

# Harmonizing Network Switch/Router Configuration Interfaces

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Team Members: Allison Scharmer, Corey Siltala, Jacob McGillick, Samuel Huot

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## What is it?

- Ruggedized switch/router combination for use in military aircraft
- CRR-1000 Tactical VPN Router
  - ATCorp Routing and Encryption Suite (ARES)

### ARES Router Schema

The image shows the ARES Router configuration schema on the left, which defines parameters for an ARES router. The schema includes fields like RouterName (AlphaNumeric), RouterId (integer), EdgeMode (boolean), NeighborDiscovery (object), Quarantined (array), UseThrowableGRE (boolean), KeepGRERoutes (boolean), CutThruRouting (boolean), and controlDSCP (DSCP). To the right is a terminal window showing the JSON configuration file being edited in nano. Below the terminal is a photograph of the physical CRR-1000 Tactical VPN Router.

## The problem

- No GUI for configuring the ARES router; manual configuration of a JSON file performed via CLI with the help of external documentation
- JSON configuration may be intimidating for inexperienced users
- Reference implementation requested

## The solution

- Create one unified web GUI served from the router that allows configuration of both router and switch in one place
- Detect and prevent misconfigurations that could cause a communication fault between the two devices
- Easier to use; eliminates the intimidation factor

The image displays the ATC CRR-1000 Router web GUI. The main interface shows a table for router configuration with columns for Name, Type, Interface, HardwareAddress, Inet4Addresses, and Routes. Below this is a 'Switch Configuration' panel for a CM-6900™ 10 GbE and Gigabit Switch, featuring a 'Port State Overview' section with a visual representation of the switch ports and their status.

## The process

- Implemented reverse proxy using Apache HTTP Server
- Created wireframe, then actual HTML pages with CSS and JavaScript, then Vue.js app with Express.js back-end
- Embedded switch GUI inside Vue.js app via proxied iframe
- Import/export of JSON file handled by Express.js
- Version control through GitHub repository