PNF PLUG and PLAY in R6 Frankfurt

Wiki to the "Base" PNF Plug and Play Page: 5G - PNF Plug and Play

DEVELOPMENT IMPACTS

PROJECT	PTL	User Story / Epic	Requirement
A&AI	James Forsyth		
AAF	Jonathan Gathman		
APPC	Takamune Cho		
CLAMP	Gervais-Martial Ngueko		
CC-SDK	Dan Timoney	Epic#1: Controller to PNF exchange (Epic) STEP 37	Epic #1: 1. Support NetConf, uses CDS component. W/F in SO. Extended with optional configuration step in SO uses CDS API. wi/ CDS to create blueprint ansible/netconf. CDS south-bound can use different protocols. 2. Support ONAP communication back to the PNF (via Ansible/Netconf) see Step 37 on the PnP Wiki.
DCAE	Vijay Venkatesh Kumar	Epic #2: Adjust VES collector to SECCOM requirements	Epic #2: 1. Secure VES collector - make sure client certificate authentication (together with Basic authentication) is default authentication method (according to SECCOM requirements) 2. DCAEGEN2-1775 - Getting issue details... STATUS
DMaaP	Mandar Sawant		
External API	Matthieu Geerebaert		
MODELING	Hui Deng	Epic #2: Geolocation parameters	Epic #2: 1. Geolocation information and standards alignment 2. ETSI SOL001 Alignment 3. A&AI Schema alignment 4. Complex object updates
Multi-VIM / Cloud	Bin Yang		
OOF	Shankaranarayanan Puzhavakath Narayanan		
POLICY	Pamela Dragosh		
PORTAL	Manoop Talasila		
SDN-C	Dan Timoney		
SDC	Ofir Sonsino	Epic #6: CDS Integration with SDC (Low priority)	Epic #6: CDS integration with SDC (VF/PNF Resource artifact upload screens) (Best effort) SDC-2575 - Getting issue details... STATUS

SO	Seshu Kumar Mudiganti	Epic #3: SO Building Blocks.	E#3a: Change to the onboarding (definition) of the BPMN workflow. To bring war file with the workflow.
			E#3b: Migrate existing workflows to existing building blocks.
			SO-2556 - Getting issue details... **STATUS**
			Need to sync on the VID implementation of 5G VID Instantiation/orchestration. VCPE also wants to use these building blocks.
			SO-2339 - Getting issue details... **STATUS**
			SO-1838 - Getting issue details... **STATUS**
VID	Ittay Stern	Epic #3: SO Building Blocks	Need to sync on the VID implementation of 5G VID Instantiation/Orchestration. VCPE also wants to use these building blocks, a fully generic solution is desired here.
VNFR QTS	Steven Wright		
VNF-SDK	Weitao Gao		

List of PTLs: **Approved Projects**

EPIC / REQ

The Plug and Play Epic for R6 Frankfurt is Jira REQ-134 :

REQ-134 - Getting issue details... **STATUS**

DCAE

Frankfurt Work Item	DESCRIPTION
DCAE2: Adjust VES collector to SECCOM requirements	Secure VES collector - make sure client certificate authentication (together with Basic authentication) is default authentication method (according to SECCOM requirements).
	OPEN: 25 Feb 2020 Use Cert w/ border components (not in R6). Modified config of VES collectors option #1/#2. Cnfg "set basicauth" and "noauth" (refactored)
	DCAEGEN2-1775 - Getting issue details... **STATUS**

SO IMPACTS

PNF PnP FRANKFURT WORK ITEM	DESCRIPTION
SO1: Building Blocks	Refactor BPMN workflow. Clean up work previously done in R4.
	Migrate existing workflows to existing building blocks.
	SO-2556 - Getting issue details... **STATUS**
	Need to sync on the VID implementation of 5G VID Instantiation/orchestration. VCPE also wants to use these building blocks, but a fully generic solution is desired and targted.
SO2: Service & NF Instance Association	Associating a xNF to a Service. Seen in the VID UI, after instantiation waiting for registration see only a Service instance, and beyond that a PNF resource instance associated with it.
	OPEN: 25 Feb 2020 cfg assign/cfg deploy dependent on code being created by other contributors. converted existing PnP WF to make it aligned with R5 need to include cfg steps. (Missing some code). (Open point)
	DEVELOPMENT STATUS:
	Stretch goal in Frankfurt release.

blocked URL

AssignPnfBB

- Responsibility: Creates PNF entry in A&AI
- Makes a link in AAI between service entry and PNF entry
- currently implemented in CreateAndActivatePnfResource.bpmn

WaitForPnfReadyBB

- Responsibility: Waits for "PNF ready" event sent from PRH to DMaaP
- Currently implemented in CreateAndActivePnfResource.bpmn

ConfigAssignPnfBB

- Responsibility: Runs config assign via CDS
- Currently implemented in ConfigurePnfResource.bpmn

ConfigDeployPnfBB

- Responsibility: Runs config assign via CDS
- Currently implemented in ConfigurePnfResource.bpmn

SO PNF PNP migration is being documented: https://wiki.onap.org/display/DW/PNF+PnP+workflow+migration+to+Building+Blocks

The JIRA to track progress: https://jira.onap.org/browse/SO-2556.

Lukasz Grech and Lukasz Muszkieta (Nokia) are leading the SO changes related to migration of PNF PnP sub-flows (sub-Processes_ to building blocks.

This link is about the current (Dublin + El Alto) implementation: https://wiki.onap.org/display/DW/PNF+PNP+workflow+-+current+implementation

The SO BPMN code can be found at **CreateAndActivatePnfResource.bpmn.**
This is where the implementation is stored today.

Also refer to the following topic in Gerrit: pnf_bb

https://gerrit.onap.org/r/#/q/status:merged+project:so+branch:master+topic:pnf_bb

This is where other changes expected for the PNF PnP BBs are expected to be added.

A few building blocks will be created in R6 (expected by end of February 2020).

The currently available workflows dealing for PNF PnP can be seen at the PNF PnP test-cases descriptions in the ONAP Integration project.

VID IMPACTS

R6 ITEM	DESCRIPTION
VID1 Migration of Sub-worksflows (Post-poned to R7)	Migration of existing PNF PnP sub-workflows to a new BB approach (probably we will be creating 4-5 new BBs). VID Impact: Within "old" VID macro orchestration pages, a special field to provide a pnf-id parameter (shall be actually called "correlationID" or "PNF correlationID") has been displayed under the following conditions: 1. Service Model contains a PNF resource type. When we migrate to BB approach, we`d keep the possibility to provide this parameter (PNF correlationID) to the SO API call as input.    How this will change with SO/BB approach, and with new VID GUI targeted at macro (GR) flows – we`d see exactly, after we execute some tests with new VID UI, and updated SO PNF BB code. We`d have to check, what capabilities and conditions could be applied to display and process this "PNF Correlation ID parameter".    Can the same BBs could be re-used in "standard" vCPE use-case.   We`re looking at a generic solution, and we`d probably display this additional field, when we figure out, that there is a PNF resource used in a Service Model. **In R6: only accessible via SO API not the VID GUI, E2E tests prepare environment cover case w/ SO API.**

CONTROLLER IMPACTS

PnP R6 WORK ITEM	DESCRIPTION

CTL1: Controller PNF Interaction	**[CONTROLLER]** Controller definition (SDN-C) came so late in Casablanca, we had defined some additional optional parameter for the step37 Service Configuration but likely more evolution needs to be done. SDN-C was not the theoretical proper controller and people objected as this is conceptually the L0-L3 controller. **[STEP 35-37]** - The SO to SDN-C and Controller to PNF exchange (Ansible or NetConf) was a carry-over item from R3. This requires that an **API between SO to SDN-C** is in place to support this. It requires that SDN-C support the appropriate Ansible Playbook and Directed Graph. Generic API. CDS has its own API to SO. The work being done with the CDS work is re-used for PnP U/C, so no new development needs to be done. **ASSOCIATED DEVELOPMENT:** (Jira) Controller Design Studio (Design Time) - to customize configuration. This **might** be used to set the values of parameters that might be send down to a PNF. NetConf - see the NetConf 5G U/C Wiki: 5G - Configuration with NETCONF

PRH IMPACTS

PnP R6 Frankfurt Work Item	DESCRIPTION

BBS Event Processing Micro-Service

PnP R6 Frankfurt WORK ITEM	DESCRIPTION
PRH(discuss): Step 37a PNF "Activated" message to ONAP **BBS event processing micro-service.** **(Being done by the BBS U/C team)** **Post-poned to Rx**	State Change VES Event (type = State Change) Old state & New State. CPE Authentication Notification **BBS U/C** is using this flow to "update" ONAP letting ONAP know that the PNF has been successfully been activated. From VES Event Listener Document: <table><tr><td>newState</td><td>string</td><td>Yes</td><td>New state of the entity: 'inService', 'maintenance', 'outOfService'</td></tr><tr><td>oldState</td><td>string</td><td>Yes</td><td>Previous state of the entity: 'inService', 'maintenance', 'outOfService'</td></tr></table> R6 - No Changes. BBS will test what was there, will do re-test in R6.

A&AI IMPACTS

R6 ITEM	DESCRIPTION
A&AI2: External Manager (EMS /NMS) [ESR]	**[A&AI]** IP address or association with the External Manager. Is the ESR concept sufficient? https://onap.readthedocs.io/en/beijing/submodules/aai/esr-server.git/docs/ ***During PnP***, the IP address of the External Manager would saved/stored or set by user or by the PNF. Where would that be stored? would it be in A&AI. Information about the External Manager is discovered & stored. Note: The External Manager info is optional **LOW PRIORITY**
A&AI3: Cloud Home Server (A&AI)	**[A&AI]** Tracking the Cloud Home Server (CLLI, Cloud ID); is the association with the **COMPLEX** Object sufficient? How-To: Register a VIM/Cloud Instance to ONAP **LOW PRIORITY**
A&AI / Model **MODELING**	**[A&AI]** GeoLocation information for the PNF reported via pnfRegistration VES Event This will ONLY be modeling work in R6, functionality it moved to future release **MODELING WORK ONLY**
A&AI4: A&AI pnf-id as INDEX for PNF **CANCELED**	**[A&AI]** New A&AI schema adaptations: discrepancy between PNFs and VNFs; VNFs are identified via VNF-ID (UUID), and PNFs - via PNF-name. PNF-id should be used for Identities. This differentiates the way that PRH is searching for PNFs in A&AI, when PRH does the PNF registration in A&AI (may also require SO change). **July 31th 2019 AAI team has cancelled this request (redacted).** **CANCELED**

MODEL IMPACTS

R6 ITEM	DESCRIPTION
Model	**[Modeling]** GeoLocation alignment in Modeling with RFC 6225 and the PNFD, A&AI schema, and SDC AID Data model. (Sept 5) "*Place*" object (off of the Root) platform ONAP info-model. GB922 Location standards Latitude/ Longitude / Altitude (RFC 6225) > TMF GB922 > ONAP > Complex & Place object. **LOW PRIORITY** (Nice to have)

SUPPORTING FILES & PRESENTATIONS

Presentation	File
Presentation for Epic #4: Secure Communication between xNFs & ONAP	2019-09-24 ONA...NF_PnP_R6.pptx
Slides for SO work (Generic SO BBs for PNFs)	PNF PnP as Buil...1203_115837.pdf

Presentation given at the DDF (Prague Jan 13-16)

https://wiki.lfnetworking.org/pages/viewpage.action?pageId=25364127

Lukasz Muszkieta

SO - deploying c...(with code).pptx

MEETINGS & RECORDINGS

DATE	TOPIC	WIKI
22 Aug 2019	Discussion of Geolocation / PNFD/ Civic Address parameters	PNF: PnP - PNFD/SDC AID/AAI Schema Modeling - for GeoLocation
05 Sep 2019	Discussion of Modeling	PNF: PnP - PNFD/SDC AID/AAI Schema Modeling - for GeoLocation Discussion Sept 5 2019
03 Oct 2019	Discussion of Civic Address / Place-Location Model	PNF: PnP - PNFD/SDC AID/AAI Schema Modeling - Discussion Oct 3 2019
07 Nov 2019	Presentation of Place concept Model	PNF: PnP - PNFD/SDC AID/AAI Schema Modeling - Discussion Nov 7, 2019
12 Dec 2019	Discussion of 5G Service Model analysis from 3GPP TS28.541	PnP - PNFD/SDC AID/AAI Schema Modeling - Discussion Dec 12, 2019
02 Jan 2020	Review of Items	PnP - PNFD/SDC AID/AAI Schema Modeling - Discussion Jan 2, 2020
26 Mar 2020	Team discussion	PNFD/SDC AID/AAI Schema Modeling - Discussion Mar 26, 2020
02 Apr 2020	Complex Model Analysis , Discussion of PNF Place as use of Complex for PNFs	PNFD/SDC AID/AAI Schema Modeling/5G Svc Model - R7 Discussion
09 Apr 2020	Discussion with Thinh	PNFD/SDC AID/AAI Schema Modeling - Discussion Apr 9, 2020

REFERENCES

DCAEGEN2-1775 - Getting issue details... STATUS

INTEGRATION & TESTING

This section discusses the Testing & Integration for R6 PnP

1. **WHO IS TESTING** - what company, team, and people will be doing the testing & responsibilities for testing.
2. **TEST ENVIRONMENT** - which does the lab & test environment.
3. **RESOURCES NEEDED** - what resources are needed.
4. **WHO IS CONTRIBUTING RESOURCES** - what resources will be provided and by whom/what company.
5. **NETWORK CONNECTIVITY** - How will a PNF make connectivity to ONAP DCAE VES Event Listener

6. **TEST/INTEGRATION LEADER** - Marcin Przybysz
7. **INTEGRATION LEAD DEFINITION** - ONAP "Use Case/Requirement" Integration Lead

PNF PnP Integration Test Cases. These can be navigated to from the Integration team page hierarchy.

5G - PNF PnP - Integration Test Cases

Testing Status

Dublin 5G - PNF PnP - Test Status

Release R6 Integration Status Page:

2: Frankfurt Release Integration Testing Status

TEST & INTEGRATION

Topic	Wiki
PNF PnP Integration Test Cases	5G - PNF PnP - Integration Test Cases
Testing Status	Dublin 5G - PNF PnP - Test Status
R6 Integration Status Page	2: Frankfurt Release Integration Testing Status

DEMOS

Demo	File/Recording
05 Dec 2019 ONAP/ ORAN Plugfest Demo for Plug and Play (Brunswick NJ - Rutgers OWL WinLab)	zoom_4.mp4
ONAP/ ORAN Plugfest Slides for Plug and Play Presented at ONAP Plugfest 05 Dec 2019	PNF-PlugandPla...912Dc05v2.pptx