

Inmanta Service Orchestrator

An innovative, intent-based orchestration solution for end-to-end service delivery and lifecycle management to **enable zero-touch automation**. Network programmability through powerful modeling, designed with openness and flexibility in mind, and aligned with essential industry standards such as ETSI and MEF.

Inmanta Service Orchestrator provides orchestration capabilities for **end-to-end service delivery** in telecom networks. It is an open, intent-based service orchestrator to automate the configuration and integration of all different elements of the telco architecture across domains and technologies, including physical devices. Inmanta's award-winning service orchestrator manages the full lifecycle of telco services and infrastructure.

The *Inmanta Service Orchestrator* product is derived from the open-source version¹ and is based on mature technology backed by 10+ years of research. It includes the open-source core platform and adapters, plus high-end commercial support and enhanced telecom features.

The embedded modeling language and software development kit (SDK) offer a unified way to automate and manage telco services. The modeling language describes the **intent**, i.e. the desired state and behavior (e.g. scalability, performance and security), and supports arbitrary levels of abstraction, with a strict separation between interface and implementation(s). Other powerful features include modularization, service chaining, dependency management, dry-running and release management. Inmanta is designed to support DevOps principles, allowing rapid development, team collaboration and continuous delivery.

Multi-layered modeling reduces service creation and on-boarding time, while the open, modular architecture permits to freely select and integrate best-in-class functions from different vendors or open source. Northbound integrations can be made through open RESTful APIs and a command-line interface.

The lifecycle management functionality encompasses service design, on-boarding, integration, testing, fulfillment, delivery and control, with support for monitoring, analytics and rule-based policies for performance and security.

Highlights

- Intent-based orchestration and lifecycle management for end-to-end automation
- Unifying approach for service and network orchestration
- End-to-end service delivery and lifecycle management
- Built-in NFVO, gVNFM and EMS
- Supports multiple VIMs, 3rd party VNFs, SDN controllers and cloud platforms
- Embedded modeling language and SDK for rapid service creation and on-boarding
- Scalable from few to tens of thousands of resources

¹ Inmanta offers the core platform and numerous adapters as an open-source release under the permissive Apache 2.0 license. Inmanta is fully committed to further develop the core platform in open source and to support the emerging community.

Features & Key Facts

Powerful, intent-based modeling	Embedded modeling language and SDK for rapid service creation and on-boarding
Extensive MANO capabilities	Inmanta can operate at any orchestration level: OSS, NFVO, gVNFM, NMS, EMS
Multi-domain orchestration	Support for multiple VIMs, 3 rd party VNFs, SDN controllers, virtual as well as physical network devices, cloud platforms, 3 rd party services and orchestrators
Advanced lifecycle management	Service design, on-boarding, integration, testing, fulfillment, delivery and control, with support for monitoring, analytics and rule-based policies for performance and security
Release management	Git-based version management, full traceability with Git, CI/CD support for multiple environments (development, testing, acceptance, production)
Development support	IDE support for MS Visual Studio Code, unit testing framework for service models, native Python integration
Northbound management interfaces	RESTful API and management CLI to integrate with OSS/BSS systems, inventory management and 3 rd party applications
Web UI	Dashboard
HA support	Support for active-passive failover
Rule-based policies	Define desired non-functional qualities, such as performance and security
Security: AuthN and AuthZ	Authentication (SSO) and authorization to manage and control orchestration permissions
Scalability	Manage easily up to tens of thousands of resources
LMA	Logging, monitoring and alerting
Multi-standard support	In alignment with ETSI, MEF, TOSCA, Netconf/Yang
Supported VIMs	OpenStack, VMware, AWS
Configuration management	Support for Unix-based operating systems (Amazon Linux, CentOS, Debian, Fedora, RHEL, Ubuntu)

System Requirements

Minimal systems requirements (non-HA setup)	2 CPU cores, 2 GB memory, Linux operating system, Python 3
Minimal system requirements (HA setup)	3 hosts with 2 CPU cores and 4 GB memory, Linux operating system, Python 3
3 rd party software dependencies	MongoDB (v2.6 or higher), Red Hat Keycloak (v3.4), Python 3

All third-party software used by Inmanta Service Orchestrator is licensed under a OSI-approved copyright license. Inmanta recommends to use Red Hat Enterprise Linux (RHEL) 7.