A YANG Data Model for NTP

draft-ietf-ntp-yang-data-model-01

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Introduction

Yang Data Model	Management of NTP demon – client and server	Configurations
		State
	NTP as per RFC 5905	Most features of NTPv4 are covered

Recent Changes

Added different yang tree for configuring NTP unicast

- Separated from association tree, which is now read-only
- Aligned with all other NTP modes

Examples are added

- Examples on how the Yang model would be used for configuration and operational state

Modification in clock-state container

- A reference to association is added

Interface container name is updated

Yang tree for Unicast

- Earlier Unicast configuration was part of Associations container, now it's a separate tree.
- Changes
  - New list is added for unicast configurations
  - New leaf added
    - local-mode
    - isConfigured


```
+--rw unicast* [address type]
|  +--rw address              inet:host
|  +--rw type                 unicast-configuration-type
|  +--rw authentication
|  |  +--rw (authentication-type)?
|  |     +--:(symmetric-key)
|  |        +--rw key-id?    -> /ntp/authentication/authentication-keys/key-id
|  +--rw prefer?              boolean
|  +--rw burst?               boolean
|  +--rw iburst?              boolean
|  +--rw source?              if:interface-ref
|  +--rw minpoll?             ntp-minpoll
|  +--rw maxpoll?             ntp-maxpoll
|  +--rw port?                uint16
|  +--rw version?             ntp-version
+--ro associations* [address local-mode isConfigured]
|  +--ro address              inet:host
|  +--ro local-mode           association-modes
|  +--ro isConfigured         boolean
|  +--ro stratum?             ntp-stratum
|  +--ro refid?               union
|  +--ro authentication?      -> /ntp/authentication/authentication-keys/key-id
|  +--ro prefer?              boolean
|  +--ro peer-interface?      if:interface-ref
|  +--ro minpoll?             ntp-minpoll
|  +--ro maxpoll?             ntp-maxpoll
|  +--ro port?                uint16
|  +--ro version?             ntp-version
|  +--ro reach?               uint8
|  +--ro unreach?             uint8
|  +--ro poll?                uint8
|  +--ro now?                 uint32
|  +--ro offset?              decimal64
|  +--ro delay?               decimal64
|  +--ro dispersion?          decimal64
|  +--ro originate-time?      yang:date-and-time
|  +--ro receive-time?        yang:date-and-time
|  +--ro transmit-time?       yang:date-and-time
|  +--ro input-time?          yang:date-and-time
|  +--ro ntp-statistics
|     +--ro packet-sent?         yang:counter32
|     +--ro packet-sent-fail?    yang:counter32
|     +--ro packet-received?     yang:counter32
|     +--ro packet-dropped?      yang:counter32
```

Yang Example

- Unicast configuration example.


```
<edit-config xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
  <target>
    <running/>
  </target>
  <config>
    <ntp xmlns="urn:ietf:params:xml:ns:yang:ietf-ntp">
      <unicast>
        <address>1.1.1.1</address>
        <type>server</type>
        <prefer>true</prefer>
        <version>4</version>
        <port>1025</port>
        <authentication>
          <symmetric-key>
            <key-id>10</key-id>
          </symmetric-key>
        </authentication>
      </unicast>
    </ntp>
  </config>
</edit-config>
```

- Unicast display example.

```
<get>
  <filter type="subtree">
    <sys:ntp xmlns:sys="urn:ietf:params:xml:ns:yang:ietf-ntp">
      <sys:unicast>
      </sys:unicast>
    </sys:ntp>
  </filter>
</get>

<data xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
  <ntp xmlns="urn:ietf:params:xml:ns:yang:ietf-ntp">
    <unicast>
      <address>1.1.1.1</address>
      <type>server</type>
      <authentication>
        <symmetric-key>
          <key-id>10</key-id>
        </symmetric-key>
      </authentication>
      <prefer>true</prefer>
      <burst>false</burst>
      <iburst>true</iburst>
      <source/>
      <minpoll>6</minpoll>
      <maxpoll>10</maxpoll>
      <port>1025</port>
      <version>4</version>
    </unicast>
  </ntp>
</data>
```

Yang Example

- Reference clock configuration example.

```
<edit-config xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
  <target>
    <running/>
  </target>
  <config>
    <ntp xmlns="urn:ietf:params:xml:ns:yang:ietf-ntp">
      <refclock-master>
        <master-stratum>8</master-stratum>
      </refclock-master>
    </ntp>
  </config>
</edit-config>
```

- Reference clock operational state
  - display example.

```
<get>
  <filter type="subtree">
    <sys:ntp xmlns:sys="urn:ietf:params:xml:ns:yang:ietf-ntp">
      <sys:refclock-master>
      </sys:refclock-master>
    </sys:ntp>
  </filter>
</get>

<data xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
  <ntp xmlns="urn:ietf:params:xml:ns:yang:ietf-ntp">
    <refclock-master>
      <master-stratum>8</master-stratum>
    </refclock-master>
  </ntp>
</data>
```

- Global packet statistics operational state
  - display example.

```
<get>
  <filter type="subtree">
    <sys:ntp xmlns:sys="urn:ietf:params:xml:ns:yang:ietf-ntp">
      <sys:ntp-statistics>
      </sys:ntp-statistics>
    </sys:ntp>
  </filter>
</get>

<data xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
  <ntp xmlns="urn:ietf:params:xml:ns:yang:ietf-ntp">
    <ntp-statistics>
      <packet-sent>30</packet-sent>
      <packet-sent-fail>5</packet-sent-fail>
      <packet-received>20</packet-received>
      <packet-dropped>2</packet-dropped>
    </ntp-statistics>
  </ntp>
</data>
```

Yang Example

- Authentication configuration example.

```
<edit-config xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
  <target>
    <running/>
  </target>
  <config>
    <ntp xmlns="urn:ietf:params:xml:ns:yang:ietf-ntp">
      <authentication>
        <auth-enabled>true</auth-enabled>
        <authentication-keys>
          <key-id>10</key-id>
          <algorithm>md5</algorithm>
          <password>abcd</password>
        </authentication-keys>
      </authentication>
    </ntp>
  </config>
</edit-config>
```

- Authentication operational state
  - display example.

```
<get>
  <filter type="subtree">
    <sys:ntp xmlns:sys="urn:ietf:params:xml:ns:yang:ietf-ntp">
      <sys:authentication>
      </sys:authentication>
    </sys:ntp>
  </filter>
</get>

<data xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
  <ntp xmlns="urn:ietf:params:xml:ns:yang:ietf-ntp">
    <authentication>
      <auth-enabled>false</auth-enabled>
      <trusted-keys/>
      <authentication-keys>
        <key-id>10</key-id>
        <algorithm>md5</algorithm>
        <password></password>
      </authentication-keys>
    </authentication>
  </ntp>
</data>
```

Yang Example

- Access-rules configuration.

```
<edit-config xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
  <target>
    <running/>
  </target>
  <config>
    <ntp xmlns="urn:ietf:params:xml:ns:yang:ietf-ntp">
      <access-rules>
        <access-rule>
          <access-mode>peer</access-mode>
          <acl>2000</acl>
        </access-rule>
      </access-rules>
    </ntp>
  </config>
</edit-config>
```

- Access-rule operational
  - display example.

```
<get>
  <filter type="subtree">
    <sys:ntp xmlns:sys="urn:ietf:params:xml:ns:yang:ietf-ntp">
      <sys:access-rules>
      </sys:access-rules>
    </sys:ntp>
  </filter>
</get>

<data xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
  <ntp xmlns="urn:ietf:params:xml:ns:yang:ietf-ntp">
    <access-rules>
      <access-rule>
        <access-mode>peer</access-mode>
        <acl>2000</acl>
      </access-rule>
    </access-rules>
  </ntp>
</data>
```

Yang Example

- Multicast Server configuration example.

```
<edit-config xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
  <target>
    <running/>
  </target>
  <config>
    <ntp xmlns="urn:ietf:params:xml:ns:yang:ietf-ntp">
      <interfaces>
        <interface>
          <name>Ethernet3/0/0</name>
          <multicast-server>
            <address>224.1.1.1</address>
            <authentication>
              <symmetric-key>
                <key-id>10</key-id>
              </symmetric-key>
            </authentication>
            <port>1025</port>
          </multicast-server>
        </interface>
      </interfaces>
    </ntp>
  </config>
</edit-config>
```

- Multicast Server operational state
  - display example.

```
<get>
  <filter type="subtree">
    <sys:ntp xmlns:sys="urn:ietf:params:xml:ns:yang:ietf-ntp">
      <sys:interfaces>
        <sys:interface>
          <sys:multicast-server>
          </sys:multicast-server>
        </sys:interface>
      </sys:interfaces>
    </sys:ntp>
  </filter>
</get>

<data xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
  <ntp xmlns="urn:ietf:params:xml:ns:yang:ietf-ntp">
    <interfaces>
      <interface>
        <name>Ethernet3/0/0</name>
        <multicast-server>
          <address>224.1.1.1</address>
          <ttl>255</ttl>
          <authentication>
            <symmetric-key>
              <key-id>10</key-id>
            </symmetric-key>
          </authentication>
          <minpoll>6</minpoll>
          <maxpoll>10</maxpoll>
          <port>1025</port>
          <version>3</version>
        </multicast-server>
      </interface>
    </interfaces>
  </ntp>
</data>
```

Yang Example

- Multicast Client configuration example.

```xml
<edit-config xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
   <target>
      <running/>
   </target>
   <config>
      <ntp xmlns="urn:ietf:params:xml:ns:yang:ietf-ntp">
         <interfaces>
            <interface>
               <name>Ethernet3/0/0</name>
               <multicast-client>
                  <address>224.1.1.1</address>
               </multicast-client>
            </interface>
         </interfaces>
      </ntp>
   </config>
</edit-config>
```

- Multicast Client operational state
  - display example.

```xml
<get>
   <filter type="subtree">
      <sys:ntp xmlns:sys="urn:ietf:params:xml:ns:yang:ietf-ntp">
         <sys:interfaces>
            <sys:interface>
               <sys:multicast-client>
               </sys:multicast-client>
            </sys:interface>
         </sys:interfaces>
      </sys:ntp>
   </filter>
</get>

<data xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
   <ntp xmlns="urn:ietf:params:xml:ns:yang:ietf-ntp">
      <interfaces>
         <interface>
            <name>Ethernet3/0/0</name>
            <multicast-client>
               <address>224.1.1.1</address>
            </multicast-client>
         </interface>
      </interfaces>
   </ntp>
</data>
```

Yang Example

- Manycast Server configuration example.

```
<edit-config xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
  <target>
    <running/>
  </target>
  <config>
    <ntp xmlns="urn:ietf:params:xml:ns:yang:ietf-ntp">
      <interfaces>
        <interface>
          <name>Ethernet3/0/0</name>
          <manycast-server>
            <address>224.1.1.1</address>
          </manycast-server>
        </interface>
      </interfaces>
    </ntp>
  </config>
</edit-config>
```

- Manycast Server operational state
  - display example.

```
<get>
  <filter type="subtree">
    <sys:ntp xmlns:sys="urn:ietf:params:xml:ns:yang:ietf-ntp">
      <sys:interfaces>
        <sys:interface>
          <sys:manycast-server>
          </sys:manycast-server>
        </sys:interface>
      </sys:interfaces>
    </sys:ntp>
  </filter>
</get>

<data xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
  <ntp xmlns="urn:ietf:params:xml:ns:yang:ietf-ntp">
    <interfaces>
      <interface>
        <name>Ethernet3/0/0</name>
        <manycast-server>
          <address>224.1.1.1</address>
        </manycast-server>
      </interface>
    </interfaces>
  </ntp>
</data>
```

Yang Example

- Manycast Client configuration example.

```
<edit-config xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
  <target>
    <running/>
  </target>
  <config>
    <ntp xmlns="urn:ietf:params:xml:ns:yang:ietf-ntp">
      <interfaces>
        <interface>
          <name>Ethernet3/0/0</name>
          <manycast-client>
            <address>224.1.1.1</address>
            <authentication>
              <symmetric-key>
                <key-id>10</key-id>
              </symmetric-key>
            </authentication>
            <port>1025</port>
          </manycast-client>
        </interface>
      </interfaces>
    </ntp>
  </config>
</edit-config>
```

- Manycast Client operational state
  - display example.

```
<get>
  <filter type="subtree">
    <sys:ntp xmlns:sys="urn:ietf:params:xml:ns:yang:ietf-ntp">
      <sys:interfaces>
        <sys:interface>
          <sys:manycast-client>
          </sys:manycast-client>
        </sys:interface>
      </sys:interfaces>
    </sys:ntp>
  </filter>
</get>

<data xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
  <ntp xmlns="urn:ietf:params:xml:ns:yang:ietf-ntp">
    <interfaces>
      <interface>
        <name>Ethernet3/0/0</name>
        <manycast-client>
          <address>224.1.1.1</address>
          <authentication>
            <symmetric-key>
              <key-id>10</key-id>
            </symmetric-key>
          </authentication>
          <ttl>255</ttl>
          <minclock>3</minclock>
          <maxclock>10</maxclock>
          <beacon>6</beacon>
          <minpoll>6</minpoll>
          <maxpoll>10</maxpoll>
          <port>1025</port>
        </manycast-client>
      </interface>
    </interfaces>
  </ntp>
</data>
```

Yang Example

- Display clock state example.

```
<get>
  <filter type="subtree">
    <sys:ntp xmlns:sys="urn:ietf:params:xml:ns:yang:ietf-ntp">
      <sys:clock-state>
      </sys:clock-state>
    </sys:ntp>
  </filter>
</get>

<data xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
  <ntp xmlns="urn:ietf:params:xml:ns:yang:ietf-ntp">
    <clock-state>
      <system-status>
        <clock-state>synchronized</clock-state>
        <clock-stratum>7</clock-stratum>
        <clock-refid>1.1.1.1</clock-refid>
        <associations-address>1.1.1.1</associations-address>
        <associations-local-mode>client</associations-local-mode>
        <associations-isConfigured>yes</associations-isConfigured>
        <nominal-freq>100.0</nominal-freq>
        <actual-freq>100.0</actual-freq>
        <clock-precision>18</clock-precision>
        <clock-offset>0.025</clock-offset>
        <root-delay>0.5</root-delay>
        <root-dispersion>0.8</root-dispersion>
        <reference-time>10-10-2017 07:33:55.258 Z+05:30</reference-time>
        <sync-state>clock-synchronized</sync-state>
      </system-status>
    </clock-state>
  </ntp>
</data>
```

Yang Example

- Display association example.

```
<get>
  <filter type="subtree">
    <sys:ntp xmlns:sys="urn:ietf:params:xml:ns:yang:ietf-ntp">
      <sys:associations>
      </sys:associations>
    </sys:ntp>
  </filter>
</get>

<data xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
  <ntp xmlns="urn:ietf:params:xml:ns:yang:ietf-ntp">
    <associations>
      <address>1.1.1.1</address>
      <stratum>9</stratum>
      <refid>20.1.1.1</refid>
      <local-mode>client</local-mode>
      <isConfigured>true</isConfigured>
      <authentication-key>10</authentication-key>
      <prefer>true</prefer>
      <peer-interface>Ethernet3/0/0</peer-interface>
      <minpoll>6</minpoll>
      <maxpoll>10</maxpoll>
      <port>1025</port>
      <version>4</version>
      <reach>255</reach>
      <unreach>0</unreach>
      <poll>128</poll>
      <now>10</now>
      <offset>0.025</offset>
      <delay>0.5</delay>
      <dispersion>0.6</dispersion>
      <originate-time>10-10-2017 07:33:55.253 Z+05:30</originate-time>
      <receive-time>10-10-2017 07:33:55.258 Z+05:30</receive-time>
      <transmit-time>10-10-2017 07:33:55.300 Z+05:30</transmit-time>
      <input-time>10-10-2017 07:33:55.305 Z+05:30</input-time>
      <ntp-statistics>
        <packet-sent>20</packet-sent>
        <packet-sent-fail>0</packet-sent-fail>
        <packet-received>20</packet-received>
        <packet-dropped>0</packet-dropped>
      </ntp-statistics>
    </associations>
  </ntp>
</data>
```

Modification in clock-state container

- *Leaf reference is added to store keys of ntp association.*

```
+--ro clock-state
|  +--ro system-status
|     +--ro clock-state                ntp-clock-status
|     +--ro clock-stratum              ntp-stratum
|     +--ro clock-refid                union
|     +--ro associations-address?      -> /ntp/associations/address
|     +--ro associations-local-mode?   -> /ntp/associations/local-mode
|     +--ro associations-isConfigured? -> /ntp/associations/isConfigured
|     +--ro nominal-freq               decimal64
|     +--ro actual-freq                decimal64
|     +--ro clock-precision            uint8
|     +--ro clock-offset?              decimal64
|     +--ro root-delay?                decimal64
|     +--ro root-dispersion?           decimal64
|     +--ro reference-time?            yang:date-and-time
|     +--ro sync-state                 ntp-sync-state
```

Interface container name is updated

- Name used for Interface container was creating confusion, so we have updated and made same mentioned in ietf-interfaces.

```
+--rw interfaces
  +--rw interface* [name]
    +--rw name                    if:interface-ref
    +--rw broadcast-server!
    | +--rw ttl?                  uint8
    | +--rw authentication
    | | +--rw (authentication-type)?
    | |   +--:(symmetric-key)
    | |     +--rw key-id?    -> /ntp/authentication/authentication-keys/key-id
    | +--rw minpoll?              ntp-minpoll
    | +--rw maxpoll?              ntp-maxpoll
    | +--rw port?                 uint16
    | +--rw version?              ntp-version
    +--rw broadcast-client!
    +--rw multicast-server* [address]
    | +--rw address               rt-types:ip-multicast-group-address
    | +--rw ttl?                  uint8
    | +--rw authentication
    | | +--rw (authentication-type)?
    | |   +--:(symmetric-key)
    | |     +--rw key-id?    -> /ntp/authentication/authentication-keys/key-id
    | +--rw minpoll?              ntp-minpoll
    | +--rw maxpoll?              ntp-maxpoll
    | +--rw port?                 uint16
    | +--rw version?              ntp-version
    +--rw multicast-client* [address]
    | +--rw address     rt-types:ip-multicast-group-address
    +--rw manycast-server* [address]
    | +--rw address     rt-types:ip-multicast-group-address
    +--rw manycast-client* [address]
      +--rw address               rt-types:ip-multicast-group-address
      +--rw authentication
      | +--rw (authentication-type)?
      |   +--:(symmetric-key)
      |     +--rw key-id?    -> /ntp/authentication/authentication-keys/key-id
      +--rw ttl?                  uint8
      +--rw minclock?             uint8
      +--rw maxclock?             uint8
      +--rw beacon?               uint8
      +--rw minpoll?              ntp-minpoll
      +--rw maxpoll?              ntp-maxpoll
      +--rw port?                 uint16
      +--rw version?              ntp-version
```

Next Step

- More reviews
  - Review comments are always welcome!

Thank You!

NTP Yang

```
module: ietf-ntp
  +--rw ntp!
     +--rw port?                  uint16
     +--rw refclock-master!
     |  +--rw master-stratum?   ntp-stratum
     +--rw authentication
     |  +--rw auth-enabled?           boolean
     |  +--rw trusted-keys* [key-id]
     |  |  +--rw key-id       -> /ntp/authentication/authentication-keys/key-id
     |  +--rw authentication-keys* [key-id]
     |     +--rw key-id       uint32
     |     +--rw algorithm?    identityref
     |     +--rw password?     ianach:crypt-hash
     +--rw access-rules
     |  +--rw access-rule* [access-mode]
     |     +--rw access-mode    access-modes
     |     +--rw acl?            -> /acl:access-lists/acl/acl-name
     +--ro clock-state
     |  +--ro system-status
     |     +--ro clock-state                ntp-clock-status
     |     +--ro clock-stratum              ntp-stratum
     |     +--ro clock-refid                union
     |     +--ro associations-address?      -> /ntp/associations/address
     |     +--ro associations-local-mode?   -> /ntp/associations/local-mode
     |     +--ro associations-isConfigured? -> /ntp/associations/isConfigured
     |     +--ro nominal-freq               decimal64
     |     +--ro actual-freq                decimal64
     |     +--ro clock-precision            uint8
     |     +--ro clock-offset?              decimal64
     |     +--ro root-delay?                decimal64
     |     +--ro root-dispersion?           decimal64
     |     +--ro reference-time?            yang:date-and-time
     |     +--ro sync-state                 ntp-sync-state
     +--rw unicast* [address type]
        +--rw address          inet:host
        +--rw type             unicast-configuration-type
        +--rw authentication
        |  +--rw (authentication-type)?
        |     +--:(symmetric-key)
        |        +--rw key-id?   -> /ntp/authentication/authentication-keys/key-id
        +--rw prefer?          boolean
        +--rw burst?           boolean
        +--rw iburst?          boolean
        +--rw source?          if:interface-ref
        +--rw minpoll?         ntp-minpoll
        +--rw maxpoll?         ntp-maxpoll
        +--rw port?            uint16
        +--rw version?         ntp-version
```

```
+--ro associations* [address local-mode isConfigured]
|  +--ro address            inet:host
|  +--ro local-mode         association-modes
|  +--ro isConfigured       boolean
|  +--ro stratum?           ntp-stratum
|  +--ro refid?             union
|  +--ro authentication?    -> /ntp/authentication/authentication-keys/key-id
|  +--ro prefer?            boolean
|  +--ro peer-interface?    if:interface-ref
|  +--ro minpoll?           ntp-minpoll
|  +--ro maxpoll?           ntp-maxpoll
|  +--ro port?              uint16
|  +--ro version?           ntp-version
|  +--ro reach?             uint8
|  +--ro unreach?           uint8
|  +--ro poll?              uint8
|  +--ro now?               uint32
|  +--ro offset?            decimal64
|  +--ro delay?             decimal64
|  +--ro dispersion?        decimal64
|  +--ro originate-time?    yang:date-and-time
|  +--ro receive-time?      yang:date-and-time
|  +--ro transmit-time?     yang:date-and-time
|  +--ro input-time?        yang:date-and-time
|  +--ro ntp-statistics
|     +--ro packet-sent?        yang:counter32
|     +--ro packet-sent-fail?   yang:counter32
|     +--ro packet-received?    yang:counter32
|     +--ro packet-dropped?     yang:counter32
+--rw interfaces
|  +--rw interface* [name]
|     +--rw name             if:interface-ref
|     +--rw broadcast-server!
|     |  +--rw ttl?             uint8
|     |  +--rw authentication
|     |  |  +--rw (authentication-type)?
|     |  |     +--:(symmetric-key)
|     |  |        +--rw key-id?   -> /ntp/authentication/authentication-keys/key-id
|     |  +--rw minpoll?        ntp-minpoll
|     |  +--rw maxpoll?        ntp-maxpoll
|     |  +--rw port?           uint16
|     |  +--rw version?        ntp-version
|     +--rw broadcast-client!
```

```
+--rw multicast-server* [address]
|  +--rw address            rt-types:ip-multicast-group-address
|  +--rw ttl?               uint8
|  +--rw authentication
|  |  +--rw (authentication-type)?
|  |     +--:(symmetric-key)
|  |        +--rw key-id?   -> /ntp/authentication/authentication-keys/key-id
|  +--rw minpoll?           ntp-minpoll
|  +--rw maxpoll?           ntp-maxpoll
|  +--rw port?              uint16
|  +--rw version?           ntp-version
+--rw multicast-client* [address]
|  +--rw address    rt-types:ip-multicast-group-address
+--rw manycast-server* [address]
|  +--rw address    rt-types:ip-multicast-group-address
+--rw manycast-client* [address]
|  +--rw address            rt-types:ip-multicast-group-address
|  +--rw authentication
|  |  +--rw (authentication-type)?
|  |     +--:(symmetric-key)
|  |        +--rw key-id?   -> /ntp/authentication/authentication-keys/key-id
|  +--rw ttl?               uint8
|  +--rw minclock?          uint8
|  +--rw maxclock?          uint8
|  +--rw beacon?            uint8
|  +--rw minpoll?           ntp-minpoll
|  +--rw maxpoll?           ntp-maxpoll
|  +--rw port?              uint16
|  +--rw version?           ntp-version
+--ro ntp-statistics
   +--ro packet-sent?       yang:counter32
   +--ro packet-sent-fail?  yang:counter32
   +--ro packet-received?   yang:counter32
   +--ro packet-dropped?    yang:counter32
```