Uninett CNaaS development

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CNaaS automation at Uninett

- Our CMDB is Excel, for the time being
  - CNaaS-NMS is our goal
  - Working on staffing

- ZTP for bootstrap

- Ansible + PyEZ for configuration
  - Homegrown Jinja2 templates

- Automagic LACP configuration based on LLDP neighbor discovery
Access port configuration

- Simple access port configuration can be delegated to local IT staff
  - Port description
  - Shutdown/enable
  - VLAN selection
    - Unless 802.1Q dictates VLAN choice
  - Voice VLAN enable

- This is supported by our NMS of choice: NAV
  - Juniper support has been added

- But, this means CMDB will **not** be a single point of truth
  - CNaaS-NMS will solve this
Alerts, alerts, alerts!

- Uninett CNaaS will use NAV for monitoring
- NAV is **not** multi-tenant
- One installation per customer is needed
- Gets unwieldy pretty quickly...

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1. NAV is an open source campus network monitoring tool with a 21 year long history in the Norwegian HE sector.
2. NAV is developed by Uninett.
3. Uninett already provides customers with network management services based on NAV.
Uninett CNaaS will use NAV, an open source campus network monitoring tool with a 21-year long history in the Norwegian HE sector. NAV is developed by Uninett. Uninett already provides customers with network management services based on NAV.

NAV is not multi-tenant. One installation per customer is needed. It gets unwieldy pretty quickly...
Idea 1: Re-use NAV
Idea 2: Something new!
Incident details

Status
Closed

Unacknowledged

Ticket https://example.com/tracker/42

Tags
- interface=ge-100/0/31
- location=norge
- event_type=linkDown
- alert_type=linkDown
- host=tullin-gw1.uninett.no
- room=tullin

Primary details

Description
Link DOWN on ge-100/0/31 at tullin-gw1 (UN000658 GC10711403, tullin-nupi)

Start time
9/30/2020, 9:33:59 AM

Source
uninav.uninett.no

Details URL
More details

Ticket
xample.com/tracker/42

Acknowledgements

CREATE ACKNOWLEDGMENT

Related events

Incident end
Link UP on ge-100/0/31 at tullin-gw1 (UN000658 GC10711403, tullin-nupi)

uninav.uninett.no 9/30/2020, 9:43:59 AM

Incident start

uninav.uninett.no 9/30/2020, 9:33:59 AM
<table>
<thead>
<tr>
<th>Id</th>
<th>Timestamp</th>
<th>Status</th>
<th>Source</th>
<th>Description</th>
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<td>166</td>
<td>9/24/2020, 4:04:27 PM</td>
<td>Open, No ticket, Non-asked</td>
<td>uninnav.uninnet.no</td>
<td>bergen-gw2 BGP session with 2001:700:0:8067::2 is DOWN</td>
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<td>Link DOWN on TenGigE6/1/0/2 at bergen-gw2 (UN000201 GC11310537, bergen-oslo, if2-gw)</td>
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<td>uninnav.uninnet.no</td>
<td>Link DOWN on TenGigE6/1/0/15 at bergen-gw2 (UN000193 GC10910531, bergen-stavanger, stavanger-gw1)</td>
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<td>9/22/2020, 2:19:31 PM</td>
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<td>Link DOWN on TenGigE6/1/0/14 at bergen-gw2 (UN000192 GC10910528, bergen-stavanger, stavanger-gw1)</td>
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<td>Link DOWN on TenGigE6/1/0/8 at bergen-gw2 (UN000147 GC10300238, bergen-sogndal, sogndal-gw2)</td>
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<td>134</td>
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<td>bergen-gw1 BGP session with 2001:700:0:4303:ca53 is DOWN</td>
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<td>bergen-gw1 BGP session with 158.37.2.38 is DOWN</td>
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</table>
Each user can configure a personal notification profile
- Filters define which alerts are interesting
- Timeslots decide when notifications are desirable

E-Mail and SMS notifications are supported

More mediums will come:
- Slack
- Teams
Incident relationships

- Incidents may be related, somehow...
  - "Same root cause"
  - "Same issue reported by two separate source systems"
  - "One issue is caused by the other"

- These relations can be added
  - Manually (although, not quite yet)
  - By an external agent
Argus going forward...

- Uninett Service Center will start testing v1.0 next week
  - Important to get real world feedback
- NAV is already integrated
  - Our three CNaaS customers ship incidents to Argus ATM.
- We will shortly write glue services for our other monitoring tools:
  - Zabbix
  - Zino
- We will write a Python library for API access
  - Will be used by all our glue services
References

- https://github.com/Uninett/Argus
- https://github.com/Uninett/Argus-frontend
- https://nav.uninett.no/