



**Welcome
to the World
of Standards**



POLICY MANAGEMENT IN NFV-MANO

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MOTIVATION



- Policy management is a key enabler for improving the agility of network service orchestration in NFV-MANO.
- Although its importance is well identified in Release 1 (MAN001), the feature work on policy management has to start from Release 3(2016), due to intensive development on NFV interoperability specifications in Release 2.
- Related work in other SDOs and open source community has been investigated at the beginning of study phase (IFA023), such as TMF ZOOM, IETF SUPA, 3GPP SON policy management and OpenStack Congress, BGP.

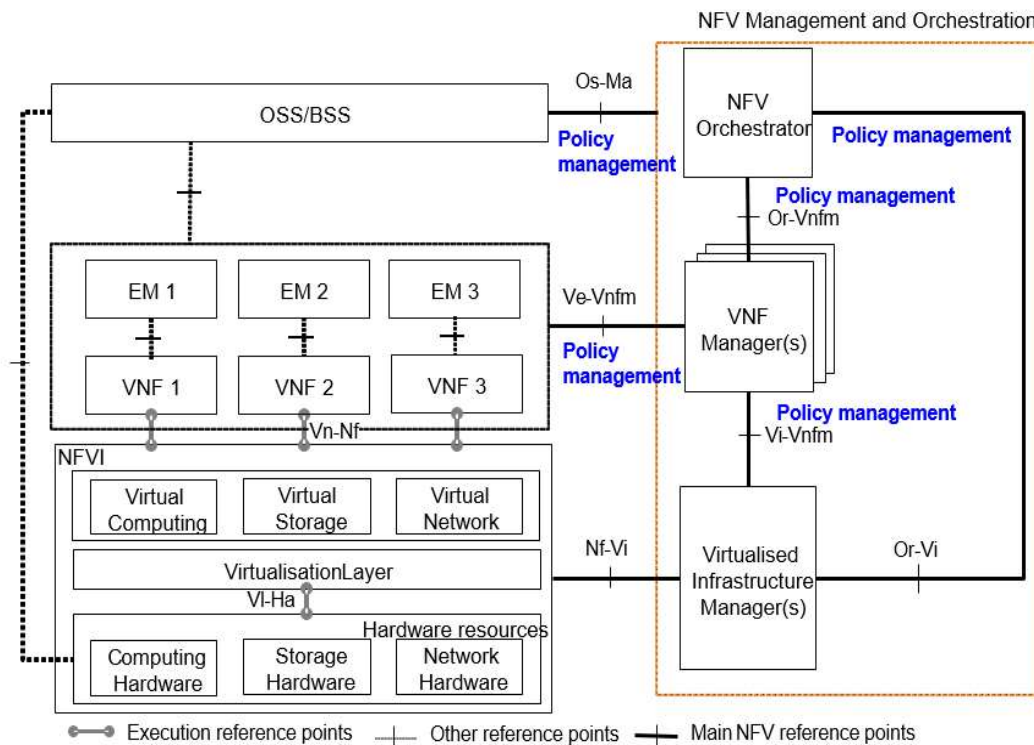
BASIC PRINCIPLES



- NFV-MANO policy is domain dependent, whose semantics associates with management functions in NFV-MANO reference architecture.
- ISG NFV specifies a generic policy management framework in NFV-MANO. NFV-MANO policy is designed by the OSS/BSS or be pre-defined in the NSD/VNFD, and be distributed to NFV-MANO for enforcement.
- An NFV-MANO entity can be mapped to either the PAP or the PF according to the context of applied policies.

Example of policy categories	Policy examples in IFA023
NS LCM policies	NS healing policy (clause 5.8.4)
VNF LCM policies	Auto-scale rule in the VNFD (clause 5.8.5)
Resource management policies	Location constraints in virtual resource allocation (clause 5.8.12)
Deployment policies	Affinity/Anti-affinity rules

DELIVERABLES IN NORMATIVE WORK



- Add policy management interface to main NFV-MANO reference points.
- Policy management interface includes:
 - a) Transfer policy
 - b) Delete policy
 - c) Query policy
 - d) Activate policy
 - e) De-active policy
 - f) Subscriptions/Notifications (policy conflict detection)
 - g) Associate/disassociate policy (applicable for Or-vnfm and Os-Ma)
- Stage 3 solutions are converged in SOL012 GS (see next slide).

DELIVERABLES IN NORMATIVE WORK CONT'D



- SOL012 GS specifies the RESTful implementation of the MANO policy management interface.
- Define the URI, HTTP method, data models and describe the sequence diagrams
- Align with the stage 2 design, provides functionalities for fulfilling interface operations of policy management.

ETSI GS NFV-IFA spec operation (see note)°	HTTP method°	Resource°	Direction°
Transfer policy°	POST°	nfvpolicy/{apiMajorVersion}/policies°	API consumer → ° API producer°
	PUT°	nfvpolicy/{apiMajorVersion}/policies/{policyId}/versions/{version}°	API consumer → ° API producer°
Delete policy°	DELETE°	nfvpolicy/{apiMajorVersion}/policies/{policyId}°	API consumer → ° API producer°
	DELETE°	nfvpolicy/{apiMajorVersion}/policies/{policyId}/versions/{version}°	API consumer → ° API producer°
Query policy°	GET°	nfvpolicy/{apiMajorVersion}/policies°	API consumer → ° API producer°
	GET°	nfvpolicy/{apiMajorVersion}/policies/{policyId}°	API consumer → ° API producer°
	GET°	nfvpolicy/{apiMajorVersion}/policies/{policyId}/selected_version°	API consumer → ° API producer°
	GET°	nfvpolicy/{apiMajorVersion}/policies/{policyId}/versions/{version}°	API consumer → ° API producer°
Activate policy°	PATCH°	nfvpolicy/{apiMajorVersion}/policies/{policyId}°	API consumer → ° API producer°
Deactivate policy°	PATCH°	nfvpolicy/{apiMajorVersion}/policies/{policyId}°	API consumer → ° API producer°
Associate policy°	PATCH°	nfvpolicy/{apiMajorVersion}/policies/{policyId}°	API consumer → ° API producer°
Disassociate policy°	PATCH°	nfvpolicy/{apiMajorVersion}/policies/{policyId}°	API consumer → ° API producer°
Subscribe°	POST°	nfvpolicy/{apiMajorVersion}/subscriptions°	API consumer → ° API producer°
Terminate Subscription°	DELETE°	nfvpolicy/{apiMajorVersion}/subscriptions/{subscriptionId}°	API consumer → ° API producer°
Notify°	POST°	(provided by API consumer)°	API producer → ° API consumer°
Query Subscription Information°	GET°	nfvpolicy/{apiMajorVersion}/subscriptions°	API consumer → ° API producer°
	GET°	nfvpolicy/{apiMajorVersion}/subscriptions/{subscriptionId}°	API consumer → ° API producer°

NEXT STEP PLAN



In Release 4, new NFV features are proposed for enhancing policy management in NFV-MANO:

- NFV automation and autonomous management (FEAT20, IFA041), introduces intent based NS management in NFVO northbound.
- Policy model enhancement (FEAT26, IFA042), targets to specify policy information model and data model in NFV-MANO.