

Pydantify

[OPSAWG]IETF 122

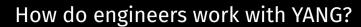
Urs Baumann 25.09.2024

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```
>>> qr = QRCode()
>>> qr.add_data("https://www.linkedin.com/in/ubaumannch")
>>> qr.print_ascii()
```







```
<config>
     <if:interfaces xmlns:if="urn:ietf:params:xml:ns:yang:ietf-interfaces">
     {% for interface in vlan interfaces %}
       <if:interface>
4
         <if:name>Vlanif{{ interface.name }}</if:name>
6
         <if:description>uplink</if:description>
         <if:type xmlns:iana-if-type="urn:ietf:params:xml:ns:yang:iana-if-type">iana-if-type:propVirtual</if:type>
         <ip:ipv4 xmlns:ip="urn:ietf:params:xml:ns:vang:ietf-ip">
           <in:address>
9
             <ip:ip>{{ interface.ip.split("/")[0] }}</ip:ip>
10
             <ip:prefix-length>{{ interface.ip.split("/")[1] }}</ip:prefix-length>
           </ip:address>
         </ip:ipv4>
       </if:interface>
     {% endfor %}
15
     </if:interfaces>
     </config>
```

Eco-System



- pyangbind
- ygot
- YANG Development Kit (ydk-gen)

What I want



- Python objects with typing, validation and documentation
- Consumable / as intuitive and user-friendly as possible
- IDE autocompletion
- IDE error checks
- IDE type-hints
- Serialization / Deserialization

How it started



 Midterm Project @ Eastern Switzerland University of Applied Sciences Walther, Dominic and Jovicic, Dejan (2023)
 Make Model Driven Network Automation Pythonic https://eprints.ost.ch/id/eprint/1089/

Now



- https://pydantify.github.io/pydantify/
- https://github.com/pydantify/pydantify
- https://pypistats.org/packages/pydantify

Vendor



- https://github.com/srl-labs/pydantic-srlinux/ experimental project
- https://www.youtube.com/watch?v=CM3sT55zwto How can you use Pydantify? — Roman Dodin (Nokia)

Demo

Challanges / not supported



- Pydantify: YANG > Pyyang > **JSONSchema** > DMGC > Pydantic
- Context-aware validation
- must / if / ...
- xPath
- bits / decimal64 representation
- RegEx

Questions?