SUNET
Campus Network as a Service

CNaaS - Campus Network as a Service

By extending the NREN core network to the institutions on both equipment monitoring and change management.

Our goal with CNaaS
"Share staff and expertise for campus network and security operations by standardizing network architecture, tools and processes."

Collaborative service that also increases the competence level of the staff at the universities by utilizing the new design along with our automation/orchestration tools.
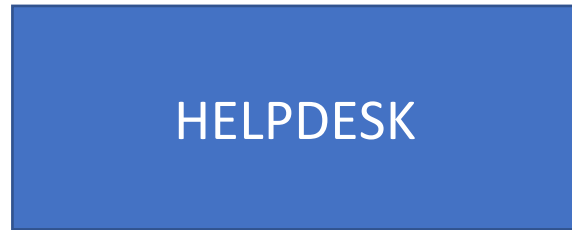
Resource sharing wrt design and also incidents.

Less competency gap (sick days, vacations etc)
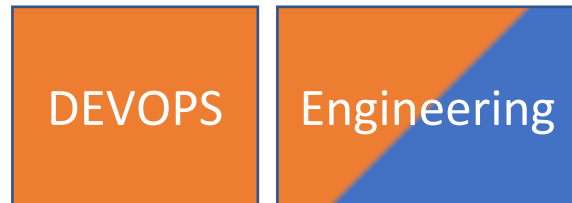
Initial production planned early 2020 at MDH.SE.
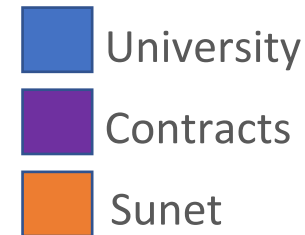
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Service delivery - collaborative service

HELPDESK

1st Line
End user support
Simple mgmt

Hands and Feet

NOC

2nd Line
Monitoring
Documentation
Incident/Problem Mgmt
Configuration Mgmt
Escalation/(Vendor mgt)

Suppliers

DEVOPS

Engineering

3rd Line
Design
Development
Configuration Mgmt
Escalation/(Vendor mgt)

University

Contracts

Sunet

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Timeline

September - Finalise procurement

Oct-Dec - Order and test equipment in lab together with local staff

Nov - Test automated deployment at SUNET-office

Dec-Jan - Initial deployment of new core infrastructure

Feb-Apr - Final testing and changes, monitoring

Sep - Finalise cost calculations for actual service in production

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Important processes to validate in initial production

Aggregated log and alert views

Inter-organisation escalation of support requests

Actual needed functionality; guesstimates from engineering meets the real world

Firmware upgrading over time

Local changes and central configuration

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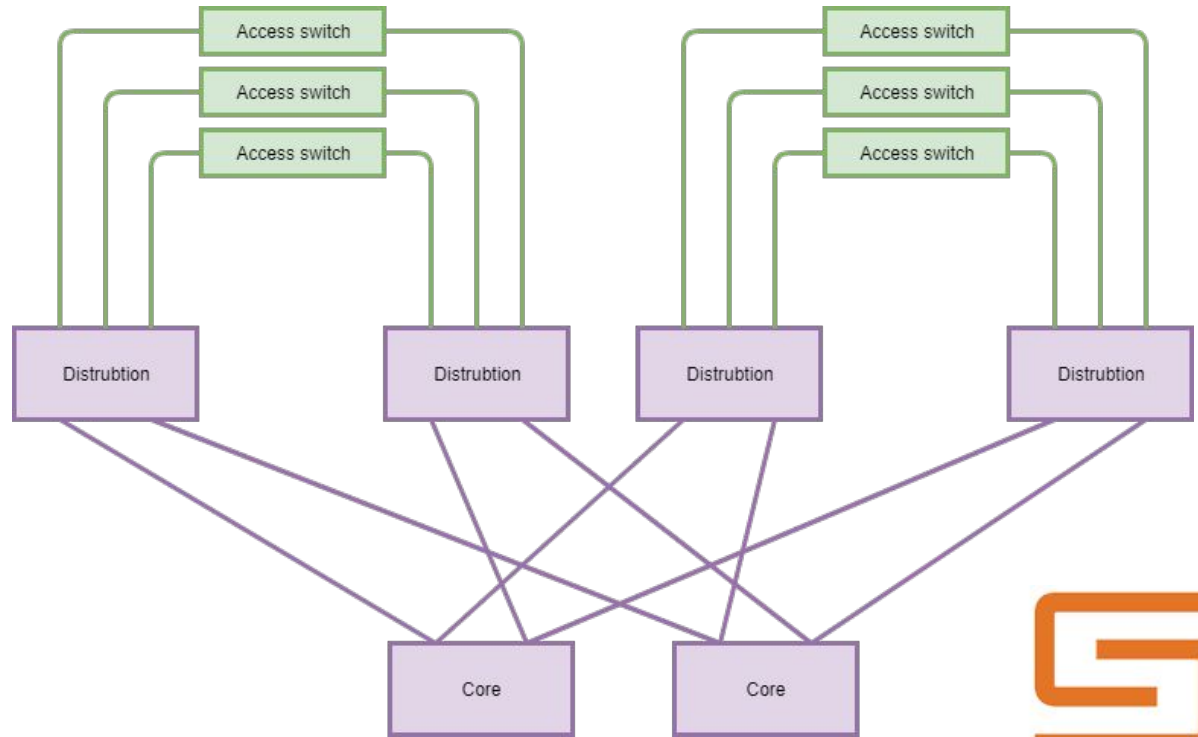# Reference Network Architecture SUNET CNaaS

Utilizing best practise leaf-spine architecture

Pure IP Core

Only standard protocols

(VXLAN, EVPN, ESI LAG)
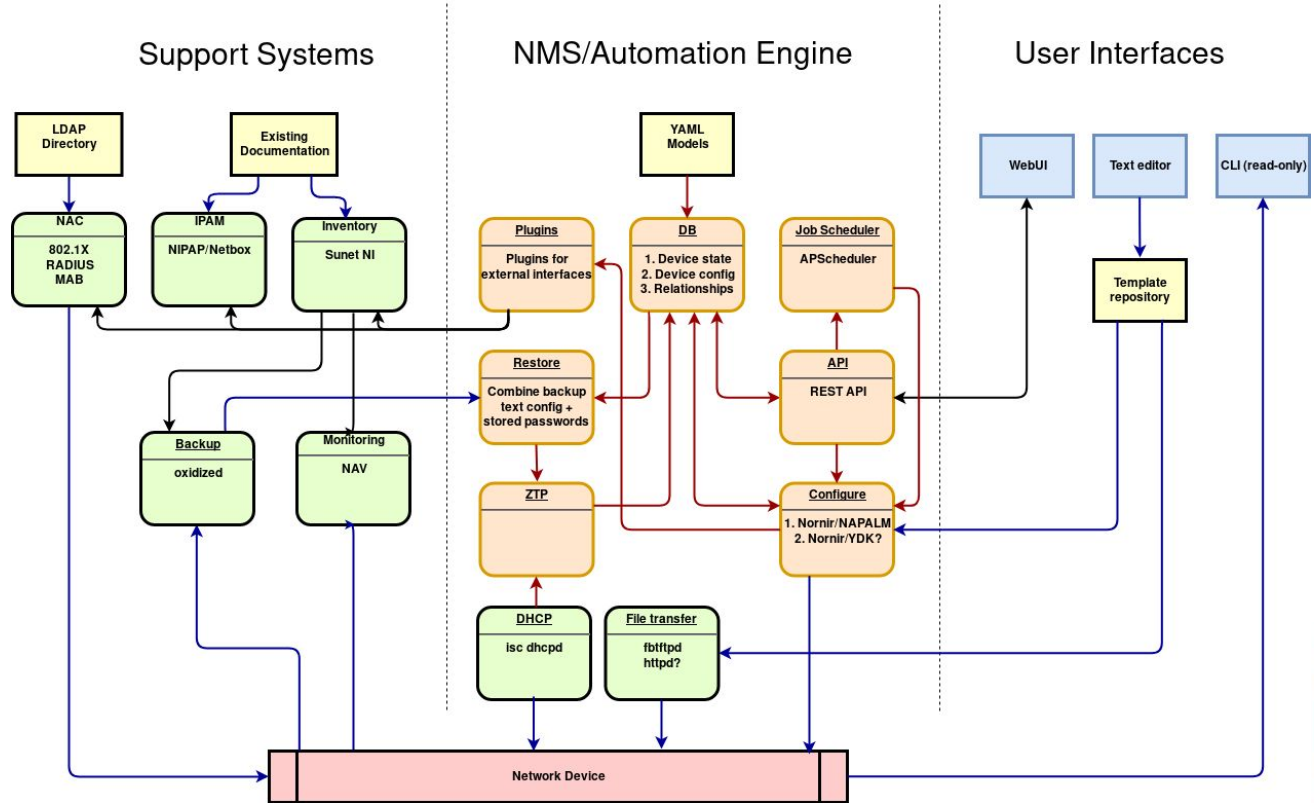
Redundant (except access ports)

CNaaS - Overview

CNaaS-NMS is open source and available to the public on Github

CNaaS-NMS is a hybrid infrastructure-as-code (IaC) and API driven automation system

The components of CNaaS-NMS is distributed as containers across our server infra. (ownclod and on-prem)

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Future and ongoing development

- ❏ CNaaS NMS with ZTP
- ❏ CNaaS Monitoring NAV/NAGIOS integration
- ❏ CNaaS Telemetry and flow
- ❏ CNaaS NAC API
- ❏ CNaaS Web interface
- ❏ CNaaS IPAM
- ❏ CNaaS Backup
- ❏ CNaaS Inventory
- ❏ CNaaS Security
- ❏ Change impact score

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References

https://wiki.sunet.se/display/CNaaS

https://cnaas-nms.readthedocs.io

https://github.com/SUNET/cnaas-nms

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