

5G - Configuration with NETCONF

- [Scope](#)
- [Development Status](#)
 - [Part 1: Protocol support](#)
 - [Part 2: Configuration use cases](#)
- [Testing](#)

Scope

Enhance NETCONF support in ONAP supporting 5G and other use cases.

Proposed UC to focus on in Dublin for configuration with NETCONF:

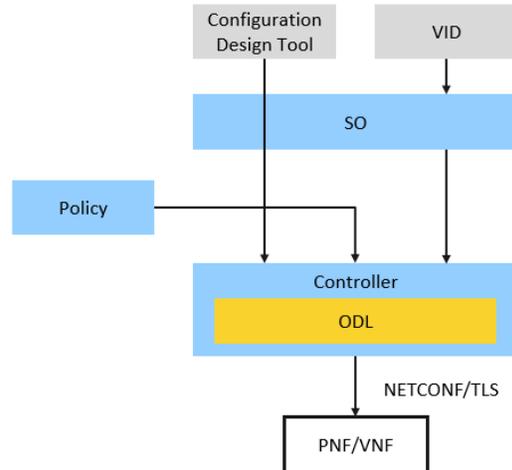
- Post-instantiation (triggered by SO)
 - Including final configuration step (36/37) in the PNF PnP UC
- (Stretch goal) Configuration modification (e.g. triggered by Policy)

Specific requirements on NETCONF support in ONAP:

- Officially support both PNFs and VNFs for north-bound controller APIs in the use cases
- Support for NETCONF over TLS (RFC7589)
- Support for YANG 1.1 (RFC7950) modules in addition to YANG 1.0

Presentations:

- [5G_UC_for_Dublin_NETCONF_Bulk_PM.pptx](#)
- [5G_UC_for_Dublin_NETCONF_Nov_22.pptx](#)
- [5G_UC_for_Dublin_NETCONF_PNF_Upgrade_DDF.pptx](#)



Development Status

Part 1: Protocol support

The first part of the feature focuses on supporting NETCONF/TLS and YANG 1.1 south-bound from the ONAP controller to PNFs and VNFs.

OpenDaylight netconf-connector is proposed as the NETCONF client. TLS support has been added in the latest release (Flourine) although bug fixes may be required. One of the ONAP additions will be a mechanism in the controller to configure the keys and certificates used by ODL for NETCONF/TLS.

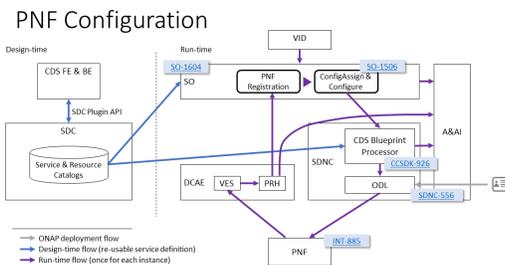
NETCONF requests could be triggered directly by using the ODL RESTCONF API for testing purposes, or from a directed graph (assuming suitable plugin is available).

Project	PTL	JIRA	Description	Status
---------	-----	------	-------------	--------

APPC SDNC CCSDK	Takamune Cho Dan Timoney	<p>APPC-1277 - Getting issue details... <input type="button" value="STATUS"/></p> <p>APPC-1258 - Getting issue details... <input type="button" value="STATUS"/></p> <p>SDNC-551 - Getting issue details... <input type="button" value="STATUS"/></p> <p>SDNC-555 - Getting issue details... <input type="button" value="STATUS"/></p> <p>SDNC-556 - Getting issue details... <input type="button" value="STATUS"/></p>	<p>Enable NETCONF and TLS support in OpenDaylight when used by ONAP controller</p> <ol style="list-style-type: none"> 1. Upgrade to ODL Flourine release (service release may be required) 2. Ensure required ODL features are installed by default in controller 3. Develop solution to obtain and configure client certificate and private key as well as trusted certificates for NETCONF/TLS in ODL as part of controller instantiation <ul style="list-style-type: none"> • Review solution in SECCOM <p>Verify configuration with NETCONF via controller/ODL with mix of YANG 1.0 and YANG 1.1 modules.</p>	<p>PTLs notified</p> <p>Feature has been delivered.</p> <p>Note: It is planned to start with SDNC in Dublin. To have same level of support in APPC, an additional ticket should be defined for (3), similar to SDNC-556.</p>
VNFRQTS	Steven Wright	<p>VNFRQTS-519 - Getting issue details... <input type="button" value="STATUS"/></p> <p>VNFRQTS-520 - Getting issue details... <input type="button" value="STATUS"/></p> <p>VNFRQTS-603 - Getting issue details... <input type="button" value="STATUS"/></p>	<p>Update xNF requirements</p> <ol style="list-style-type: none"> 1. NETCONF and security requirements shall allow NETCONF/TLS 2. YANG requirements shall allow YANG 1.1 	<p>PTL notified</p> <p>Feature has been delivered.</p>

Part 2: Configuration use cases

The second part of the feature will secure support for a complete PNF configuration use case, based on NETCONF/TLS as the device protocol. The solution will utilize Controller Design Studio (CDS) components including the run-time blueprint processor.



Project	PTL	JIRA	Description	Status
CCSDK	Dan Timoney	<p>CCSDK-926 - Getting issue details... <input type="button" value="STATUS"/></p>	<p>Additional support for NETCONF/TLS configuration in the controller layer</p> <ol style="list-style-type: none"> 1. Develop new capability in the CDS blueprint processor allowing use of the ODL netconf-connector from controller blueprints 2. Create and verify sample CBA file 	<p>PTL notified</p> <p>Feature has been delivered.</p> <p>Note: As CDS components are under active development during Dublin, there are dependencies to several other Jira issues as well.</p>

SO	Seshu Kumar Mudiganti	<p>SO-1506 - Getting issue details... <input type="button" value="STATUS"/></p> <p>SO-1604 - Getting issue details... <input type="button" value="STATUS"/></p> <p>SO-1671 - Getting issue details... <input type="button" value="STATUS"/></p>	<p>Extend PNF support in the Service Orchestrator</p> <ol style="list-style-type: none"> 1. Update catalog DB schema for PNFs 2. Add PNF model ingestion including blueprint information 3. Add config-assign and config-deploy steps to the PNF workflow 	<p>PTL notified</p> <p>Feature has been delivered.</p> <p>Note: The PNF workflow extension will share some code with the VNF workflow, some of which is developed as part of other SO Jira issues.</p>
INT	Yang Xu	<p>INT-885 - Getting issue details... <input type="button" value="STATUS"/></p>	<p>Support NETCONF/TLS in the PNF simulator</p>	<p>PTL notified</p> <p>Feature has been delivered.</p>

Testing

See the the Integration test page for details:

- [5G - Configuration with NETCONF - Test Cases](#)
- [5G - E2E PNF Onboarding with PnP & Configuration with Netconf over TLS - Integration Test Cases](#)