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Network Functions Virtualisation (NFV) Release 3; Protocols and Data Models; RESTful protocols specification for the management of NFV-MANO

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This Group Specification (GS) has been produced by ETSI Industry Specification Group (ISG) Network Functions Virtualisation (NFV).

Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the ETSI Drafting Rules (Verbal forms for the expression of provisions).

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1 Scope

The present document specifies a set of RESTful protocols and data models fulfilling the requirements specified in ETSI GS NFV-IFA 031 [1] for the interfaces that enable the management of NFV-MANO functional entities.

2 References

2.1 Normative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at https://docbox.etsi.org/Reference.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are necessary for the application of the present document.

[1] ETSI GS NFV-IFA 031: "Network Functions Virtualisation (NFV) Release 3; Management and Orchestration; Requirements and interfaces specification for management of NFV-MANO".

[2] Recommendation ITU-T X.733: "Information technology - Open Systems Interconnection - Systems Management: Alarm reporting function".

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[3] IETF RFC 7396: "JSON Merge Patch".

NOTE: Available at https://tools.ietf.org/html/rfc7396.

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[4] ETSI GS NFV-SOL 013: "Network Functions Virtualisation (NFV) Release 3; Protocols and Data Models; Specification of common aspects for RESTful NFV MANO APIs".

[5] ETSI GS NFV-SEC 022: "Network Functions Virtualisation (NFV) Release 2; Security; Access Token Specification for API Access".

[6] IETF RFC 8447: "IANA Registry Updates for TLS and DTLS".

NOTE: Available at https://tools.ietf.org/html/rfc8447.

[7] IETF RFC 7231: "Hypertext Transfer Protocol (HTTP/1.1): Semantics and Content".

NOTE: Available at https://tools.ietf.org/html/rfc7231.

[8] IETF RFC 5424: "The Syslog Protocol".

NOTE: Available at https://tools.ietf.org/html/rfc5424.

[9] ETSI GS NFV-SOL 002: "Network Functions Virtualisation (NFV) Release 3; Protocols and Data Models; RESTful protocols specification for the Ve-Vnfm Reference Point".

[10] ETSI GS NFV-SOL 003: "Network Functions Virtualisation (NFV) Release 3; Protocols and Data Models; RESTful protocols specification for the Or-Vnfm Reference Point".

[11] ETSI GS NFV-SOL 005: "Network Functions Virtualisation (NFV) Release 3; Protocols and Data Models; RESTful protocols specification for the Os-Ma-nfvo Reference Point".

[12] ETSI GS NFV-SEC 012: "Network Functions Virtualisation (NFV) Release 3; Security; System architecture specification for execution of sensitive NFV components".

[13] ETSI GS NFV-SOL 011: "Network Functions Virtualisation (NFV) Release 3; Protocols and Data Models; RESTful protocols specification for the Or-Or Reference Point".

[14] ETSI GS NFV-SOL 012: "Network Functions Virtualisation (NFV) Release 3; Protocols and Data Models; RESTful protocols specification for the Policy Management Interface".

2.2 Informative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

[i.1] ETSI GR NFV 003: "Network Functions Virtualisation (NFV); Terminology for Main Concepts in NFV".

[i.2] ETSI GS NFV-IFA 011: "Network Functions Virtualisation (NFV) Release 3; Management and Orchestration; VNF Descriptor and Packaging Specification".

[i.3] ETSI GS NFV-MAN 001 (V1.1.1): "Network Functions Virtualisation (NFV); Management and Orchestration".

[i.4] ETSI GS NFV-IFA 010: "Network Functions Virtualisation (NFV) Release 3; Management and Orchestration; Functional requirements specification".

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[i.5] ETSI GS NFV-IFA 005: "Network Functions Virtualisation (NFV) Release 3; Management and Orchestration; Or-Vi reference point - Interface and Information Model Specification".

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[i.6] ETSI GS NFV-IFA 006: "Network Functions Virtualisation (NFV) Release 3; Management and Orchestration; Vi-Vnfm reference point - Interface and Information Model Specification".

[i.7] ETSI GS NFV-IFA 007: "Network Functions Virtualisation (NFV) Release 3; Management and Orchestration; Or-Vnfm reference point - Interface and Information Model Specification".

[i.8] ETSI GS NFV-IFA 008: "Network Functions Virtualisation (NFV) Release 3; Management and Orchestration; Ve-Vnfm reference point - Interface and Information Model Specification".

[i.9] ETSI GS NFV-IFA 013: "Network Functions Virtualisation (NFV) Release 3; Management and Orchestration; Os-Ma-Nfvo reference point - Interface and Information Model Specification".

[i.10] Recommendation ITU-T X.731: "Information technology - Open Systems Interconnection - Systems Management: State management function".

[i.11] IETF RFC 2228: "FTP Security Extensions".

NOTE: Available at https://tools.ietf.org/html/rfc2228.

[i.12] IETF RFC 4217: "Securing FTP with TLS".

NOTE: Available at https://tools.ietf.org/html/rfc4217.

[i.13] Hypertext Transfer Protocol (HTTP) Status Code Registry at IANA.

NOTE: Available at http://www.iana.org/assignments/http-status-codes.

[i.14] IETF RFC 5246: "The Transport Layer Security (TLS) Protocol Version 1.2".

NOTE: Available at https://tools.ietf.org/html/rfc5246.

[i.15] IETF RFC 6749: "The OAuth 2.0 Authorization Framework".

NOTE: Available at https://tools.ietf.org/html/rfc6749.

[i.16] ETSI GS NFV-SOL 001: "Network Functions Virtualisation (NFV) Release 3; Protocols and Data Models; NFV descriptors based on TOSCA specification".

[i.17] ETSI GS NFV-SOL 006: "Network Functions Virtualisation (NFV) Release 3; Protocols and Data Models; NFV descriptors based on YANG Specification".

[i.18] ETSI GS NFV-IFA 032: "Network Functions Virtualisation (NFV) Release 3; Management and Orchestration; Interface and Information Model Specification for Multi-Site Connectivity Services".

[i.19] IETF RFC 7432: "BGP MPLS-Based Ethernet VPN".

NOTE: Available at https://tools.ietf.org/html/rfc7432.

[i.20] IETF RFC 4761: "Virtual Private LAN Service (VPLS) Using BGP for Auto-Discovery and Signaling".

NOTE: Available at https://tools.ietf.org/html/rfc4761.

[i.21] IETF RFC 6624: "Layer 2 Virtual Private Networks Using BGP for Auto-Discovery and Signaling".

NOTE: Available at https://tools.ietf.org/html/rfc6624.

[i.22] IETF RFC 4762: "Virtual Private LAN Service (VPLS) Using Label Distribution Protocol (LDP) Signaling".

NOTE: Available at https://tools.ietf.org/html/rfc4762.

[i.23] IETF RFC 6074: "Provisioning, Auto-Discovery, and Signaling in Layer 2 Virtual Private Networks (L2VPNs)".

NOTE: Available at https://tools.ietf.org/html/rfc6074.

[i.24] IETF RFC 4364: "BGP/MPLS IP Virtual Private Networks (VPNs)".

NOTE: Available at https://tools.ietf.org/html/rfc4364.

[i.25] IETF RFC 8214: "Virtual Private Wire Service Support in Ethernet VPN".

NOTE: Available at https://tools.ietf.org/html/rfc8214.

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3 Definition of terms, symbols and abbreviations

3.1 Terms

For the purposes of the present document, the terms given in ETSI GR NFV 003 [i.1], ETSI GS NFV-IFA 031 [1] and the following apply:

NOTE: A term defined in the present document takes precedence over the definition of the same term, if any, in the documents listed above.

NFV-MANO management interfaces: interfaces for managing the NFV-MANO functional entities

NOTE: The protocols and data models of the NFV-MANO management interfaces are defined in the present document.