LF NETWORKING
Developer & Testing Forum

ONAP: Service Mesh in London

Status of ServiceMesh
in ONAP

https://lfnetworking.org

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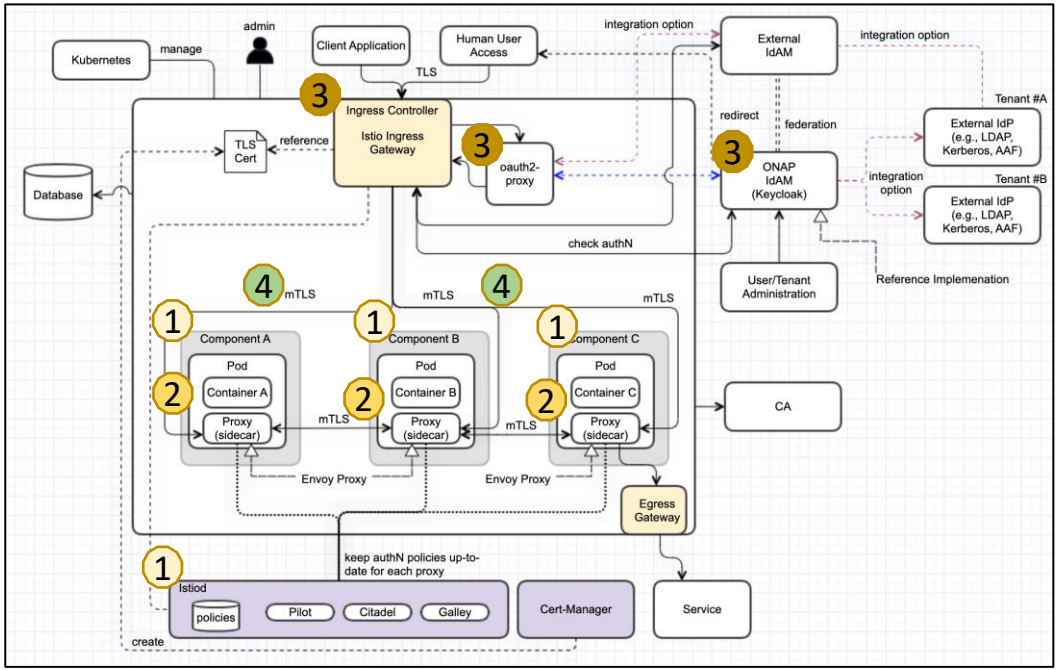
ServiceMesh Target Vision

- It is based on Jakarta plans (https://wiki.lfnetworking.org/display/LN/2022-01-13+-+ONAP%3A+ONAP+on+Service+Mesh+status+update)
- Service Mesh intent is to use Istio for encrypting inter pod traffic and to use JWT in conjunction with Istio for authN and authZ. Details see ArcCom/SecCom page: ONAP Next Generation Security & Logging Architecture



- **Step 1 (Certificates)**
  - Deployment of ONAP in "Istio" enabled system
  - Enable HTTP communication + AAF disabling
- **Step 2 (Authorization)**
  - Service Account per subcomponent
  - "AuthorizationPolicy" for inter-component communication
- **Step 3 (simple RBAC)**
  - Deploy and configure Ingress, Keycloak, OAuth2-Proxy
  - JWT configuration on "AuthorizationPolicy" for external user access
  - User access authorization is only performed on the first component (NBI, UUI, Portal, APIs…)
- **Step 4 (full RBAC)**
  - User access authorization is performed by each component via JWT token
  - Components pass the header to the connected components

Status in London

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Step 1 (Certificates)
- Deployment of ONAP in “Istio” enabled system
- Enable HTTP communication + AAF disabling

→ (London) → OOM-2820 Components on Service Mesh
Open component fixes:
UUI, CLI, VNFSDK, HOLMES, A1PolicyManagement, CDS-UI, OOF, DCAE-OpenAPI-Manager

Step 2 (Authorization)
- Service Account per subcomponent
- “AuthorizationPolicy” for inter-component authorization

→ (London) → OOM-2822 Service 2 Service Authorization with Service Mesh

Step 3 (Simple RBAC)
- Deploy and configure Ingress, Keycloak, OAuth2-Proxy
- JWT configuration on “AuthorizationPolicy” for external user access
- User access authorization is only performed on the first component (NBI, UUI, Portal, APIs…)

→ (London) → OOM-2431 ONAP on Istio with authentication
(Ingress, Keycloak, OAuth2 deployment and configuration)

→ (London) → OOM-2823 Customer 2 Service Authorization on Service Mesh
(done for portal-ng, planned for other services…)

Step 4 (Full RBAC)
- User access authorization (e.g., fine-grained one) is only performed by each component via JWT token
- Components pass the header to the connected components

→ (London) Not Planned

- OOM SM Tests
  - OOM-3004 Test ONAP on SM
- OOM CRs
  - https://gerrit.onap.org/r/q/topic:%2522service_mesh%2522

Requirement for London

REQ-1349 Removal of AAF

- Component offers only unencrypted http interface
- “AAF enabled” option will be removed from charts
- Code handling of AAF certificate/SMS can be removed

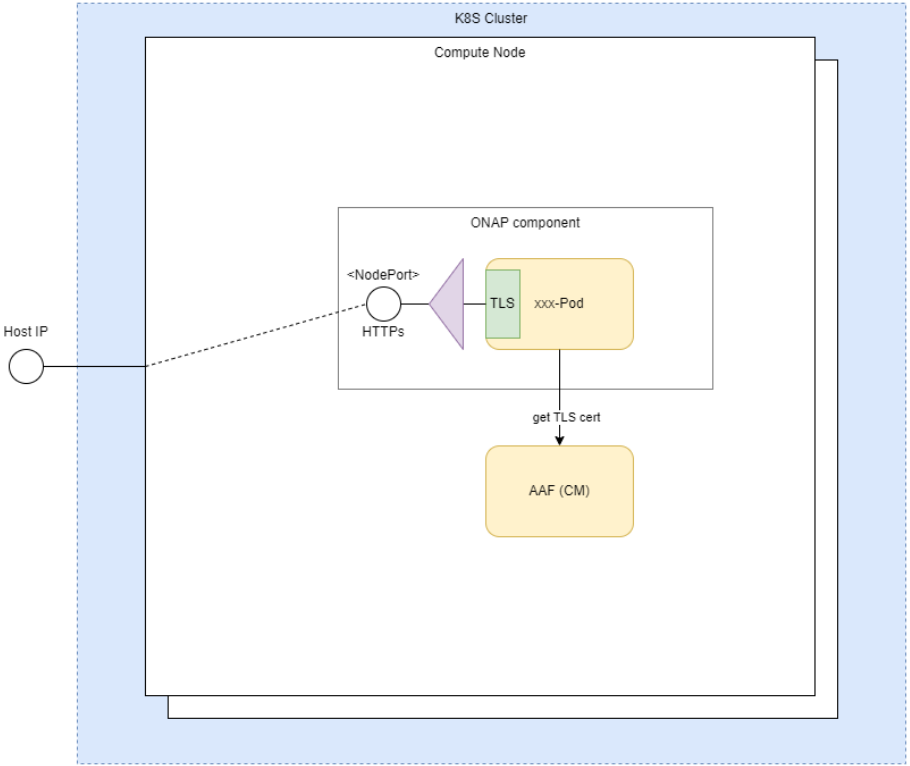
REQ-1351 External secure communication only via Ingress

- No Nodeports, when Ingress option is used

REQ-1350 All component must be able to run without MSB

- In the default ONAP deployment case using ServiceMesh, an Ingress Gateway is used for external access to the services.
- Therefor the MSB component would not be needed and must be disabled.
- If the internal API gateway is required, it can be implemented in the Ingress gateway

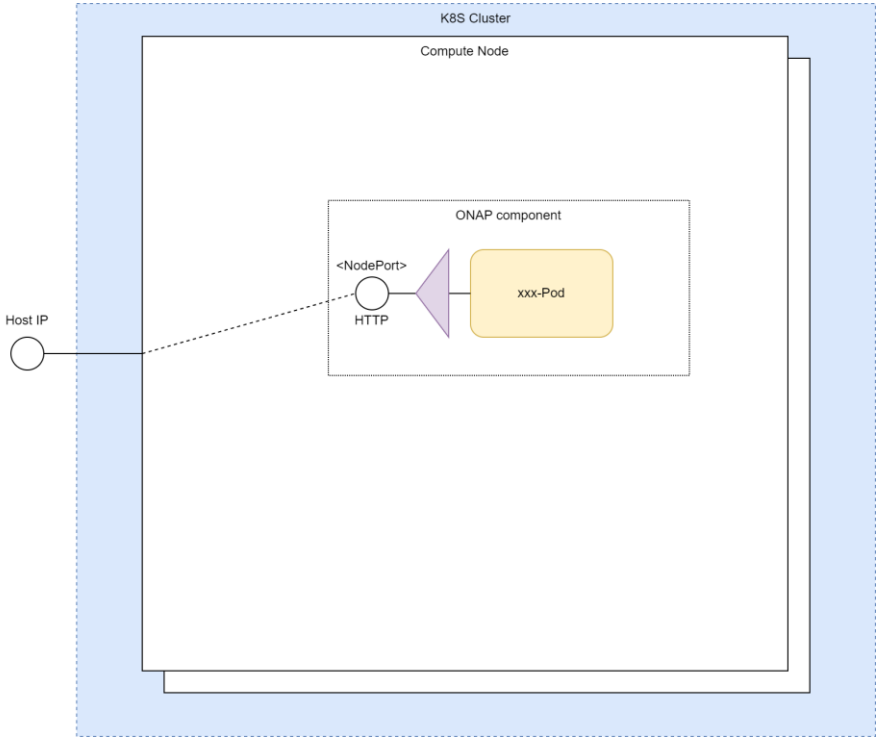
ONAP Deployment up to Kohn



- ONAP pods providing TLS (HTTPs) interfaces
- Retrieve certificates during startup from AAF Certificate Manager
- ONAP pod interface is exposed via service using "NodePort" (if cluster external access is required)
- Hosts expose the "NodePort" via its Host Ips (or hostname)

- Example (SDC-UI):
https://<HostIP>:30207/sdc1/portal

“Development” deployment in London

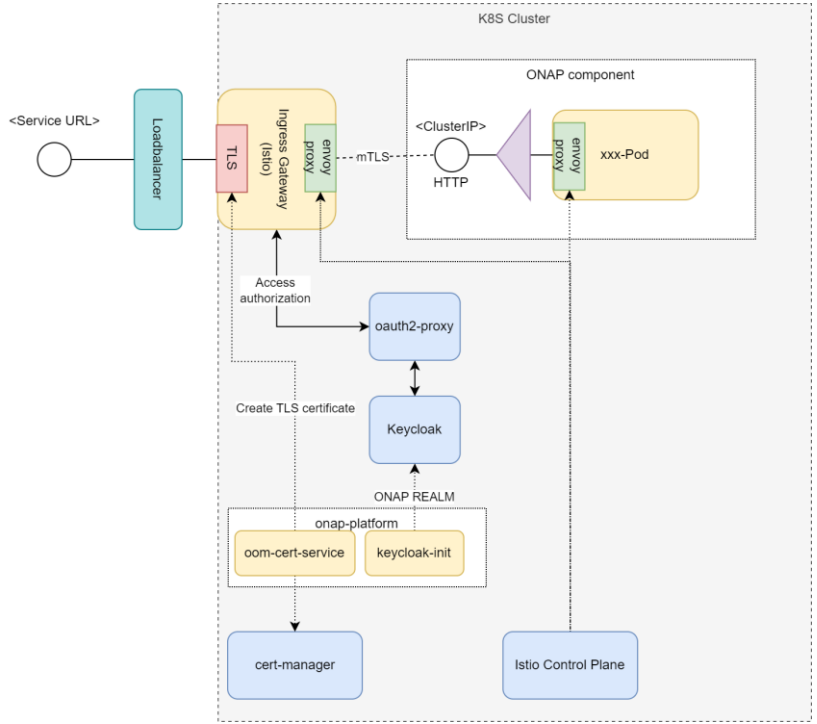


For testing purpose only („development“)

- AAF is not deployed anymore !
- ONAP pods non-TLS (HTTP) interfaces
- ONAP pod interface is exposed via service using "NodePort" (if cluster external access is required)
- Hosts expose the "NodePort" via its Host Ips (or hostname)

- Example (SDC-UI):
http://<HostIP>:30207/sdc1/portal

“Production” deployment in London



Secure setup („production“)

- ONAP pods provide non-TLS (HTTP) interfaces
- Encrypted communication via Envoy Proxies (nTLS) provided by ServiceMesh (Istio)
- ONAP pod interface is exposed through Ingress (Istio-Gateway)
- Service access via hostname (configured by Gateway/VirtualService in Ingress GW)
- External TLS interface on Ingress Gateway
- Authentication/Authorisation via oauth2-proxy and Keycloak

- Example (SDC-UI):
https://sdc-fe-ui.simpledemo.onap.org

Integration/E2E tests of SM

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“Production” deployment tests:
- https://logs.onap.org/onap-integration/daily/onap-daily-dt-oom-sm-master/

“Development” deployment tests:
- https://logs.onap.org/onap-integration/daily/onap-daily-dt-oom-master/

Gating Tests:
- https://logs.onap.org/onap-integration/gating/
- Currently using “Development” setup
- Will be soon updated to “Production”

Open testcase fixes:
- 5GBulkPM https://jira.onap.org/browse/OOM-3100

Open component fixes:
- UUI https://jira.onap.org/browse/OOM-2998 -> Fix ongoing
- A1Policy Management https://jira.onap.org/browse/OOM-3008 https://jira.onap.org/browse/CCSDK-3772
- VNFSDK https://jira.onap.org/browse/OOM-3095
- CLI https://jira.onap.org/browse/OOM-3096
- CDS-UI https://jira.onap.org/browse/CCSDK-3814
- HOLMES https://jira.onap.org/browse/OOM-3101
- SO https://jira.onap.org/browse/SO-4027
- DCAE (VES-OpenAPI-Manager) https://jira.onap.org/browse/DCAEGEN2-3335