Why Aren't We Using YANG/RESTCONF for All Software Management?

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Hello World

World Service

- Billing
- Authorization
- Web Proxy
- Web GUI
- Reporting

Database

Hello

Importer

Exporter

Translator

History

Importer

Exporter

Billing
Typical Integration

Service

Admin

Performance

Security

Config

Security

API

Admin SDK

Security

Roles

Internal Config

Log

Log Agent

Faults

Performance

Config Agent
Scope

More software developers doing DevOps than Application Development

-- 2018 State of DevOps Report/PuppetLabs
Getting Started - Bottom up

2015 started implementation on a YANG parser and RESTCONF implementation in Go called FreeCONF
<table>
<thead>
<tr>
<th>Recipe</th>
<th>Ingredients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Madras</td>
<td>1.5 oz vodka</td>
</tr>
<tr>
<td></td>
<td>1 oz orange juice</td>
</tr>
<tr>
<td></td>
<td>4 oz cranberry juice</td>
</tr>
<tr>
<td>Fruity and tart</td>
<td></td>
</tr>
<tr>
<td><strong>MAKE</strong></td>
<td><strong>SAMPLE</strong></td>
</tr>
<tr>
<td>Crazy Christine</td>
<td>1.5 oz vodka</td>
</tr>
<tr>
<td>Cocktail</td>
<td>3 oz ginger beer</td>
</tr>
<tr>
<td></td>
<td>0.75 oz cranberry juice</td>
</tr>
<tr>
<td></td>
<td>0.5 oz lime juice</td>
</tr>
<tr>
<td>Best enjoyed in a</td>
<td></td>
</tr>
<tr>
<td>copper mug.</td>
<td></td>
</tr>
<tr>
<td><strong>MAKE</strong></td>
<td><strong>SAMPLE</strong></td>
</tr>
<tr>
<td>Holiday Pimm's Cup</td>
<td>2 oz Pimm's No. 1</td>
</tr>
<tr>
<td></td>
<td>1 oz lemonade</td>
</tr>
<tr>
<td></td>
<td>1 oz cranberry juice</td>
</tr>
<tr>
<td></td>
<td>2 oz ginger beer</td>
</tr>
</tbody>
</table>


module bartend {
    namespace "";
    prefix "";
    revision 0;
    description "Bartender is an app that will mix a drink by turning on a set of liquid pumps";

    list pump {
        description "direct access to hardware pumps";
        key "id";

        leaf id {
            description "ids from 0-8 for the installed pumps";
            type int32;
        }

        leaf gpioPin {
            description "Raspberry PI GPIO pin number. Do not change unless you're rewired your Pi."
            type int32;
        }

        leaf timeToVolumeRatios {
            description "number of milliseconds to turn on pump to pour one milliliter"
            type int32;
        }

        leaf liquid {
            description "name of the liquid. If name does not match (case sensitive) recipe ingredient exactly, it will not recognized as same liquid."
            type string;
        }

        action on {
            description "turn on the pump"
        }

        action off {
            description "turn off the pump"
        }
    }
}

RECIPIES

Pump 0

vodka

ON OFF

Pump 1

orange juice

ON OFF
**Madras**

4 oz cranberry juice
1 oz orange juice
1.5 oz vodka

Fruity and tart

**Crazy Christine Cocktail**

0.75 oz cranberry juice
3 oz ginger beer
0.5 oz lime juice
1.5 oz vodka

Best enjoyed in a copper mug.
Implementation

Bartend

FreeCONF

bartend.yang

alexa-skill.yang

RESTCONF

Recipes

Setup

Madras
1.5 oz vodka
1 oz orange juice
4 oz cranberry juice
Fruity and tart
MAKE SAMPLE

Crazy
Christine
Cocktail
1.5 oz vodka
3 oz ginger beer
0.75 oz cranberry juice
0.5 oz lime juice
Best enjoyed in a
Cup
MAKE SAMPLE

amazon
FreeCONF is used in:

1. IoT
2. Schools
3. Malware Detection
Potential Ecosystem

Infrastructure

Service

Service

NGiNX

Schema

Prometheus

OPENSHIFT

GoodDog Labs.

influxdb

OPENCONFIG

Azure

Istio

kubernetes

HashiCorp

logz.io

amazon web services

pagerduty

DATADOG

etcd

CloudZero

Google Cloud Platform
Help

- Validation
- Guidance
- Connections

- 10 million developers be more productive!

To help, please reach out to Douglas Hubler
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