Pydantify

NetAutoberfest 2025
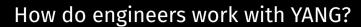
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```
>>> qr = QRCode()
>>> qr.add_data("https://www.linkedin.com/in/ubaumannch")
>>> qr.print_ascii()
```

How do engineers work with YANG?

```
1   <config>
2   <if:interfaces xmlns:if="urn:ietf:params:xml:ns:yang:ietf-interfaces">
3   {% for interface in vlan_interfaces %}
4     <if:interface>
5       <if:name>Vlanif{{ interface.name }}</if:name>
6       <if:description>uplink</if:description>
7       <if:type xmlns:iana-if-type="urn:ietf:params:xml:ns:yang:iana-if-type">iana-if-type:propVirtual</if:type>
8       <ip:ipv4 xmlns:ip="urn:ietf:params:xml:ns:yang:ietf-ip">
9         <ip:address>
10          <ip:ip>{{ interface.ip.split("/")[0] }}</ip:ip>
11          <ip:prefix-length>{{ interface.ip.split("/")[1] }}</ip:prefix-length>
12        </ip:address>
13      </ip:ipv4>
14    </if:interface>
15  {% endfor %}
16  </if:interfaces>
17  </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/`

- `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=CM3sT55zwt0`
  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?