

# Common YANG Data Types

draft-ietf-netmod-yang-types-01

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# Summary of changes since -00

- Fixed a missing backslash escape in the object-identifier pattern
- Identified the type definitions in need of a normalization discussion
- Generated XSD and RNG using a newer version of pyang
- Editorial changes

# Issue: Normalization

- Some data types allow multiple lexical representations for a single value
- For these data types, we either
  - need a normalized representation to make comparisons predictable, or we
  - need to change the data type so that there is only a single lexical representation for a single value
- Needs to be decided on a case by case basis
- 1:1 mappings between lexical space and value space may simplify “subagent” architectures

# date-and-time

- The time-offset Z and +00:00 mean the same thing (but note that -00:00 means unknown time zone according to RFC 3339 but the same as Z according to XSD).
- XSD says the canonical time-offset format is Z
- Proposal:
  - Make Z the canonical time-offset format
  - Clarify that -00:00 means unknown time zone
  - Clarify that 00:00 and Z mean the same thing

# ipv4-address / ipv6-address

- The zone index allows numeric (interface index) and string (interface name) representations
- Proposal:
  - Assuming that the native identification of interfaces in YANG will be interface names instead of interface index numbers, make the name representation the canonical format.

# ipv6-address

- The type currently supports full, shortened, mixed, and shortened mixed formats.
- Proposal:
  - Allow multiple formats and representations
  - Make the shortened format the canonical format
  - The :: substitution must be applied to the longest sequence of zeros in an IPv6 address (if there is a tie, the first sequence of zeros is replaced by ::)

# ipv4-prefix / ipv6-prefix

- The two representations 192.0.2.0/24 and 192.0.2.8/24 mean the same thing
- Proposal:
  - Require that all bits that are not part of the prefix are set to zero (192.0.2.8/24 becomes an invalid representation of an IPv4 prefix)
  - For IPv6, the shortened form will be the canonical format, other representations are allowed
  - Results in a 1:1 mapping between lexical representation and the value space for IPv4 but not for IPv6

# domain-name

- Currently allows upper-case and lower-case characters in the domain name
- Proposal:
  - Follow the text in the description clause of the uri data type which requires that all case-insensitive characters are set to lowercase
  - Results in a 1:1 mapping between lexical space and value space
  - Implementations can still be lenient in what they accept



# Issue: module name prefixes

- During the NETCONF WG meeting, there was a motion to prefix YANG module names of IETF modules with “ietf-”
- If we apply this rule to the types document, we get the following module names:
  - ietf-yang-types
  - ietf-inet-types
  - ietf-ieee-types
- This change does not affect the prefixes, only the module names