



**@ FILE NAME: M\_CTC\_ID\_015.txt**

**@ TEST SCOPE: M PLANE O-RAN CONFORMANCE**

**@ Software Release for LPRU: v1.1.0**

**Test Description : This test validates that the O-RU can successfully perform a software download and software install procedure.**

**This scenario corresponds the following chapters in [3]:**

**5. Software Management.**

=====

**\*\*\*\*\* Connect to the NETCONF Server \*\*\*\*\***

=====

> connect --ssh --host 192.168.214.37 --port 830 --login operator

Interactive SSH Authentication

Type your password:

Password:

> status

Current NETCONF session:

ID : 12

Host : 192.168.214.37

Port : 830

Transport : SSH

Capabilities:

urn:ietf:params:netconf:base:1.0 urn:ietf:params:netconf:base:1.1 urn:ietf:params:netconf:capability:writable-running:1.0  
urn:ietf:params:netconf:capability:candidate:1.0 urn:ietf:params:netconf:capability:rollback-on-error:1.0  
urn:ietf:params:netconf:capability:validate:1.1 urn:ietf:params:netconf:capability:startup:1.0 urn:ietf:params:netconf:capability:xpath:1.0  
urn:ietf:params:netconf:capability:with-defaults:1.0?basic-mode=explicit&also-supported=report-all,report-all-tagged,trim,explicit  
urn:ietf:params:netconf:capability:notification:1.0 urn:ietf:params:netconf:capability:interleave:1.0  
urn:ietf:params:xml:ns:yang:ietf-yang-metadata?module=ietf-yang-metadata&revision=2016-08-05  
urn:ietf:params:xml:ns:yang:1?module=yang&revision=2017-02-20  
urn:ietf:params:xml:ns:yang:ietf-inet-types?module=ietf-inet-types&revision=2013-07-15  
urn:ietf:params:xml:ns:yang:ietf-yang-types?module=ietf-yang-types&revision=2013-07-15  
urn:ietf:params:netconf:capability:yang-library:1.1?revision=2019-01-04&content-id=61  
urn:sysrepo:plugind?module=sysrepo-plugind&revision=2020-12-10  
urn:ietf:params:xml:ns:yang:ietf-netconf-acm?module=ietf-netconf-acm&revision=2018-02-14  
urn:ietf:params:xml:ns:netconf:base:1.0?module=ietf-netconf&revision=2013-09-29&features=writable-running,candidate,rollback-on-error,valid  
ate,startup,url,xpath urn:ietf:params:xml:ns:yang:ietf-netconf-with-defaults?module=ietf-netconf-with-defaults&revision=2011-06-01  
urn:ietf:params:xml:ns:yang:ietf-netconf-notifications?module=ietf-netconf-notifications&revision=2012-02-06  
urn:ietf:params:xml:ns:yang:ietf-netconf-monitoring?module=ietf-netconf-monitoring&revision=2010-10-04  
urn:ietf:params:xml:ns:netconf:notification:1.0?module=notifications&revision=2008-07-14  
urn:ietf:params:xml:ns:netmod:notification?module=nc-notifications&revision=2008-07-14  
urn:ietf:params:xml:ns:yang:ietf-x509-cert-to-name?module=ietf-x509-cert-to-name&revision=2014-12-10  
urn:ietf:params:xml:ns:yang:iana-crypt-hash?module=iana-crypt-hash&revision=2014-08-06 urn:notification\_history?module=notification\_history  
urn:ietf:params:xml:ns:yang:iana-if-type?module=iana-if-type&revision=2017-01-19

=====

> subscribe

=====

Ok

---

---

## Initial Get Filter

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---

---

```
> get --filter-xpath /o-ran-software-management:software-inventory
```

---

```
<?xml version="1.0" ?>
<data xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0">
  <software-inventory xmlns="urn:o-ran:software-management:1.0">
    <software-slot>
      <name>swSlot1</name>
      <status>VALID</status>
      <active>false</active>
      <running>false</running>
      <access>READ_WRITE</access>
      <product-code>VVDN O-RU</product-code>
      <vendor-code>VN</vendor-code>
      <build-id>90f0b6c</build-id>
      <build-name>Beta Release</build-name>
      <build-version>1.0.9</build-version>
      <files>
        <name>boot</name>
        <version>1.0.0</version>
        <local-path>/media/sd-mmcb1k0p1/BOOT0001.BIN</local-path>
        <integrity>OK</integrity>
      </files>
      <files>
        <name>kernel</name>
        <version>1.0.0</version>
        <local-path>/media/sd-mmcb1k0p1/image0001.ub</local-path>
        <integrity>OK</integrity>
      </files>
      <files>
        <name>rootfs</name>
        <version>1.0.0</version>
        <local-path>/media/sd-mmcb1k0p2/</local-path>
        <integrity>OK</integrity>
      </files>
    </software-slot>
    <software-slot>
      <name>swSlot2</name>
      <status>VALID</status>
      <active>true</active>
      <running>true</running>
      <access>READ_WRITE</access>
      <product-code>VVDN O-RU</product-code>
```

```
<vendor-code>VN</vendor-code>
<build-id>90f0b6c</build-id>
<build-name>Beta Release</build-name>
<build-version>1.1.0</build-version>
<files>
  <name>boot</name>
  <version>1.0.0</version>
  <local-path>/media/sd-mmcb1k0p1/BOOT0002.BIN</local-path>
  <integrity>OK</integrity>
</files>
<files>
  <name>kernel</name>
  <version>1.0.0</version>
  <local-path>/media/sd-mmcb1k0p1/image0002.ub</local-path>
  <integrity>OK</integrity>
</files>
<files>
  <name>rootfs</name>
  <version>1.0.0</version>
  <local-path>/media/sd-mmcb1k0p3/</local-path>
  <integrity>OK</integrity>
</files>
</software-slot>
<software-slot>
  <name>swRecoverySlot</name>
  <status>VALID</status>
  <active>false</active>
  <running>false</running>
  <access>READ_ONLY</access>
  <product-code>VVDN=O-RU</product-code>
  <vendor-code>VN</vendor-code>
  <build-id>factory_img</build-id>
  <build-name>Beta Release</build-name>
  <build-version>1.0.9</build-version>
  <files>
    <name>boot</name>
    <version>1.0.0</version>
    <local-path>/media/sd-mmcb1k0p1/BOOT0003.BIN</local-path>
    <integrity>OK</integrity>
  </files>
  <files>
    <name>kernel</name>
    <version>1.0.0</version>
    <local-path>/media/sd-mmcb1k0p1/golden.ub</local-path>
    <integrity>OK</integrity>
  </files>
  <files>
    <name>rootfs</name>
    <version>1.0.0</version>
```

```
<local-path>/media/sd-mmcbk0p1/golden.ub</local-path>
<integrity>OK</integrity>
</files>
</software-slot>
</software-inventory>
</data>
```

## Step 1 : TER NETCONF Client triggers <rpc><software-download>

> **user-rpc**

\*\*\*\*\* Replace with below xml \*\*\*\*\*

```
<software-download xmlns="urn:o-ran:software-management:1.0">
<remote-file-path>sftp://vvdn@192.168.214.234:22/home/vvdn/Downloads/LPRU_currpt.zip</remote-file-path>
<password>
<password>vvdntech</password>
</password>
<server>
<keys>
<algorithm>secp256r1</algorithm>
<public-key>AAAAB3NzaC1yc2EAAAADAQABAAQCAQC0EVfAv8MI4ZsCWkGxxv36AwwOewJuHXxsiJDNYet2n02N9cbZgifa+Lt0ni4dG
jERFEq2YZCnaX4cuFnsLq8bUjBAuy0hyU2ACb5FohzIbZnMW4cUGkkFu453vTMA/SIZU47wK7Q5HbrTcJefuDkIUwPb+tnP7iT7YMx4c6
2h6I90/wt2hq8RMAC8PT1JAeVebyllrKbcI5g3N2NI6D8OGD0Coick7iczIlor/9ylshjdgIQdi8Bxnq9NhZD0zA2WvQI9eytlvut/uA6KWaiwF9C+O
C7Fhlf1O7jDoYXvZUIQa90c0EG4O962JB3SYxWchl4gYxmr6zAtu3TT4j</public-key>
</keys>
</server>
</software-download>
```

\*\*\*\*\* RPC Reply \*\*\*\*\*

```
<nc:rpc-reply xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="urn:uuid:46ba15d6-02d3-4757-b97a-551ef3a3cde4"><status
xmlns="urn:o-ran:software-management:1.0">STARTED</status><notification-timeout
xmlns="urn:o-ran:software-management:1.0">30</notification-timeout></nc:rpc-reply>
```

=====

**Step 2 : O-RU NETCONF Server sends <notification><download-event> with status COMPLETED to TER NETCONF Client**

=====

```
<?xml version="1.0" ?>
<notification xmlns="urn:ietf:params:xml:ns:netconf:notification:1.0">
  <eventTime>2000-11-04T00:28:58Z</eventTime>
  <download-event xmlns="urn:o-ran:software-management:1.0">
    <file-name>LPRU_currupt.zip</file-name>
    <status>COMPLETED</status>
  </download-event>
</notification>
```

=====

**Step 3 : TER NETCONF Client triggers <rpc><software-install> Slot must have attributes active = FALSE, running = FALSE.**

=====

SR_NO	Slot_Name		Active	Running
1	swSlot1	=	false	false
2	swSlot2	=	true	true

**> user-rpc**

=====

**\*\*\*\*\* Replace with below xml \*\*\*\*\***

=====

```
<software-install xmlns="urn:o-ran:software-management:1.0">
  <slot-name>swSlot1</slot-name>
  <file-names>/home/vvvn/Downloads/garuda_image/garuda/giru_RevAll_5.1.2.zip</file-names>
</software-install>
```

=====

**\*\*\*\*\* RPC Reply \*\*\*\*\***

=====

```
<nc:rpc-reply xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="urn:uuid:240f3900-8836-4881-8562-686525ff976f"><status
xmlns="urn:o-ran:software-management:1.0">STARTED</status></nc:rpc-reply>
```

=====

**Step 4 : O-RU NETCONF Server sends <notification><install-event> with status INTEGRITY ERROR or FILE ERROR**

=====

```
<?xml version="1.0" ?>
<notification xmlns="urn:ietf:params:xml:ns:netconf:notification:1.0">
  <eventTime>2000-11-04T00:29:05Z</eventTime>
  <install-event xmlns="urn:o-ran:software-management:1.0">
    <slot-name>swSlot1</slot-name>
    <status>INTEGRITY_ERROR</status>
    <error-message>md5sum mismatch</error-message>
  </install-event>
</notification>
```

---

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## POST GET AFTER INSTALL SW

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---

**> get --filter-xpath /o-ran-software-management:software-inventory**

---

```
<?xml version="1.0" ?>
<data xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0">
  <software-inventory xmlns="urn:o-ran:software-management:1.0">
    <software-slot>
      <name>swSlot1</name>
      <status>VALID</status>
      <active>false</active>
      <running>false</running>
      <access>READ_WRITE</access>
      <product-code>VVDN O-RU</product-code>
      <vendor-code>VN</vendor-code>
      <build-id>90f0b6c</build-id>
      <build-name>Beta Release</build-name>
      <build-version>1.0.9</build-version>
      <files>
        <name>boot</name>
        <version>1.0.0</version>
        <local-path>/media/sd-mmcb1k0p1/BOOT0001.BIN</local-path>
        <integrity>OK</integrity>
      </files>
      <files>
        <name>kernel</name>
        <version>1.0.0</version>
        <local-path>/media/sd-mmcb1k0p1/image0001.ub</local-path>
        <integrity>OK</integrity>
      </files>
      <files>
        <name>rootfs</name>
        <version>1.0.0</version>
        <local-path>/media/sd-mmcb1k0p2/</local-path>
        <integrity>OK</integrity>
      </files>
    </software-slot>
    <software-slot>
      <name>swSlot2</name>
      <status>VALID</status>
      <active>true</active>
      <running>true</running>
      <access>READ_WRITE</access>
      <product-code>VVDN O-RU</product-code>
```



```
<vendor-code>VN</vendor-code>
<build-id>90f0b6c</build-id>
<build-name>Beta Release</build-name>
<build-version>1.1.0</build-version>
<files>
  <name>boot</name>
  <version>1.0.0</version>
  <local-path>/media/sd-mmcb1k0p1/BOOT0002.BIN</local-path>
  <integrity>OK</integrity>
</files>
<files>
  <name>kernel</name>
  <version>1.0.0</version>
  <local-path>/media/sd-mmcb1k0p1/image0002.ub</local-path>
  <integrity>OK</integrity>
</files>
<files>
  <name>rootfs</name>
  <version>1.0.0</version>
  <local-path>/media/sd-mmcb1k0p3/</local-path>
  <integrity>OK</integrity>
</files>
</software-slot>
<software-slot>
  <name>swRecoverySlot</name>
  <status>VALID</status>
  <active>false</active>
  <running>false</running>
  <access>READ_ONLY</access>
  <product-code>VVDN=O-RU</product-code>
  <vendor-code>VN</vendor-code>
  <build-id>factory_img</build-id>
  <build-name>Beta Release</build-name>
  <build-version>1.0.9</build-version>
  <files>
    <name>boot</name>
    <version>1.0.0</version>
    <local-path>/media/sd-mmcb1k0p1/BOOT0003.BIN</local-path>
    <integrity>OK</integrity>
  </files>
  <files>
    <name>kernel</name>
    <version>1.0.0</version>
    <local-path>/media/sd-mmcb1k0p1/golden.ub</local-path>
    <integrity>OK</integrity>
  </files>
  <files>
    <name>rootfs</name>
    <version>1.0.0</version>
```

```
<local-path>/media/sd-mmcb1k0p1/golden.ub</local-path>  
<integrity>OK</integrity>  
</files>  
</software-slot>  
</software-inventory>  
</data>
```

## =====

**##### SYSTEM LOGS #####**

=====

Nov 4 00:28:47 vvdn\_lpru daemon.info netopeer2-server[858]: Trying to connect via IPv4 to 192.168.214.234:4334.

Nov 4 00:28:47 vvdn\_lpru daemon.info netopeer2-server[858]: getsockopt() error (Connection refused).

Nov 4 00:28:48 vvdn\_lpru daemon.info netopeer2-server[858]: Trying to connect via IPv4 to 192.168.214.234:4334.

Nov 4 00:28:48 vvdn\_lpru daemon.info netopeer2-server[858]: getsockopt() error (Connection refused).

Nov 4 00:28:49 vvdn\_lpru daemon.info netopeer2-server[858]: Trying to connect via IPv4 to 192.168.214.234:4334.

Nov 4 00:28:49 vvdn\_lpru daemon.info netopeer2-server[858]: Successfully connected to 192.168.214.234:4334 over IPv4.

Nov 4 00:28:49 vvdn\_lpru daemon.info netopeer2-server[858]: Session 206 (user "root", CID 1) created.

Nov 4 00:28:49 vvdn\_lpru daemon.info netopeer2-server[858]: Received an SSH message "request-service" of subtype "ssh-userauth".

Nov 4 00:28:49 vvdn\_lpru daemon.info netopeer2-server[858]: Received an SSH message "request-auth" of subtype "password".

Nov 4 00:28:49 vvdn\_lpru daemon.info netopeer2-server[858]: User "operator" authenticated.

Nov 4 00:28:49 vvdn\_lpru daemon.info netopeer2-server[858]: Received an SSH message "request-channel-open" of subtype "session".

Nov 4 00:28:49 vvdn\_lpru daemon.info netopeer2-server[858]: Received an SSH message "request-channel" of subtype "subsystem".

Nov 4 00:28:49 vvdn\_lpru daemon.info netopeer2-server[858]: Call Home client "default-client" session 12 established.

Nov 4 00:28:49 vvdn\_lpru daemon.info netopeer2-server[858]: Session 207 (user "root", CID 1) created.

Nov 4 00:28:49 vvdn\_lpru daemon.info netopeer2-server[858]: There are no subscribers for "ietf-netconf-notifications" notifications.

Nov 4 00:28:49 vvdn\_lpru daemon.info netopeer2-server[858]: Generated new event (netconf-session-start).

Nov 4 00:28:49 vvdn\_lpru daemon.info netopeer2-server[858]: Resolving unresolved data nodes and their constraints...

Nov 4 00:28:49 vvdn\_lpru daemon.info netopeer2-server[858]: All data nodes and constraints resolved.

Nov 4 00:28:49 vvdn\_lpru daemon.info netopeer2-server[858]: Resolving unresolved data nodes and their constraints...

Nov 4 00:28:49 vvdn\_lpru daemon.info netopeer2-server[858]: All data nodes and constraints resolved.

Nov 4 00:28:49 vvdn\_lpru daemon.info netopeer2-server[858]: Published event "rpc" "/ietf-netconf:get" with ID 18 priority 0 for 1 subscribers.

Nov 4 00:28:49 vvdn\_lpru daemon.info netopeer2-server[858]: Processing "/ietf-netconf:get" "rpc" event with ID 18 priority 0 (remaining 1 subscribers).

Nov 4 00:28:49 vvdn\_lpru daemon.info netopeer2-server[858]: Successful processing of "rpc" event with ID 18 priority 0 (remaining 0 subscribers).

Nov 4 00:28:49 vvdn\_lpru daemon.info netopeer2-server[858]: Event "rpc" with ID 18 priority 0 succeeded.

Nov 4 00:28:49 vvdn\_lpru daemon.info netopeer2-server[858]: Resolving unresolved data nodes and their constraints...

Nov 4 00:28:49 vvdn\_lpru daemon.info netopeer2-server[858]: All data nodes and constraints resolved.

Nov 4 00:28:49 vvdn\_lpru daemon.info netopeer2-server[858]: Session 12: thread 3 event new RPC.

Nov 4 00:28:49 vvdn\_lpru daemon.info netopeer2-server[858]: Resolving unresolved data nodes and their constraints...

Nov 4 00:28:49 vvdn\_lpru daemon.info netopeer2-server[858]: All data nodes and constraints resolved.

Nov 4 00:28:49 vvdn\_lpru daemon.info netopeer2-server[858]: Resolving unresolved data nodes and their constraints...

Nov 4 00:28:49 vvdn\_lpru daemon.info netopeer2-server[858]: All data nodes and constraints resolved.

Nov 4 00:28:49 vvdn\_lpru daemon.info netopeer2-server[858]: Published event "rpc" "/ietf-netconf:get" with ID 19 priority 0 for 1 subscribers.

Nov 4 00:28:49 vvdn\_lpru daemon.info netopeer2-server[858]: Processing "/ietf-netconf:get" "rpc" event with ID 19 priority 0 (remaining 1 subscribers).

Nov 4 00:28:49 vvdn\_lpru daemon.info netopeer2-server[858]: Published event "operational" "/o-ran-software-management:software-inventory" with ID 8.

Nov 4 00:28:49 vvdn\_lpru user.notice fw\_manager[929]: RPC #8 recieved. xpath -> /o-ran-software-management:software-inventory

Nov 4 00:28:49 vvdn\_lpru daemon.info netopeer2-server[858]: Event "operational" with ID 8 succeeded.

Nov 4 00:28:49 vvdn\_lpru daemon.info netopeer2-server[858]: Resolving unresolved data nodes and their constraints...

Nov 4 00:28:49 vvdn\_lpru daemon.info netopeer2-server[858]: There is no leafref

"/ietf-hardware:hardware/ietf-hardware:component/o-ran-hardware:product-code" with the value "VVDN O-RU", but it is not required.

Nov 4 00:28:49 vvdn\_lpru daemon.info netopeer2-server[858]: There is no leafref

"/ietf-hardware:hardware/ietf-hardware:component/o-ran-hardware:product-code" with the value "VVDN O-RU", but it is not required.

Nov 4 00:28:49 vvdn\_lpru daemon.info netopeer2-server[858]: There is no leafref  
"/ietf-hardware:hardware/ietf-hardware:component/o-ran-hardware:product-code" with the value "VVDN=O-RU", but it is not required.

Nov 4 00:28:49 vvdn\_lpru daemon.info netopeer2-server[858]: All data nodes and constraints resolved.

Nov 4 00:28:49 vvdn\_lpru daemon.info netopeer2-server[858]: Successful processing of "rpc" event with ID 19 priority 0 (remaining 0 subscribers).

Nov 4 00:28:49 vvdn\_lpru daemon.info netopeer2-server[858]: Event "rpc" with ID 19 priority 0 succeeded.

Nov 4 00:28:49 vvdn\_lpru daemon.info netopeer2-server[858]: Resolving unresolved data nodes and their constraints...

Nov 4 00:28:49 vvdn\_lpru daemon.info netopeer2-server[858]: All data nodes and constraints resolved.

Nov 4 00:28:49 vvdn\_lpru daemon.info netopeer2-server[858]: Resolving unresolved data nodes and their constraints...

Nov 4 00:28:49 vvdn\_lpru daemon.info netopeer2-server[858]: There is no leafref  
"/ietf-hardware:hardware/ietf-hardware:component/o-ran-hardware:product-code" with the value "VVDN O-RU", but it is not required.

Nov 4 00:28:49 vvdn\_lpru daemon.info netopeer2-server[858]: There is no leafref  
"/ietf-hardware:hardware/ietf-hardware:component/o-ran-hardware:product-code" with the value "VVDN O-RU", but it is not required.

Nov 4 00:28:49 vvdn\_lpru daemon.info netopeer2-server[858]: There is no leafref  
"/ietf-hardware:hardware/ietf-hardware:component/o-ran-hardware:product-code" with the value "VVDN=O-RU", but it is not required.

Nov 4 00:28:49 vvdn\_lpru daemon.info netopeer2-server[858]: All data nodes and constraints resolved.

Nov 4 00:28:49 vvdn\_lpru daemon.info netopeer2-server[858]: Session 12: thread 2 event new RPC.

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: Resolving unresolved data nodes and their constraints...

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: All data nodes and constraints resolved.

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: Resolving unresolved data nodes and their constraints...

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: All data nodes and constraints resolved.

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: Published event "rpc" "/ietf-netconf:get-config" with ID 17 priority 0 for 1 subscribers.

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: Processing "/ietf-netconf:get-config" "rpc" event with ID 17 priority 0 (remaining 1 subscribers).

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: Successful processing of "rpc" event with ID 17 priority 0 (remaining 0 subscribers).

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: Event "rpc" with ID 17 priority 0 succeeded.

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: Resolving unresolved data nodes and their constraints...

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: All data nodes and constraints resolved.

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: Resolving unresolved data nodes and their constraints...

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: There is no leafref  
"/ietf-hardware:hardware/ietf-hardware:component/ietf-hardware:name" with the value "ru-port0", but it is not required.

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: There is no leafref  
"/ietf-hardware:hardware/ietf-hardware:component/ietf-hardware:name" with the value "ru-port0", but it is not required.

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: All data nodes and constraints resolved.

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: Session 12: thread 0 event new RPC.

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: Resolving unresolved data nodes and their constraints...

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: All data nodes and constraints resolved.

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: Resolving unresolved data nodes and their constraints...

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: All data nodes and constraints resolved.

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: Published event "rpc" "/notifications:create-subscription" with ID 9 priority 0 for 1 subscribers.

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: Processing "/notifications:create-subscription" "rpc" event with ID 9 priority 0 (remaining 1 subscribers).

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: Successful processing of "rpc" event with ID 9 priority 0 (remaining 0 subscribers).

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: Event "rpc" with ID 9 priority 0 succeeded.

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: Session 12: thread 2 event new RPC.

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: Resolving unresolved data nodes and their constraints...

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: All data nodes and constraints resolved.

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: Resolving unresolved data nodes and their constraints...

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: All data nodes and constraints resolved.

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: Published event "rpc" "/ietf-netconf:get" with ID 20 priority 0 for 1 subscribers.

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: Processing "/ietf-netconf:get" "rpc" event with ID 20 priority 0 (remaining 1 subscribers).

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: Published event "operational" "/o-ran-software-management:software-inventory" with ID 9.

Nov 4 00:28:50 vvdn\_lpru user.notice fw\_manager[929]: RPC #9 recieved. xpath -> /o-ran-software-management:software-inventory

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: Event "operational" with ID 9 succeeded.

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: Resolving unresolved data nodes and their constraints...

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: There is no leafref  
"/ietf-hardware:hardware/ietf-hardware:component/o-ran-hardware:product-code" with the value "VVDN O-RU", but it is not required.

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: There is no leafref  
"/ietf-hardware:hardware/ietf-hardware:component/o-ran-hardware:product-code" with the value "VVDN O-RU", but it is not required.

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: There is no leafref  
"/ietf-hardware:hardware/ietf-hardware:component/o-ran-hardware:product-code" with the value "VVDN=O-RU", but it is not required.

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: All data nodes and constraints resolved.

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: Successful processing of "rpc" event with ID 20 priority 0 (remaining 0 subscribers).

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: Event "rpc" with ID 20 priority 0 succeeded.

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: Resolving unresolved data nodes and their constraints...

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: All data nodes and constraints resolved.

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: Resolving unresolved data nodes and their constraints...

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: There is no leafref  
"/ietf-hardware:hardware/ietf-hardware:component/o-ran-hardware:product-code" with the value "VVDN O-RU", but it is not required.

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: There is no leafref  
"/ietf-hardware:hardware/ietf-hardware:component/o-ran-hardware:product-code" with the value "VVDN O-RU", but it is not required.

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: There is no leafref  
"/ietf-hardware:hardware/ietf-hardware:component/o-ran-hardware:product-code" with the value "VVDN=O-RU", but it is not required.

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: All data nodes and constraints resolved.

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: Session 12: thread 2 event new RPC.

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: Resolving unresolved data nodes and their constraints...

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: All data nodes and constraints resolved.

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: Resolving unresolved data nodes and their constraints...

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: All data nodes and constraints resolved.

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: Published event "rpc" "/o-ran-software-management:software-download" with ID 1 priority 0 for 1 subscribers.

Nov 4 00:28:50 vvdn\_lpru user.notice fw\_manager[929]: RPC #1 recieved. xpath -> /o-ran-software-management:software-download

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: Event "rpc" with ID 1 priority 0 succeeded.

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: Resolving unresolved data nodes and their constraints...

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: All data nodes and constraints resolved.

Nov 4 00:28:50 vvdn\_lpru daemon.info netopeer2-server[858]: Session 12: thread 0 event new RPC.

Nov 4 00:28:57 vvdn\_lpru user.notice fw\_manager[929]: Function isDownloadCompleted setting error code 0

Nov 4 00:28:58 vvdn\_lpru daemon.info netopeer2-server[858]: Processing "notif" "o-ran-software-management" event with ID 1.

Nov 4 00:28:58 vvdn\_lpru daemon.info netopeer2-server[858]: Successful processing of "notif" event with ID 1 priority 0 (remaining 0 subscribers).

Nov 4 00:28:58 vvdn\_lpru daemon.info netopeer2-server[858]: Resolving unresolved data nodes and their constraints...

Nov 4 00:28:58 vvdn\_lpru daemon.info netopeer2-server[858]: Must condition "/software-inventory/software-slot[name = current()][active = 'false' and running = 'false']" not satisfied, but it is not required.

Nov 4 00:28:58 vvdn\_lpru daemon.info netopeer2-server[858]: All data nodes and constraints resolved.

Nov 4 00:28:58 vvdn\_lpru daemon.info netopeer2-server[858]: Published event "operational" "/o-ran-software-management:software-inventory" with ID 10.

Nov 4 00:28:58 vvdn\_lpru user.notice fw\_manager[929]: RPC #10 recieved. xpath -> /o-ran-software-management:software-inventory

Nov 4 00:28:58 vvdn\_lpru daemon.info netopeer2-server[858]: Event "operational" with ID 10 succeeded.

Nov 4 00:28:58 vvdn\_lpru daemon.info netopeer2-server[858]: Resolving unresolved data nodes and their constraints...

Nov 4 00:28:58 vvdn\_lpru daemon.info netopeer2-server[858]: There is no leafref  
"/ietf-hardware:hardware/ietf-hardware:component/o-ran-hardware:product-code" with the value "VVDN O-RU", but it is not required.

Nov 4 00:28:58 vvdn\_lpru daemon.info netopeer2-server[858]: There is no leafref  
"/ietf-hardware:hardware/ietf-hardware:component/o-ran-hardware:product-code" with the value "VVDN O-RU", but it is not required.

Nov 4 00:28:58 vvdn\_lpru daemon.info netopeer2-server[858]: There is no leafref  
"/ietf-hardware:hardware/ietf-hardware:component/o-ran-hardware:product-code" with the value "VVDN=O-RU", but it is not required.

Nov 4 00:28:58 vvdn\_lpru daemon.info netopeer2-server[858]: All data nodes and constraints resolved.

Nov 4 00:28:58 vvdn\_lpru daemon.info netopeer2-server[858]: Resolving unresolved data nodes and their constraints...

Nov 4 00:28:58 vvdn\_lpru daemon.info netopeer2-server[858]: All data nodes and constraints resolved.

Nov 4 00:28:58 vvdn\_lpru daemon.info netopeer2-server[858]: Published event "rpc" "/o-ran-software-management:software-install" with ID 1 priority 0 for 1 subscribers.

Nov 4 00:28:58 vvdn\_lpru user.notice fw\_manager[929]: RPC #1 recieved. xpath -> /o-ran-software-management:software-install

Nov 4 00:28:58 vvdn\_lpru user.notice fw\_manager[929]: swSlot1 selected

Nov 4 00:28:58 vvdn\_lpru daemon.info netopeer2-server[858]: Event "rpc" with ID 1 priority 0 succeeded.

Nov 4 00:28:58 vvdn\_lpru daemon.info netopeer2-server[858]: Resolving unresolved data nodes and their constraints...

Nov 4 00:28:58 vvdn\_lpru daemon.info netopeer2-server[858]: All data nodes and constraints resolved.

Nov 4 00:28:58 vvdn\_lpru daemon.info netopeer2-server[858]: Session 12: thread 0 event new RPC.

Nov 4 00:28:59 vvdn\_lpru user.notice SYNCMNGR[1175]: Received message from S-Plane

Nov 4 00:29:05 vvdn\_lpru user.err fw\_manager[929]: swInstall failed :Reason: md5sum mismatch

Nov 4 00:29:05 vvdn\_lpru user.notice fw\_manager[929]: RPC #11 recieved. xpath -> /o-ran-software-management:software-inventory

Nov 4 00:29:06 vvdn\_lpru user.err FAULT MANAGER[873]: sendData : Source ID: 17

Nov 4 00:29:06 vvdn\_lpru user.err FAULT MANAGER[873]: sendData : Fault ID: 23

Nov 4 00:29:06 vvdn\_lpru user.err FAULT MANAGER[873]: sendData : FAULT\_IS\_CLEARED: FALSE

Nov 4 00:29:06 vvdn\_lpru user.err FAULT MANAGER[873]: sendData : FAULT\_SEVERITY: 2

Nov 4 00:29:06 vvdn\_lpru user.err FAULT MANAGER[873]: sendData : FAULT\_TIME: 2000-11-04T00:29:06Z

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: Resolving unresolved data nodes and their constraints...

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: There is no instance of  
"/notification\_history:history/module-notification[module-name='Initialization Fault']", but it is not required.

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: There is no instance of  
"/notification\_history:history/module-notification[module-name='Initialization Fault']/module-name", but it is not required.

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: All data nodes and constraints resolved.

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: Processing "notif" "ietf-netconf-notifications" event with ID 1.

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: Successful processing of "notif" event with ID 1 priority 0 (remaining 0 subscribers).

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: Resolving unresolved data nodes and their constraints...

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: There is no instance of  
"/notification\_history:history/module-notification[module-name='Initialization Fault']/notif-error", but it is not required.

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: All data nodes and constraints resolved.

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: Processing "notif" "ietf-netconf-notifications" event with ID 2.

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: Successful processing of "notif" event with ID 2 priority 0 (remaining 0 subscribers).



Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: Resolving unresolved data nodes and their constraints...

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: There is no instance of  
"/notification\_history:history/module-notification[module-name='Initialization Fault']/alert", but it is not required.

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: All data nodes and constraints resolved.

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: Processing "notif" "ietf-netconf-notifications" event with ID 3.

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: Successful processing of "notif" event with ID 3 priority 0 (remaining 0 subscribers).

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: Processing "notif" "o-ran-fm" event with ID 1.

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: Successful processing of "notif" event with ID 1 priority 0 (remaining 0 subscribers).

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: Resolving unresolved data nodes and their constraints...

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: There is no instance of  
"/notification\_history:history/module-notification[module-name='Initialization Fault']/epochtime", but it is not required.

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: All data nodes and constraints resolved.

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: Processing "notif" "ietf-netconf-notifications" event with ID 4.

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: Successful processing of "notif" event with ID 4 priority 0 (remaining 0 subscribers).

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: Resolving unresolved data nodes and their constraints...

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: There is no leafref "/software-inventory/software-slot/name" with the value  
"swSlot1", but it is not required.

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: All data nodes and constraints resolved.

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: Processing "notif" "o-ran-software-management" event with ID 2.

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: Successful processing of "notif" event with ID 2 priority 0 (remaining 0 subscribers).

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: Resolving unresolved data nodes and their constraints...

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: All data nodes and constraints resolved.

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: Resolving unresolved data nodes and their constraints...

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: All data nodes and constraints resolved.

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: Published event "rpc" "/ietf-netconf:get" with ID 21 priority 0 for 1 subscribers.

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: Processing "/ietf-netconf:get" "rpc" event with ID 21 priority 0 (remaining 1 subscribers).

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: Published event "operational" "/o-ran-software-management:software-inventory" with ID 12.

Nov 4 00:29:06 vvdn\_lpru user.notice fw\_manager[929]: RPC #12 recieved. xpath -> /o-ran-software-management:software-inventory

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: Event "operational" with ID 12 succeeded.

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: Resolving unresolved data nodes and their constraints...

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: There is no leafref  
"/ietf-hardware:hardware/ietf-hardware:component/o-ran-hardware:product-code" with the value "VVDN O-RU", but it is not required.

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: There is no leafref  
"/ietf-hardware:hardware/ietf-hardware:component/o-ran-hardware:product-code" with the value "VVDN O-RU", but it is not required.

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: There is no leafref  
"/ietf-hardware:hardware/ietf-hardware:component/o-ran-hardware:product-code" with the value "VVDN=O-RU", but it is not required.

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: All data nodes and constraints resolved.

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: Successful processing of "rpc" event with ID 21 priority 0 (remaining 0 subscribers).

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: Event "rpc" with ID 21 priority 0 succeeded.

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: Resolving unresolved data nodes and their constraints...

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: All data nodes and constraints resolved.

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: Resolving unresolved data nodes and their constraints...

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: There is no leafref  
"/ietf-hardware:hardware/ietf-hardware:component/o-ran-hardware:product-code" with the value "VVDN O-RU", but it is not required.

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: There is no leafref  
"/ietf-hardware:hardware/ietf-hardware:component/o-ran-hardware:product-code" with the value "VVDN O-RU", but it is not required.

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: There is no leafref  
"/ietf-hardware:hardware/ietf-hardware:component/o-ran-hardware:product-code" with the value "VVDN=O-RU", but it is not required.

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: All data nodes and constraints resolved.

Nov 4 00:29:06 vvdn\_lpru daemon.info netopeer2-server[858]: Session 12: thread 4 event new RPC.

Nov 4 00:29:11 vvdn\_lpru daemon.info netopeer2-server[858]: Session 12: thread 1 event new RPC.

Nov 4 00:29:11 vvdn\_lpru daemon.info netopeer2-server[858]: Session 12: thread 1 event session terminated.

Nov 4 00:29:11 vvdn\_lpru daemon.info netopeer2-server[858]: There are no subscribers for "ietf-netconf-notifications" notifications.

Nov 4 00:29:11 vvdn\_lpru daemon.info netopeer2-server[858]: Generated new event (netconf-session-end).

Nov 4 00:29:11 vvdn\_lpru daemon.info netopeer2-server[858]: Call Home client "default-client" session terminated.

Nov 4 00:29:11 vvdn\_lpru daemon.info netopeer2-server[858]: Trying to connect via IPv4 to 192.168.214.234:4334.

Nov 4 00:29:11 vvdn\_lpru daemon.info netopeer2-server[858]: getsockopt() error (Connection refused).

Nov 4 00:29:11 vvdn\_lpru authpriv.debug sshd[23362]: pam\_unix(sshd:account): account operator has password changed in future

Nov 4 00:29:11 vvdn\_lpru auth.info sshd[23362]: Accepted password for operator from 192.168.214.234 port 57256 ssh2

Nov 4 00:29:11 vvdn\_lpru authpriv.info sshd[23362]: pam\_unix(sshd:session): session opened for user operator by (uid=0)



**Expected Result : The O-RU NETCONF Server determines that the software file is invalid and sends <notification><install event><status> to the TER NETCONF Client. The Field <status> is correctly updated with one of the following status: FILE\_ERROR or INTEGRITY\_ERROR.**

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\*\*\*\*\* Actual Result \*\*\*\*\*

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<b>O-RU Software Update (negative case)</b>	<b>=</b>	<b>SUCCESS</b>
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