MSB Beijing Release Planning-M1

Overview

Project Name	Enter the name of the project
Target Release Name	Beijing
Project Lifecycle State	Incubation
Participating Company	AT&T, CMCC, IBM, Tech Mahindra, ZTE

Scope

What is this release trying to address?

MSB(Microservices Bus) provides key infrastructure functionalities to support ONAP Microservice Architecture(OMSA), which includes:

- Provides RESTFul API for service registration/discovery
- Provides JAVA SDK for service registration, discovery and inter-services communication
- Provides a transparent service registration proxy with OOM-Kube2MSB
- Provides a transparent service communication proxy which handles service discovery, load balancing, routing, failure handling, and visibility by Internal API Gateway(Current implementation) and Mesh sidecar(WIP)
- Provides an External API Gateway to expose ONAP services to the outside world

Note: The current name MSB(Microservices Bus) can't well explain the project anymore,
we're considering to change to a new name which can better reflect the scope and functionalities of this project.

Use Cases

MSB is an infrastructure project, it means that MSB supports every ONAP use case with no difference.

Minimum Viable Product

- Meet the planned Beijing platform maturity(S3P) requirements
- Reach out to help other projects integrate with MSB

Functionalities

List the functionalities that this release is committing to deliver by providing a link to JIRA Epics and Stories. In the JIRA Priority field, specify the priority (either High, Medium, Low). The priority will be used in case de-scoping is required. Don't assign High priority to all functionalities.

Epics

Key	Summary	T	Created	Updated	Due	Assignee	Reporter	P	Status	Resolution
MSB-105	Investigate service mesh integration with OMSA		Dec 21, 2017	Jan 02, 2019		Unassigned	None		CLOSED	Done

1 issue

Stories

Key	Summary	T	Created	Updated	Due	Assignee	Reporter	P	Status	Resolution
MSB-181	Fix the Security issue which score is 4 or higher		Mar 20, 2018	Aug 08, 2018		Unassigned	None		CLOSED	Not Done
MSB-180	Support healthy check for registered services		Mar 16, 2018	Aug 08, 2018		Unassigned	None		CLOSED	Done
MSB-179	Integration MSB GUI to Portal project		Mar 16, 2018	Aug 08, 2018		Unassigned	None		CLOSED	Done
MSB-178	Register multiple version under a service name		Mar 09, 2018	Aug 08, 2018		Unassigned	None		CLOSED	Done
MSB-156	Support websocket request forwarding		Mar 05, 2018	Aug 12, 2023		Unassigned	None		CLOSED	Done
MSB-155	Bump msb docker version to 1.1.0		Feb 28, 2018	Aug 08, 2018		Unassigned	None		CLOSED	Done
MSB-154	IP Hash Load balancing policy doesn't work		Feb 28, 2018	Aug 08, 2018		Unassigned	None		CLOSED	Done
MSB-152	MSB JAVA SDK Supports HTTPS service Registration		Feb 26, 2018	Aug 12, 2023		Unassigned	None		CLOSED	Done
MSB-148	Unit test for Kube2msb go codes		Feb 12, 2018	Aug 08, 2018		Unassigned	None		CLOSED	Done
MSB-146	Pod level service registration		Feb 08, 2018	Aug 08, 2018		Unassigned	None		CLOSED	Done
MSB-140	Providing HTTPS endpoint at API gateway		Jan 26, 2018	Aug 12, 2023		Unassigned	None		CLOSED	Done
MSB-139	MSB tutorial and demonstration for EXTAPI		Jan 24, 2018	Aug 08, 2018		Unassigned	None		CLOSED	Done
MSB-138	MSB tutorial and demonstration for AAI		Jan 24, 2018	Aug 08, 2018		Unassigned	None		CLOSED	Done
MSB-137	MSB tutorial and demonstration for Policy		Jan 24, 2018	Aug 08, 2018		Unassigned	None		CLOSED	Done
MSB-135	traffic routing and control		Jan 23, 2018	Aug 08, 2018		Unassigned	None		CLOSED	Won't Do

MSB-134	compare data model of MSB and pilot		Jan 23, 2018	Aug 08, 2018	Unassigned	None	=	CLOSED	Done
MSB-133	Investigate the possibility to use API Gateway for AAF authentication&authorization		Jan 22, 2018	Aug 08, 2018	Unassigned	None	=	CLOSED	Done
MSB-130	MSB tutorial and demonstration for DCAE		Jan 17, 2018	Aug 08, 2018	Unassigned	None	=	CLOSED	Done
MSB-127	Fix Nexus IQ Issues-swagger sdk		Jan 15, 2018	Aug 08, 2018	Unassigned	None	^	CLOSED	Done
MSB-126	Fix Nexus IQ Issues-java sdk		Jan 15, 2018	Aug 08, 2018	Unassigned	None	^	CLOSED	Done

Showing 20 out of 40 issues

Longer term roadmap

- Investigate service mesh(Istio) and integrate Istio into OMSA when it's production ready.
- Work together with Microservice subcommittee and other projects such as OOM/AAF/Logging to achieve OMSA (ONAP Microservice Architecture) to support carrier-grade ONAP platform.

Release Deliverables

Indicate the outcome (Executable, Source Code, Library, API description, Tool, Documentation, Release Note...) of this release.

Deliverable Name	Deliverable Description
API Gateway	Service API gateway which provides client request routing, client request load balancing, transformation, such as https to http, authentication & authorization for service request with plugin of auth service provider,service request logging,service request rate-limiting,service monitoring,request result cache,solve cross-domain issue for web application and other functionalities with the pluggable architecture capability. It can be deployed as external API gateway which is a transparent inter-service communication proxy or internal API gateway which exposes ONAP services to outside world.
Service Discovery	Provides service registration and discovery for ONAP microservices, which leverage Consul and builds an abstract layer on top of it to make it agnostic to the registration provider and add the needed extension.
JAVA SDK	Provides a JAVA SDK for rapid microservices development, including service registration, service discovery, request routing, load balancing, retry, etc.
Swagger SDK	Swagger sdk helps to generate swagger.json and java client sdk during the build time, it also helps to provide the swagger.json at the given URI in the run time.
Documentation	API documentation, tutorial and installation guide

Sub-Components

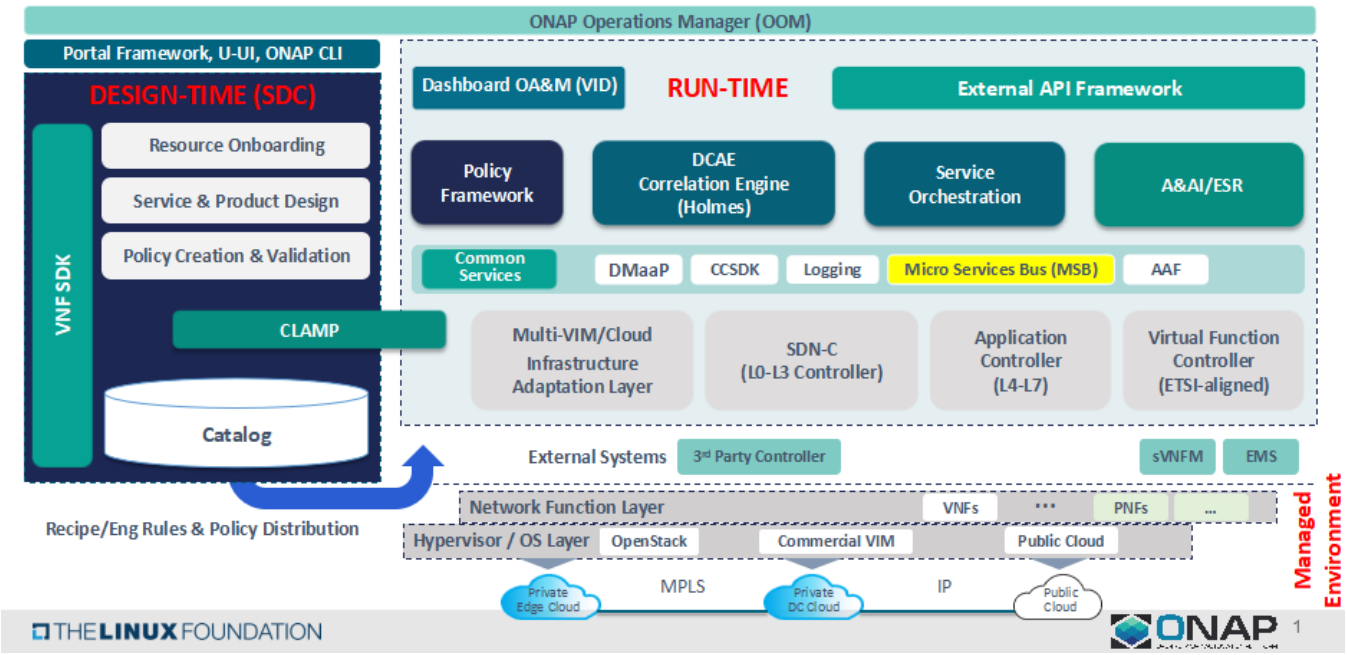
List all sub-components part of this release.
Activities related to sub-components must be in sync with the overall release.

Sub-components are repositories and are consolidated in a single centralized place. Edit the Release Components name for your project in the centralized page.

Architecture

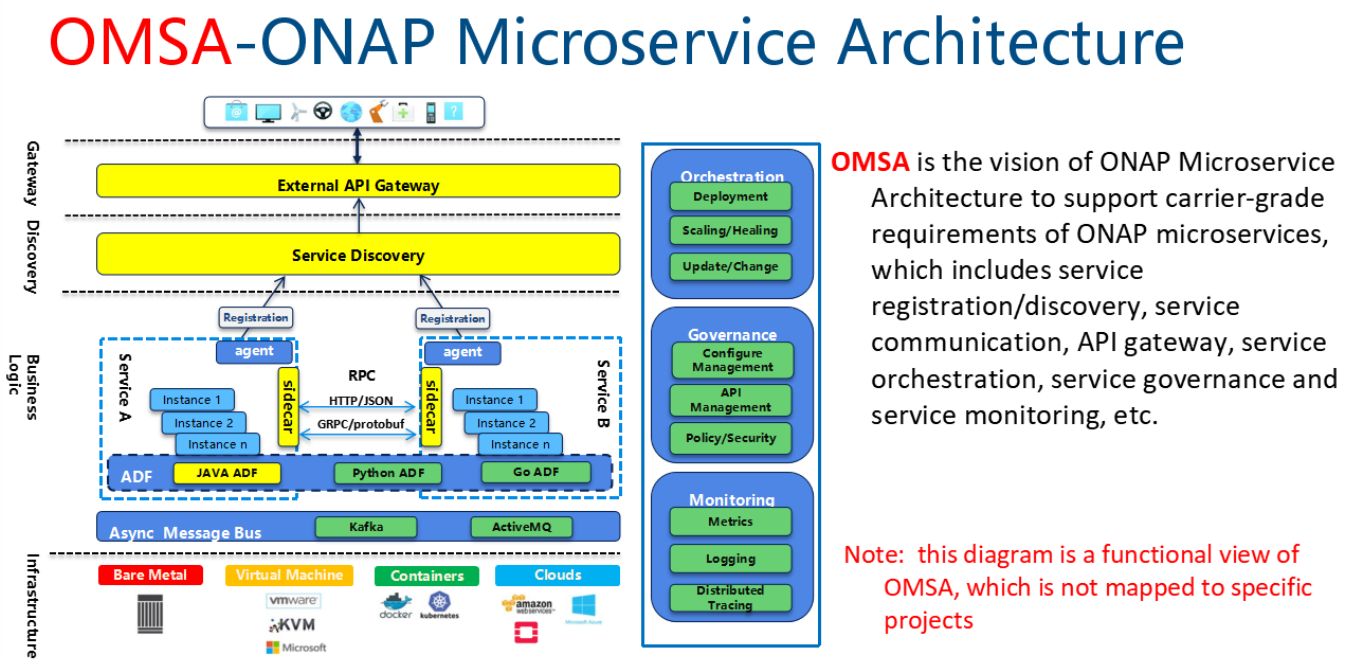
High level architecture diagram

This diagram shows how MSB project fits in the ONAP Architecture in a very high-level view.



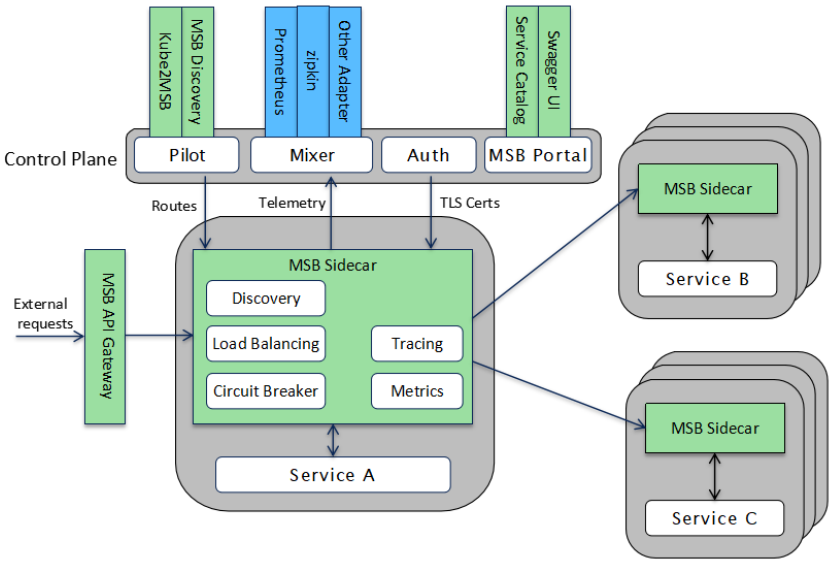
If we take a closer look at ONAP Microservice Architecture, we get this diagram. The yellow blocks are currently in this project.

Please note that this diagram is a functional view of OMSA, which is not mapped to specific projects. So some of the blocks are currently implemented in this project, some of the blocks are implemented in other projects such as OOM and DMaaP, and other blocks may not exist yet, which need to be implemented or integrate with opensource projects to provide these functionalities. MSB will work with the related projects to provide all the OMSA functionalities to support a reliable, resilient and scalable ONAP Microservice Infrastructure.



MSB will provide service mesh as a transparent service communication layer which handles service discovery, load balancing, routing, failure handling, and visibility.

MSB Service Mesh Architecture



- ❑ **MSB Discovery is plugged into Pilot as a service discovery source**
- ❑ **MSB Internal API Gateway is enhanced as a sidecar proxy to address the Carrier Grade challenges**
- ❑ **It can be deployed as the Internal API Gateway that is a cluster shared by multiple service instances or the sidecar that is one per service instance**
- ❑ **MSB API Gateway is used to expose ONAP services to external system**
- ❑ **Add MSB Portal to control plane to provide service Catalog ,swagger UI of Restful API, service mesh configuration (long term goal),etc.**

Platform Maturity

Refering to CII Badging Security Program and Platform Maturity Requirements, fill out the table below by indicating the actual level , the targeted level for the current release and the evidences on how you plan to achieve the targeted level.

Area	Actual Level	Targeted Level for current Release	How, Evidences	Comments
Performance	0	1	Capture the baseline performance of API Gateway, such as QPS Latency Transfer/sec.	• 0 -- none • 1 – baseline performance criteria identified and measured • 2 & 3 – performance improvement plans created & implemented
Stability	0	1	72 hours soak test with random transactions from ONAP microservices via Internal API Gateway.	• 0 – none • 1 – 72 hours component level soak w/random transactions • 2 – 72 hours platform level soak w/random transactions • 3 – 6 months track record of reduced defect rate
Resiliency	1	2	MSB integrates with OOM and leverage kubernetes to provide automated detection and recovery	• 0 – none • 1 – manual failure and recovery (< 30 minutes) • 2 – automated detection and recovery (single site) • 3 – automated detection and recovery (geo redundancy)
Security	0	1	Reach the 50% Test Coverage. It's unclear how to get CII Passing badge, will Investgate and figure out.	• 0 – none • 1 – CII Passing badge + 50% Test Coverage • 2 – CII Silver badge; internal communication encrypted; role-based access control and authorization for all calls • 3 – CII Gold
Scalability	1	1	Provide cluster deployment for MSB components to achieve ingle site horizontal scaling.	• 0 – no ability to scale • 1 – single site horizontal scaling • 2 – geographic scaling • 3 – scaling across multiple ONAP instances
Manageability	1	1	MSB provide access logging at API gateway.	• 1 – single logging system across components; instantiation in < 1 hour • 2 – ability to upgrade a single component; tracing across components; externalized configuration management

Usability	1	1	Provide all the required documentation.	• 1 – user guide; deployment documentation; API documentation • 2 – UI consistency; usability testing; tutorial documentation

• API Incoming Dependencies

List the API this project is expecting from other projects.
Prior to Release Planning review, Team Leads must agreed on the date by which the API will be fully defined. The API Delivery date must not be later than the release API Freeze date.

Prior to the delivery date, it is a good practice to organize an API review with the API consumers.

Note: MSB project has no incoming dependency.

API Name	API Description	API Definition Date	API Delivery date	API Definition link (i.e.swagger)

• API Outgoing Dependencies

API this project is delivering to other projects.

Note: MSB project estimate that there will be no API modification during Beijing release, we will continue to use the same APIs published in Amsterdam.

API Name	API Description	API Definition Date	API Delivery date	API Definition link (i.e. swagger)
Service Registration	RESTFul API for service registration with MSB.	1/1/2018	release API Freeze date	Microservice Bus API Documentation
Service Discovery	RESTFul API for service discovery with MSB.	1/1/2018	release API Freeze date	Microservice Bus API Documentation
JAVA SDK	JAVA SDK for service registration, discovery and inter-services communication.	1/1/2018	release API Freeze date	Microservice Bus API Documentation

• Third Party Products Dependencies

Third Party Products mean products that are mandatory to provide services for your components. Development of new functionality in third party product may or not be expected.
List the Third Party Products (OpenStack, ODL, RabbitMQ, ElasticSearch,Crystal Reports, ...).

Name	Description	Version
Consul	Consul is a distributed, highly-available, and multi-datacenter aware tool for service discovery, configuration, and orchestration.	0.9.3
OpenResty	OpenResty® is a full-fledged web platform that integrates the standard Nginx core, LuaJIT, many carefully written Lua libraries, lots of high quality 3rd-party Nginx modules, and most of their external dependencies. It is designed to help developers easily build scalable web applications, web services, and dynamic web gateways.	1.11.2.3
Redis	Redis is an in-memory data structure store, used as a database, cache and message broker.	3.2.8

• Testing and Integration Plans

Provide a description of the testing activities (unit test, functional test, automation,...) that will be performed by the team within the scope of this release.

Describe the plan to integrate and test the release deliverables within the overall ONAP system.
Confirm that resources have been allocated to perform such activities.

1. Unit test: the goal is 50% coverage for Amsterdam Release.
2. Functional test: Leverage the robot framework infrastructure to provide the functional test.
3. Integration test: Support integration team to provide the end to end integration test.
4. All the above should be automation tests run on the LF Jenkins Infrastructure.

- # Gaps

This section is used to document a limitation on a functionality or platform support. We are currently aware of this limitation and it will be delivered in a future Release.
List identified release gaps (if any), and its impact.

Gaps identified	Impact
To fill out	To fill out

- # Known Defects and Issues

Provide a link toward the list of all known project bugs.

Key	Summary	T	Created	Updated	Due	Assignee	Reporter	P	Status	Resolution
MSB-195	HTTP protocol used over HTTPS port		Apr 21, 2018	Aug 08, 2018		Unassigned	None		CLOSED	Done
MSB-190	There is no .bat script to setup discovery		Apr 04, 2018	Aug 08, 2018		Unassigned	None		CLOSED	Done
MSB-189	Health check for https API failed		Apr 04, 2018	Aug 08, 2018		Unassigned	None		CLOSED	Done
MSB-187	MSB discovery API in swagger is not published		Mar 28, 2018	Aug 08, 2018		Unassigned	None		CLOSED	Done
MSB-183	MSB JAVA SDK Registration Error		Mar 23, 2018	Aug 08, 2018		Unassigned	None		CLOSED	Done
MSB-153	MSB kube2msb registrator does not register LoadBalancer type service		Feb 27, 2018	Aug 08, 2018		Unassigned	None		CLOSED	Done
MSB-150	Kube2msb doesn't unregister service		Feb 13, 2018	Aug 08, 2018		Unassigned	None		CLOSED	Done
MSB-119	API Gateway Jenkins job failed		Jan 13, 2018	Aug 08, 2018		Unassigned	None		CLOSED	Done
MSB-102	the msb client has heavy dependencies		Dec 06, 2017	Aug 08, 2018		Unassigned	None		CLOSED	Done
MSB-101	Missing .gitreview file		Nov 28, 2017	Aug 08, 2018		Unassigned	None		CLOSED	Done
MSB-100	Add proxy support for building images process		Nov 27, 2017	Aug 08, 2018		Unassigned	None		CLOSED	Done
MSB-99	Microservice cancel returns with 500 Internal sever error		Nov 26, 2017	Aug 08, 2018		Unassigned	None		CLOSED	Done
MSB-92	microservice delete is reporting 500, though it deleted the service		Oct 27, 2017	Aug 08, 2018		Unassigned	None		CLOSED	Done

13 issues

- # Risks

List the risks identified for this release along with the plan to prevent the risk to occur (mitigation) and the plan of action in the case the risk would materialized (contingency).

Risk identified	Mitigation Plan	Contingency Plan
To fill out	To fill out	To fill out

- # Resources

Fill out the Resources Committed to the Release centralized page.

- ## Release Milestone

The milestones are defined at the Release Level and all the supporting project agreed to comply with these dates.

MSB project follows the ONAP Beijing release milestones.

- ## Team Internal Milestone

This section is optional and may be used to document internal milestones within a project team or multiple project teams. For instance, in the case the team has made agreement with other team to deliver some artifacts on a certain date that are not in the release milestone, it is recommended to provide these agreements and dates in this section.

It is not expected to have a detailed project plan.

Date	Project	Deliverable

- ## Documentation, Training

- Reach out to each project to help them to integrate with MSB, including tutorial, demonstration and code example.
- Provide introduction, guideline and API documentation in ONAP wiki.
- Populate release documentation content to http://onap.readthedocs.io includes items such as:
    - Installation instructions
    - Configuration instructions
    - Developer guide
    - End User guide
    - Admin guide
    - ...

> **Note**
>
> The Documentation project will provide the Documentation Tool Chain to edit, configure, store and publish all Documentation asset.

Other Information

- ### Vendor Neutral

All proprietary trademarks, logos, product names, etc. have been removed to comply with this rule and be agnostic of any proprietary symbols. If there is any new findings, the team promises to remove them ASAP.

- ### Free and Open Source Software

FOSS activities are critical to the delivery of the whole ONAP initiative. The information may not be fully available at Release Planning, however to avoid late refactoring, it is critical to accomplish this task as early as possible.
List all third party Free and Open Source Software used within the release and provide License type (BSD, MIT, Apache, GNU GPL,...).
In the case non Apache License are found inform immediately the TSC and the Release Manager and document your reasoning on why you believe we can use a non Apache version 2 license.

Each project must edit its project table available at Project FOSS.

Charter Compliance

The project team comply with the ONAP Charter.