

Input to Joint SA5-NFV workshop on June 5, 2024:

Information on Rel-18 and Rel-19 Study and
Work Items relevant to management of
containerized network functions and VNF
generic OAM functions

S5-243211

Completed Rel-18 study and work items

- 📶 Rel-18 study item on management of cloud-native Virtualized Network Functions (VNF)
 - Study captured in 3GPP TR 28.834 analysed use cases, requirements, and solutions related to the management of cloud-native virtualized network functions including support for containerized VNF and use of VNF generic OAM functions
 - Refer to the next slide for the list of use cases and summary of the conclusions
- 📶 Rel-18 work item on management of cloud-native Virtualized Network Functions (VNF)
 - Based on the conclusions from the study TS 28.531 (provisioning) and TS 28.533 (architectural framework) were modified to refer to ETSI NFV release 4 specifications for management of cloud-native VNFs and TS 28.526 (LCM) was updated in alignment with NFV procedures.

Rel-18 study on management of cloud-native Virtualized Network Functions (VNF)

Studied use cases:

- Use case# 1: Configuration of the cloud-native VNF using generic OAM functions
- Use case# 2: Traffic management of the cloud-native VNF using generic OAM
- Use case# 3: Performance monitoring of the cloud-native VNF using generic OAM
- Use case# 4: Failure of VNFC within cloud-native VNF
- Use case# 5: NF creation as a cloud native VNF
- Use case# 6: Scaling of cloud-native VNF
- Use case# 7: Healing of cloud-native VNF
- Use case# 8: VNF package update of the cloud-native VNF
- Use case# 9: VNF package management of the cloud-native VNF

Related to generic OAM functions

Related to containerized VNF

Conclusions and recommendations:

- There was no follow up normative work done for the use cases (1 to 3) related to VNF generic OAM functions since the corresponding ETSI GS NFV-IFA 049 spec was not published prior to the completion of the study. It was recommended that any further normative work should take into account the relevant progress in ETSI NFV.
- The use cases (4 to 7) related to containerized VNF resulted in normative work updating TS 28.531 (provisioning) and TS 28.533 (architectural framework) to refer to ETSI NFV release 4 specs.

On-going Rel-19 study on cloud aspects of management and orchestration



- The study item is described in [SP-231781](#)
- The study includes 3 Work Tasks (WTs):
 - **WT-1:** Analyse the use cases which utilize the VNF generic OAM functions (specified in ETSI) and their potential impacts when applied to the 3GPP management system and study whether and how to incorporate the VNF generic OAM functions into the 3GPP management system, i.e., the requirements and the potential solutions.
 - **WT-2:** Study the use cases that utilize the newly developed industry solutions for management of cloud native network functions which leverage industry standards not limited to ETSI NFV MANO; study the potential impact of supporting such use cases on the 3GPP management system, i.e., the potential requirements and solutions.
 - Note: WT-2 includes studying the terminology to determine the appropriate term and definition for cloud native network functions for use in the 3GPP management system.
 - **WT-3:** Study the use cases, potential requirements and possible solutions for 3GPP management system to support different cloud deployment scenarios, such as public-cloud, private-cloud, hybrid-cloud and multi-cloud deployment scenarios.

WT-1 study captured in clause 5.1 of TR 28.869: Use of VNF generic OAM functions



- 📶 Submissions are related to the following topics/use cases (up to SA5#155):
 - VNF generic OAM functions and SBMA
 - Notification management for the cloud-native VNF
 - Software modification management for the cloud-native VNF
 - VNF policy management using the Policy Agent
 - VNF configuration using the VNF configuration manager
- 📶 Please refer to the latest version of [TR 28.869](#) for approved content

WT-2 study captured in clause 5.2 of TR 28.869: Use of industry solutions for management of cloud-native network functions



- 📶 Submissions are related to the following topics/use cases (up to SA5#155):
 - Terminology
 - Specifically, use of “cloud-native NF” vs. alternative terms
 - Support of containers in NFV
 - LCM of cloud-native NFs
 - Data streaming for cloud-native NFs
 - Telco PaaS
- 📶 Please refer to the latest version of [TR 28.869](#) for approved content

WT-3 study captured in clause 5.3 of TR 28.869: Support of different cloud deployment scenarios



- 📶 Submissions are related to the following topics/use cases (up to SA5#155):
 - Various deployment scenarios
 - Unified management for multiple clouds
 - Placement of cloud-native NFs
 - Homing of cloud-native NFs
- 📶 Please refer to the latest version of [TR 28.869](#) for approved content

Summary

- 📶 3GPP SA5 Rel-19 study item on cloud aspects of management and orchestration is expected to be completed by August 2024.
- 📶 Normative phase to follow is planned to start in Sept. 2024 and to be concluded by Sept. 2025.
- 📶 Discussion points with ETSI NFV:
 - 📶 3GPP TR 28.834 (Release 18) and TR 28.869 (Release 19) reports refer to ETSI NFV EVE019 and ETSI NFV IFA049 work regarding the VNF generic OAM functions framework developed by ETSI NFV. Please keep SA5 updated with the relevant progress in ETSI NFV.
 - 📶 Discussions regarding alignment of 3GPP specifications with Release 4 and 5 specifications of ETSI NFV are on-going.

Thank you !