate01Ext01Value01*.

The host update command MUST complete with result code 1000.

1. Create a logout command.  
   The logout command MUST complete with result code 1500.

# EPP Contact Update 01

## Test case identifier

EPPContactUpdate01

## Objective

This test verifies compliance of the EPP server with RFC’s for logging in, updating a contact object and logging out.

## Inputs

The following information is needed as input for this test case:

The full information from the input table in 2.3 is also used for login.

| Id | Description | | Type |
| --- | --- | --- | --- |
| EppContactUpdate01Id | Contact ID to update | | String |
| EppContactUpdate01Email | | Email address to set | String |
| EppContactUpdate01Ext01Uri | Extension 01 object URI | | String |
| EppContactUpdate01Ext01Sl | Extension 01 schema location | | String |
| EppContactUpdate01Ext01ExtName | | Extension 01 name | String |
| EppContactUpdate01Ext01ExtValue | Extension 01 value for direct text node | | String |
| EppContactUpdate01Ext01Field01 | Extension 01 field name 01 | | String |
| EppContactUpdate01Ext01Value01 | Extension 01 field value 01 | | String |
| … | Repeat for max y fields | |  |
| … | Repeat for max x extensions | |  |

## Outcome(s)

The login command MUST complete with result code 1000.

The contact update command MUST complete with result code 1000.

The logout command MUST complete with result code 1500.

## Environmental needs

* EPP test script
* IPv4 connectivity
* *EppContactUpdate01Id* contact MUST exist in the applicant domain database, and be available for update.

## Special procedural requirements

Abort the test if any EPP operation takes longer than 30 seconds.

## Intercase dependencies

This test has no intercase dependencies.

## Ordered description of steps to be taken to execute the test case

1. Perform the same login as the login step in 2.8.  
   The login command MUST complete with result code 1000.
2. Create a contact update command with *EppContactUpdate01Id* and set *EppContactUpdate01Email*
   1. If contact update requires extra extension and values, create an extension part from *EppContactUpdate01Ext01Uri* and *EppContactUpdate01Ext01Sl* and fill in field name from *EppContactUpdate01Ext01Field01* and values from *EppContactUpdate01Ext01Value01*.

The contact update command MUST complete with result code 1000.

1. Create a logout command.  
   The logout command MUST complete with result code 1500.

# EPP Domain Update 01

## Test case identifier

EPPDomUpdate01

## Objective

This test verifies compliance of the EPP server with RFC’s for logging in, update a domain object with DNSSEC records and logging out. The test then verifies that the changes are visible in the zone within 60 minutes, both for DNS and Whois.

## Inputs

The following information is needed as input for this test case:

The IP address for the authoritative name server for the TLD zone is required as the test verifies DNS visibility. It is fetched from the XML data file provided by the applicant for the DNS tests.

As the test verifies Whois visibility, the IP address of a Whois server that responds on port 43 is needed. The IP address of the Whois server is extracted from the DNS zone by the Whois test and is also used for this TC.

The full information from the input table in 2.3 is also used for login.

| Id | Description | Type |
| --- | --- | --- |
| DnsGlueRecord1 | IPv4 or IPv6 address of 1st authoritative name server | String |
| WhoisIPv4Port43 | The IPv4 address of the Whois service on port 43 | String |
| EppDomUpdate01Name | Domain name to update | String |
| EppDomUpdate01Ext01Uri | Extension 01 object URI | String |
| EppDomUpdate01Ext01Sl | Extension 01 schema location | String |
| EppDomUpdate01Ext01ExtName | Extension 01 name | String |
| EppDomUpdate01Ext01ExtValue | Extension 01 value for direct text node | String |
| EppDomUpdate01Ext01Field01 | Extension 01 field name 01 | String |
| EppDomUpdate01Ext01Value01 | Extension 01 field value 01 | String |
| … | Repeat for max y fields |  |
| … | Repeat for max x extensions |  |
| EppDomUpdate01KeyType | D for dsData specification  K for keyData specification  DK for dsData and keyData specification | String |
| EppDomUpdate01DsKeyTag01 | Value for dsData 01 keytag | String |
| EppDomUpdate01DsAlg01 | Value for dsData 01 alg | Number |
| EppDomUpdate01DsDigestType01 | Value for dsData 01 digest type | Number |
| EppDomUpdate01DsDigest01 | Value for dsData 01 digest | String |
| … | Repeat for max x dsData records |  |
| EppDomUpdate01KdFlags01 | Value for keyData 01 flags | Number |
| EppDomUpdate01KdProtocol01 | Value for keyData 01 protocol | Number |
| EppDomUpdate01KdAlg01 | Value for keyData 01 alg | Number |
| EppDomUpdate01KdPubKey01 | Value for keyData 01 pubKey | String |
| … | Repeat for max x keyData records |  |

## Outcome(s)

The initial DNS lookup MUST NOT return NXDOMAIN for *EppDomUpdate01Name*.

The initial Whois lookup MUST NOT return any DNSSEC Signed information about *EppDomUpdate01Name*.

The domain update command MUST complete with result code 1000 or 1001.

The logout command MUST complete with result code 1500.

*EppDomUpdate01Name* MUST be visible in the zone with correct DNS records within 60 minutes.

*EppDomUpdate01Name* MUST be visible as a DNSSEC signed domain in Whois within 60 minutes.

## Environmental needs

* DNS test script
* EPP test script
* IPv4 connectivity
* *EppDomUpdate01Name* MUST exist in the DNS zone without DNSSEC records.
* *EppDomUpdate01RegistrantId* MUST exist in applicant contact database
* *EppDomUpdate01Ns01* MUST exist in applicant host database, and be configured to serve domain *EppDomUpdate01Name* with correct DNSSEC records.
* *EppDomUpdate01Ns02* MUST exist in applicant host database, and be configured to serve domain *EppDomUpdate01Name* with correct DNSSEC records.

## Special procedural requirements

Abort the test if any Whois query takes longer than 10 seconds.

Abort the test if any EPP operation takes longer than 30 seconds.

## Intercase dependencies

This test has no intercase dependencies.

## Ordered description of steps to be taken to execute the test case

1. Perform a DNS lookup for *EppDomUpdate01Name* domain name.  
   The result MUST NOT be NXDOMAIN.
2. Perform the same login as the login step in 2.8.  
   The login command MUST complete with result code 1000.
3. Create a domain update command with *EppDomUpdate01Name*.
   1. Add one or more secDNS records with dsData or keyData or both, depending on the value of *EppDomUpdate01KeyType*. Use appropriate values from *EppDomUpdate01DsKeyTag01*, *EppDomUpdate01DsAlg01*, *EppDomUpdate01DsDigestType01*, *EppDomUpdate01DsDigest01*, *EppDomUpdate01KdFlags01*, *EppDomUpdate01KdProtocol01*, *EppDomUpdate01KdAlg01*, *EppDomUpdate01kdPubKey01*.
   2. If domain update requires extra extension and values, create an extension part from *EppDomUpdate01Ext01Uri* and fill in field name from *EppDomUpdate01Ext01Field01* and values from *EppDomUpdate01Ext01Value01*.

The domain update command MUST complete with result code 1000 or 1001.

1. Create a logout command.  
   The logout command MUST complete with result code 1500.
2. Verify that the *EppDomUpdate01Name* domain is updated, with the correct DNSSEC records in the zone within 60 minutes.
3. Verify that the *EPPDomUpdate01Name* is visible in Whois as a DNSSEC signed domain within 60 minutes.

# EPP Extensions

## Test case identifier

EPPExtensions

## Objective

This test verifies compliance of the EPP server with extensions required by registry agreement.

## Inputs

The following information is needed as input for this test case:

* The extensions required by the Registry Agreement.
* Logfiles from login in any of the previous tests.

## Outcome(s)

Each extension in the Registry Agreement stated to be mandatory must be listed in the EPP greeting.

## Environmental needs

N/A

## Special procedural requirements

None.

## Intercase dependencies

A result log from any of the previous tests MUST be available.

## Ordered description of steps to be taken to execute the test case

1. Verify that each extension in the Registry Agreement that is stated to be mandatory is listed in the EPP greeting.

# Global

## Glossary

The glossary is available in the Master Test Plan.

## Document change procedures

Document change procedures are documented in the Master Test Plan.