

Architecture: Application Network Student Notes

Getting Certified 🎓

- **Architecture APP NET Practice Exam:**
<https://training.mulesoft.com/certification/architect-platform-level1/practice-exam>
- Application Networks Certification:
<https://training.mulesoft.com/certification/architect-platform-level1>
- Online Exam Readiness Kit:
<https://help.learn.mulesoft.com/hc/en-us/articles/360057127674-MuleSoft-Exam-Readiness-Kit>
- **Custom-made checklist provided by the Instructor:**
<https://tremendous-hope-9b2.notion.site/Architecture-Application-Networks-a16ba993e5784d359654a2e604dc7925>
- Catalyst: <https://catalyst.mulesoft.com/>
 - <https://github.com/orgs/mulesoft-catalyst/repositories>
 - <https://trailhead.salesforce.com/content/learn/modules/mulesoft-catalyst-knowledge-hub>
- Archimate 3: <https://pubs.opengroup.org/architecture/archimate3-doc/>
- Archi Modeling Tool: <https://www.archimatetool.com/download/>
 - <https://archimatetool.gitbook.io/project/>
 - Example diagram
<https://online.visual-paradigm.com/app/diagrams/#diagram:proj=0&type=ArchiMateDiagram&gallery=/repository/5922f9e0-686e-48d5-b190-67a772c16da4.xml&name=Business%20Strategy%20View>
 - Motivation diagram:
<https://sparxsystems.com/resources/gallery/diagrams/architecture/arc-motivation-viewpoint.html>
- Document your architecture <https://adr.github.io/>
 - Example:
<https://github.com/joelparkerhenderson/architecture-decision-record/blob/main/examples/metrics-monitors-alerts/index.md>
 - <https://cloud.google.com/architecture/architecture-decision-records>
- C4E Center for Enablement Diagrams:
<https://architect.salesforce.com/diagrams/template-gallery/center-of-excellence>
 - Anypoint Platform REST APIs:
<https://anypoint.mulesoft.com/exchange/portals/anypoint-platform/>
 - Anypoint Audit Log API:
<https://anypoint.mulesoft.com/exchange/portals/anypoint-platform/f1e97bc6-3>

15a-4490-82a7-23abe036327a.anypoint-platform/audit-log-query-api/minor/1.0/console/documentation/%23151/

- Documentation for Audit Logging
<https://docs.mulesoft.com/access-management/audit-logging>
- KPIs from Open Group: http://www.opengroup.org/cloud/wp_cloud_roi/p5.htm
- GSA Metrics for KPIs https://tech.gsa.gov/guides/dev_sec_ops_guide/
 - Software Quality Attributes:
<https://iso25000.com/index.php/en/iso-25000-standards/iso-25010>

!New Cloudhub 2.0 <https://docs.mulesoft.com/cloudhub-2/>

- Anypoint Flex Gateway:
<https://developer.mulesoft.com/tutorials-and-howtos/understanding-anypoint-flex-gateway-overview-introduction/>
- New Feature Anypoint Teams:
<https://docs.mulesoft.com/access-management/teams>
- Multi-Factor Authentication:
<https://docs.mulesoft.com/access-management/multi-factor-authentication>
- Cloudhub Regions
<https://docs.mulesoft.com/runtime-manager/cloudhub-networking-guide#regional-services>
- Universal API Management Tools (CLIs)
 - API Catalog CLI: <https://www.npmjs.com/package/api-catalog-cli>
 - <https://docs.mulesoft.com/exchange/apicat-about-api-catalog-cli> (Get started with Catalog CLI)
 - Anypoint CLI:
<https://docs.mulesoft.com/anypoint-cli/3.x/api-mgr#api-mgr-api-manage>
 - API Governance
 - How to create API Governance rulesets:
https://github.com/aml-org/amf-custom-validator/blob/develop/docs/validation_tutorial/validation.md
 - https://a.ml/docs/amf/amf_playground
 - Run API Governance on demand on CI/CD
<https://docs.mulesoft.com/anypoint-cli/3.x/anypoint-platform-cli-commands#api-governance>
- MuleSoft Support Terms: <https://www.mulesoft.com/legal/support-maintenance-terms>
 - <https://www.mulesoft.com/anypoint-pricing>
 - <https://www.mulesoft.com/trust-center>
 - <https://www.mulesoft.com/legal/versioning-back-support-policy#anypoint-connectors>
 - Salesforce Compliance Terms:
<https://compliance.salesforce.com/en/services/mulesoft>
 - Anypoint Platform security compliance:
<https://help.mulesoft.com/s/article/About-Anypoint-Platform-Security-Compliance-PCI-DSS-HITRUST-SSAE-16-SOC-2-FIPS>

- OAuth 2.0 (This protocol is used by the platform + OpenID Connect):
<https://oauth.net/2/>
<https://docs.mulesoft.com/access-management/external-identity>
- **New Feature Connected Apps:**
<https://docs.mulesoft.com/access-management/connected-apps-overview>
- API Policies: <https://docs.mulesoft.com/policies/policies-included-directory>
- Rate Limiting policy:
<https://www.techtarget.com/searchsecurity/feature/Implement-API-rate-limiting-to-reduce-attack-surfaces>
- Anypoint Security Edge:
<https://docs.mulesoft.com/anypoint-security/index-policies>
- Semantic Versioning: <https://semver.org/>
- REST API Versioning: <https://restfulapi.net/versioning/>
- VPC Anypoint: <https://docs.mulesoft.com/runtime-manager/vpc-tutorial>
- API Autodiscovery:
<https://docs.mulesoft.com/api-manager/2.x/configure-autodiscovery-4-task>
- API Policies with Service Mesh:
<https://docs.mulesoft.com/service-mesh/1.2/manage-apis-with-service-mesh>

Service Mesh Demo:

<https://videos.mulesoft.com/watch/hiwRAFiUfTTTHM5JK7EbCEN>

- API Community Manager:
<https://www.mulesoft.com/platform/api/community-manager>
- Object Store:
 - <https://help.mulesoft.com/s/article/The-Different-Types-of-Object-Stores-Explained>
 - <https://docs.mulesoft.com/object-store/osv2-faq>
 - <https://docs.mulesoft.com/object-store/osv2-tutorial>
 - <https://docs.mulesoft.com/object-store/osv2-apis>
- Dedicated Load Balancer:
<https://docs.mulesoft.com/runtime-manager/lb-architecture>
<https://docs.mulesoft.com/runtime-manager/dedicated-load-balancer-tutorial>
<https://help.mulesoft.com/s/article/Basic-Dedicated-Load-Balancer-DLB-Guide>
[https://help.mulesoft.com/s/article/DLB-Dedicated-Load-Balancer-Knowledge-Ba
se-Master-page](https://help.mulesoft.com/s/article/DLB-Dedicated-Load-Balancer-Knowledge-Base-Master-page)

Non Functional Requirements:

- https://en.wikipedia.org/wiki/List_of_system_quality_attributes
- <https://www.guru99.com/non-functional-requirement-type-example.html>
- Anypoint MQ :
<https://www.mulesoft.com/platform/anypoint-mq-message-queue>
 - <https://docs.mulesoft.com/mq/mq-apis>
 - <https://docs.mulesoft.com/mq/mq-tutorial>

- Anypoint Visualizer:
<https://blogs.mulesoft.com/dev/anypoint-platform-dev/get-to-know-anypoint-visualizer/>
 - <https://docs.mulesoft.com/visualizer/setup>
- Bounded Context Data Model (DDD Domain Driven Design):
 - <https://academy.lightbend.com/courses/course-v1:lightbend+LRA-DomainDrivenDesign+v1/about>
 - <https://techiecook.com/2020/08/17/ddd-domains-bounded-contexts/>
 - <https://stefan.kapferer.ch/2020/09/14/domain-driven-service-design/>
 - https://en.wikipedia.org/wiki/Domain-driven_design
 - <https://github.com/ketan-gote/ddd-example>
 - <https://www.domainlanguage.com/ddd/>

Context Mapper Tool:

- <https://contextmapper.org/>
- <https://github.com/ContextMapper/context-mapper-examples/tree/master/src/main/cml/insurance-example>
- Successful Git Model: <https://nvie.com/files/Git-branching-model.pdf>
- Anypoint CLI:
<https://docs.mulesoft.com/runtime-manager/anypoint-platform-cli>
- Manage RAML as a Maven artifact:
 - <https://docs.mulesoft.com/exchange/to-publish-assets-maven>
- Microservices vs API-Led Connectivity:
<https://www.slideshare.net/mulesoft/microservices-on-anypoint-platform-75691806>
- Anypoint Transit Gateway
<https://blogs.mulesoft.com/api-integration/cloud/aws-transit-gateway-support/>
 - Autoscaling:
<https://docs.mulesoft.com/runtime-manager/autoscaling-in-cloudhub>
 - Query for connectors": category:"level" = "Premium"
 - Whitepapers and Compliance resources
 - <https://www.mulesoft.com/lp/whitepaper/saas/cloud-security>
 - <https://www.mulesoft.com/trust-center>
 - HTTPS Explanation: <https://howhttps.works/why-do-we-need-https/>
 - 8 Fallacies distributed computing:
<https://www.mypassionfor.net/wp-content/uploads/2020/03/8-fallacies-of-distributed-computing-1024x714.png>
 - How to authorize API Clients with OpenID Connect :
<https://blogs.mulesoft.com/api-integration/security/secure-api-with-oidc/>
 - Circuit breaker:
 - <https://github.com/dyeeye/mule-circuit-breaker-module>
 - <https://dzone.com/articles/circuit-breaker-module>

- Cloud Tools: <https://landscape.cncf.io/?zoom=250>
- Integration Test BAT tool:
<https://docs.mulesoft.com/api-functional-monitoring/bat-install-task>
<https://anypoint.mulesoft.com/apitesting/playground/>
- Automation and CI/CD References:
<https://github.com/mulesoft-catalyst/muleapp-cicd-pipeline-template/blob/master/Jenkinsfile>
- <https://docs.mulesoft.com/exchange/apicat-about-api-catalog-cli> API Catalog Automation CLI
- Architecture Plan to recover from failures/disasters:
https://en.wikipedia.org/wiki/Disaster_recovery_and_business_continuity_auditing
- Integration Testing and Functional Monitoring tool:
<https://docs.mulesoft.com/api-functional-monitoring/bat-top>
 - <https://docs.mulesoft.com/monitoring/performance-and-impact>
- <https://engineering.salesforce.com/asynccapi-and-openapi-an-api-modeling-approach-db9873695910>
- Archimate: <https://archimatetool.gitbook.io/project/archimate-and-togaf-layers>
- Cloudhub Disaster Recovery and High Availability:
<https://docs.mulesoft.com/runtime-manager/cloudhub-hadr>

Additional Resources

- Setting Up Visualizer: <https://docs.mulesoft.com/visualizer/cloudhub-setup>
- Event-Driven Architecture (Async API):
<https://blogs.mulesoft.com/news/anypoint-platform/news-event-driven-architecture-async-api/>
 - <https://www.asyncapi.com/>
- Sunset Header (How to deprecate an API):
<https://datatracker.ietf.org/doc/html/rfc8594#section-1.4>
- **Public Postman Collection for Anypoint Platform APIs:**
<https://www.postman.com/mulesoft-api/workspace/mulesoft-platform-apis/collection/16547909-1e97eed6-ef8c-4d46-9d30-2ff41c8102c5?ctx=documentation>
 - Tutorial how to use the postman collection:
<https://developer.mulesoft.com/tutorials-and-howtos/postman-anypoint-platform-apis-getting-started-tutorial/>
- MuleSoft Developer Tutorials: <https://developer.mulesoft.com/tutorials-and-howtos>
- Metrics Toolkit project: <https://github.com/mulesoft-catalyst/metrics-toolkit>
- REST API Best Practices:
<https://schweizerischebundesbahnen.github.io/api-principles/restful/best-practices/>
- <https://standards.rest/>
- <https://roadmap.sh/software-architect/>

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- <https://help.mulesoft.com/s/ideas#08734000000g0KIAAY>
- <https://help.mulesoft.com/s/ideas#0872T000000buSVQAY>