Data Formats: Reading and writing JSON – XML - YAML

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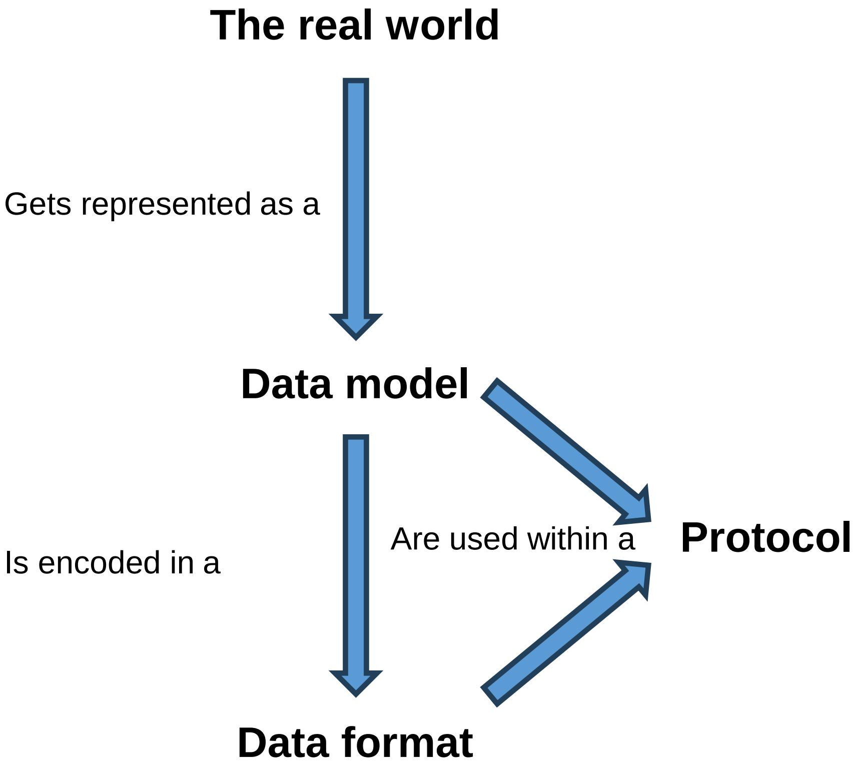
Definitions

- Data modelling (YANG, TOSCA)
  - Defines a representation of real-world entities, their relationships and structure
- Data formats (XML, JSON, YAML)
  - Define how to encode the information in a standardized way
- Protocols (NETCONF, RESTCONF, gRPC...)
  - Define the operations, the requests and responses of interactions



The real world

Gets represented as a

Data model

Is encoded in a

Data format

Are used within a

Protocol

Data Serialisation Examples – Human Readable

```xml
<network>
  <device>
    <type>router</type>
    <vendor>MyOAVvendor</vendor>
    <ports>4</ports>
    <description>Access</description>
 </device>
</network>
```

XML

</>

```json
{
  “device”: {
    “type”: “router”,
    “vendor”: “MyOAVvendor”,
    “ports”: 4,
    “description”: “Access”
  }
}
```

JSON

{}

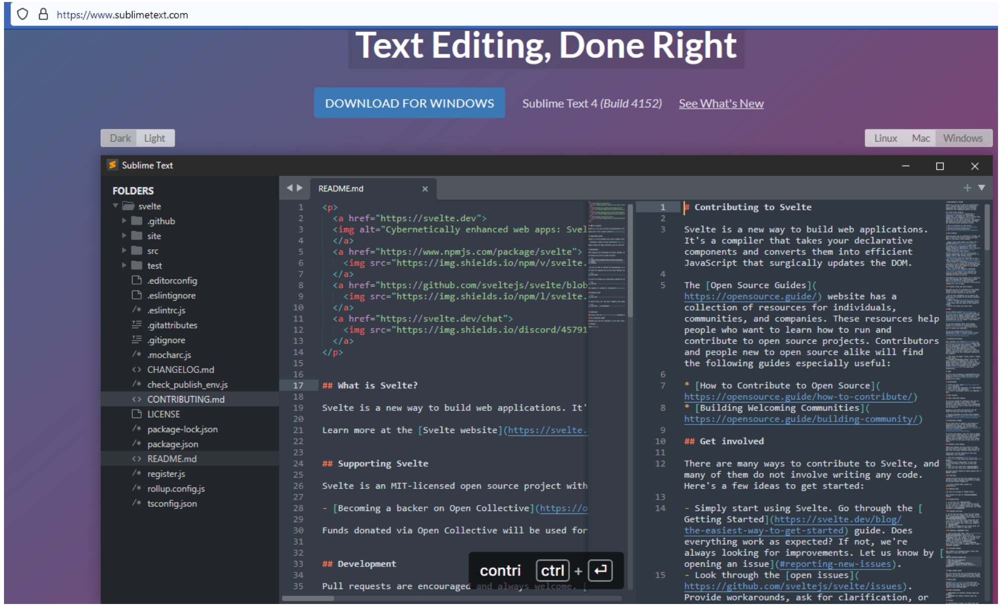
```yaml
---
device:
 type: router
 vendor: MyOAVvendor
 ports: 4
 description: Access
```

YAML

indentation

Writing JSON, XML and YAML files

- You can write JSON, XML and YAML files with any text editor like vim or emacs
- If you like syntax highlighting, editors/IDEs such as Visual Studio Code, Notepad++, Sublime.

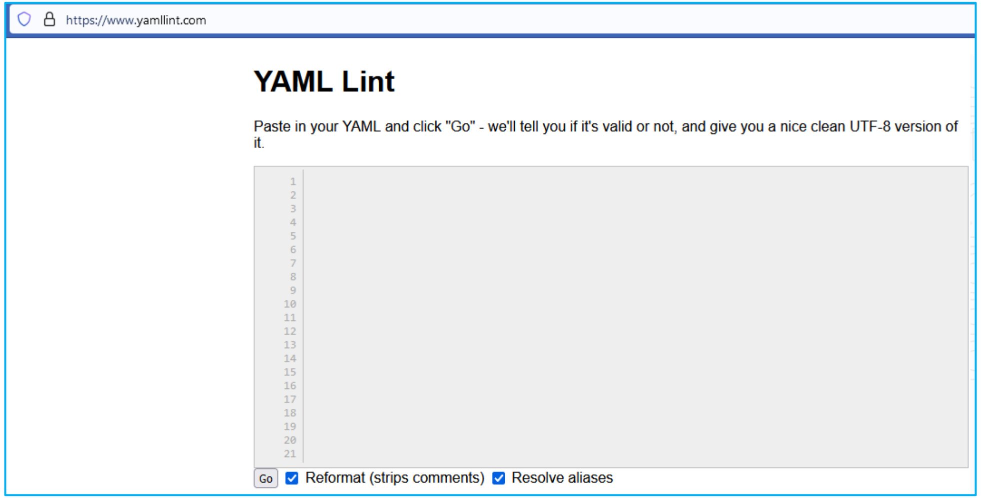


```
<p>
  <a href="https://svelte.dev">
  <img alt="Cybernetically enhanced web apps: Svel
  </a>
  <a href="https://www.npmjs.com/package/svelte">
    <img src="https://img.shields.io/npm/v/svelte.
  </a>
  <a href="https://github.com/sveltejs/svelte/blob
    <img src="https://img.shields.io/npm/l/svelte.
  </a>
  <a href="https://svelte.dev/chat">
    <img src="https://img.shields.io/discord/45791
  </a>
</p>


## What is Svelte?

Svelte is a new way to build web applications. It'

Learn more at the [Svelte website](https://svelte.


## Supporting Svelte

Svelte is an MIT-licensed open source project with

- [Becoming a backer on Open Collective](https://o

Funds donated via Open Collective will be used for


## Development

Pull requests are encouraged and always welcome. [
```

```
# Contributing to Svelte

Svelte is a new way to build web applications.
It's a compiler that takes your declarative
components and converts them into efficient
JavaScript that surgically updates the DOM.

The [Open Source Guides](
https://opensource.guide/) website has a
collection of resources for individuals,
communities, and companies. These resources help
people who want to learn how to run and
contribute to open source projects. Contributors
and people new to open source alike will find
the following guides especially useful:

* [How to Contribute to Open Source](
https://opensource.guide/how-to-contribute/)
* [Building Welcoming Communities](
https://opensource.guide/building-community/)

## Get involved

There are many ways to contribute to Svelte, and
many of them do not involve writing any code.
Here's a few ideas to get started:

- Simply start using Svelte. Go through the [
Getting Started](https://svelte.dev/blog/
the-easiest-way-to-get-started) guide. Does
everything work as expected? If not, we're
always looking for improvements. Let us know by [
opening an issue](#reporting-new-issues).
- Look through the [open issues](
https://github.com/sveltejs/svelte/issues).
Provide workarounds, ask for clarification, or
```

Some Free Tools to Help You Write, Validate and Convert Your Files

- You can check your syntax, format your files or convert them using useful free tools:
  - https://www.freeformatter.com
  - https://www.liquid-technologies.com/online-xml-validator
  - https://onlineyamltools.com/edit-yaml
  - https://www.yamllint.com/
  - https://www.json2yaml.com/



https://www.yamllint.com

YAML Lint

Paste in your YAML and click "Go" - we'll tell you if it's valid or not, and give you a nice clean UTF-8 version of it.

☑ Reformat (strips comments) ☑ Resolve aliases

Some Cases Where We Use JSON, YAML, XML

JSON:

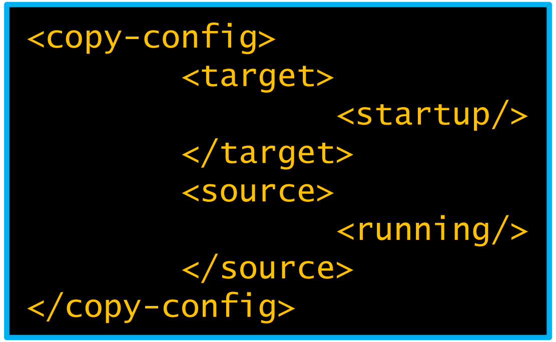
- Web API output (AWS, Google maps, Github, X,...)
- Jenkins
- ELK stack (Elasticsearch, Logstash, Kibana)

XML:

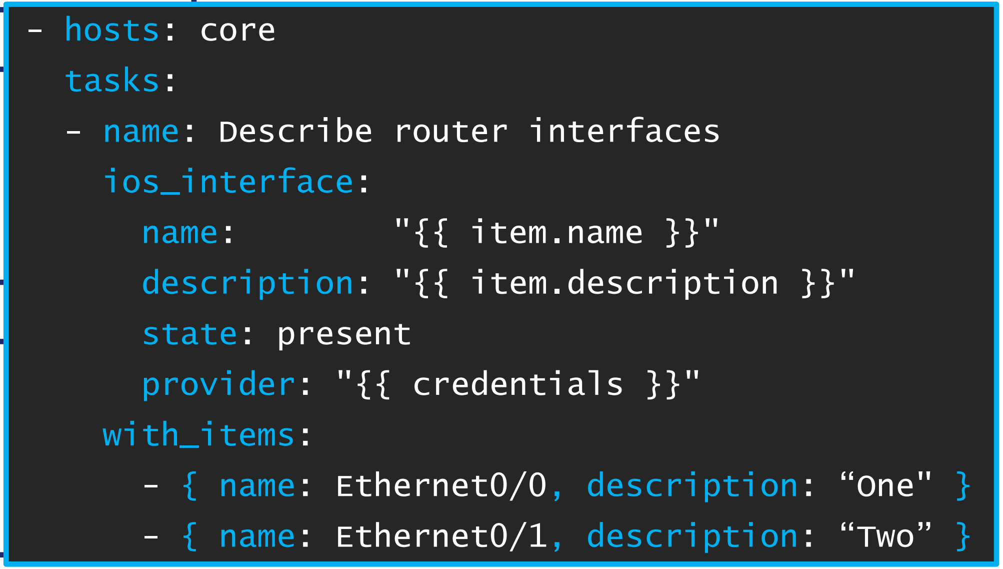
- Jenkins
- NETCONF
- RESTCONF

YAML:

- Ansible
- Kubernetes
- Docker



```
<copy-config>
        <target>
                <startup/>
        </target>
        <source>
                <running/>
        </source>
</copy-config>
```



```
- hosts: core
  tasks:
  - name: Describe router interfaces
    ios_interface:
      name:         "{{ item.name }}"
      description: "{{ item.description }}"
      state: present
      provider: "{{ credentials }}"
    with_items:
      - { name: Ethernet0/0, description: “One" }
      - { name: Ethernet0/1, description: “Two” }
```

More Information in the Network Automation eAcademy

Network Automation eAcademy

DATA FORMATS:
JSON

Open Digital Architecture

Decoupling & Integration

- **Formats: YAML** (30')

Network Automation eAcademy

DATA FORMATS:
XML

Open Digital Architecture

Decoupling & Integration

- **Formats: XML** (60’)

Network Automation eAcademy

DATA FORMATS:
YAML

Open Digital Architecture

Decoupling & Integration

- **Formats: JSON** (45’)

https://wiki.geant.org/display/NETDEV/OAV+Training+Portal

Thank You!

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