Mojaloop Releases & Core maintenance

PI-22, June 2023.

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Agenda

1. Introduction

2. PI-21 update - Mojaloop platform

   a. v15.1.0, IaC support

   b. FPv3 releases

   c. Testing enhancements

   d. Move to EKS

3. Releases & roadmap

Mojaloop Platform

1. Mojaloop Core
   - Transactional hub components and Settlement i.e. API layer, Central ledger (including bulk), ALS, Quoting, Trx req

2. 3PPI, ml-connectors
   - Best practice Mojaloop connectors. I.e. Third-party services, sdk adapter/ml-connectors

3. API Gateway
   - Adds in the components and enforces the Mojaloop Security design
   - IP filtering / white-listing, Ingress/Egress, Firewalls, Security support (**JWS**, **mTLS**) [IaC provides this via WSO2]

4. Supporting services
   - Interop: Connect with settlement banks, Onboarding FSPs, integrations (connection management)
   - Mojaloop Toolkit (TTK), PM4ML instances, Simulators, ALS support, CEP, Events processing
   - Oracles - Customer or Merchant Registries
   - Mojaloop OSS, community tools

5. Infrastructure
   - Kubernetes, Infrastructure as Code, Automated deployments (mini-loop, IaC, Rancher)
   - Deployment artifacts - Helm Charts, Docker Containers

6. Finance portal (RBAC), Reporting
   - Hub operator UI & API experience layer that is Implemented by business operations framework.

7. Monitoring support (Operational support)
   - Operational support and tracing (e.g. EFK, and/or Prometheus, Grafana, Loki, etc) [IaC provides this via Grafana, Prometheus & Loki]

Workstream Update -
https://community.mojaloop.io/core-team

Workstream Name:	Mojaloop releases & core maintenance
Roadmap Pillar:	Quality Product (Foundation)
Lead:	Miguel de Barros, Sam Kummary
Workstream Objectives:	1. Maintain Mojaloop v15 and improve stability 2. Maintain Mojaloop's QA/Dev environments for bug fixes and other changes 3. End-to-end support for Request-to-Pay scenario to support Merchant payments 4. Support existing implementers by fixing bugs and performing other maintenance related tasks 5. Implement FSPIOP version changes (e.g. FSPIOP v1.2 Patch Notifications) 6. Settlements enhancements to be included with Mojaloop releases
Progress Against Objectives:	1. Maintain Mojaloop v15 with improved stability (in-progress) 2. Improvements / bug-fixes to support Request-to-Pay end-to-end (in-progress)
Anticipated Progress by PI End:	Most of the objectives achieved (#1, #2, #3, #4), except the items with roadblocks Upgrade nodejs version for repositories worked on during the PI
Roadblocks:	1. Resourcing - resolved recently mid-PI 2. FSPIOP v1.2 published (dependency) 3. Settlement workstream collaboration (dependency)
Support Needed:	1. DevOps for IaC Maintenance / Enhancements 2. Dedicated QA to validate Mojaloop / IaC Releases 3. This could be you!

Mojaloop v15.1.0

PI-21 Official Release

Release Date: **2023-06-21**

0. Summary

Minor enhancements for v15.0.0 Release, which includes the following changes:

1. Account Lookup Service & Transaction Request Service updated to support test ISO currencies: `XTS` , `XXX`
2. CronJob for cleanup scripts to ensure that liquidity is reset. This should allow daily cron-jobs to run indefinitely.
3. SDK Scheme Adapter support for non-auth based Request-To-Pay scenarios has been enhanced and closely aligned to the FSPIOP v1.1 Specification, with Helm tests added to verify this functionality. Ensure you enable them by configuring the following mojaloop/values.yaml values if required:
    i. `mojaloop-ttk-simulators.enabled=true` - Enable Mojaloop Testing Toolkit based simulators required to execute the tests.
    ii. `ml-ttk-test-val-sdk-r2p.tests.enabled=true` - Enable SDK Request To Pay Helm test.
4. Some additional quality of life improvements have been made to the Helm Tests and CronJobs:
    i. Helm Tests now support `allowFailures` configuration, this allows the TTK CLI Test Runner to return failure exit-codes to the terminal:
        - By default this is `false` - which means that any consecutive Helm tests will not be executed by Helm.
        - If this is set to `true` - it will allow the next consecutive Helm test to be executed regardless of any failures.
    ii. The following configuration values have now been parameterized: `restartPolicy` , `backoffLimit` - see here.
    iii. The following configuration values have been added to CronJobs:
        a. `successfulJobsHistoryLimit` , and `failedJobsHistoryLimit` - see here.
        b. `suspend` - see here.
        c. `timeZone` - see here.
    iv. Moved `command arguments` to parameterized script value configuration to allow for override.
5. Testing-Toolkit improvements
    i. Now supports "No Callback" rules, which has allowed us to replace the `legacy-simulator` for `noresponsepayeefsp` test-cases with the Testing-Toolkit. Note that we still require the `legacy-simulator` for the simulated oracle.
    ii. Configurable Payer name in Mobile Simulator, which is useful for demo purposes.

Refer to full feature and bug fix list below for more info; and testing improvements listed separately.

3. Application versions

1. ml-api-adapter: v14.0.0
2. central-ledger: v17.0.3
3. account-lookup-service: 14.0.0 -> v14.1.0 (Compare)
4. quoting-service: v15.0.2
5. central-settlement: v15.0.0
6. bulk-api-adapter: v15.0.3
7. central-event-processor: v12.0.0 *(Refer to section 5. BREAKING CHANGES)*
8. email-notifier: v12.0.0 *(Refer to section 5. BREAKING CHANGES)*
9. als-oracle-pathfinder: v12.0.0
10. transaction-requests-service: v14.0.1 -> v14.1.0 (Compare)
11. finance-portal-ui: v10.4.3 *(DEPRECATED)*
12. finance-portal-backend-service: v15.0.2 *(DEPRECATED)*
13. settlement-management: v11.0.0 *(DEPRECATED)*
14. operator-settlement: v11.0.0 *(DEPRECATED)*
15. event-sidecar: v12.0.0
16. event-stream-processor: v12.0.0-snapshot.7
17. simulator: 12.0.0
18. mojaloop-simulator: v14.0.1
19. sdk-scheme-adapter: v22.0.1 -> v23.0.1 (Compare)
20. ml-testing-toolkit: v16.1.1
21. ml-testing-toolkit-ui: v15.3.0 -> v15.4.0 (Compare)
22. ml-testing-toolkit-client-lib: v1.2.0
23. auth-service: v14.0.0
24. als-consent-oracle: v0.2.0
25. thirdparty-api-svc: v13.0.2
26. thirdparty-sdk: v15.1.0

Component version change!

Comparison between upgraded **Component** versions in this release!

Click here for **Component** release notes!

7. Testing notes

1. This release has been validated against the following Dependency Test Matrix:

Dependency	Version
Kubernetes	v1.27.1
containerd	v1.6.19
Nginx Ingress Controller	helm-ingress-nginx-4.7.0 / ingress-controller-v1.8.0
Amazon Linux	v2
MySQL	bitnami/mysql:8.0.32-debian-11-r0
Kafka	bitnami/kafka:3.3.1-debian-11-r1
Redis	bitnami/redis:7.0.5-debian-11-r7
MongoDB	bitnami/mongodb:6.0.2-debian-11-r11
Testing Toolkit Test Cases	v15.1.0
example-mojaloop-backend	v15.0.0

Tested on **v1.26** & **v1.27**

Default **Container Runtime**[1] for **EKS** / **K8s v1.24+**

Tested using **EKS Managed Nodes** (more info on this later)

Backend dependency versions used to validate release.

Version of **TTK Test Cases** used for validating release with enhancements/fixes to match release.

No changes to Example Mojaloop Backend

References
[1] https://docs.aws.amazon.com/eks/latest/userguide/kubernetes-versions.html

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Mojaloop v15.1.0 Release (3 of 3)
New Helm Tests & CronJobs

Helm CronJobs:
ml-ttk-cronjob-cleanup

See Mojaloop Slack Org Channel: #announcements

Helm Test:
ml-ttk-test-val-sdk-r2p

SDK Request-to-Pay Test Collection now included as part of Helm Tests (See release notes on how to enabled)

Cleanup Scripts are now available via CronJob, which you will see run 15m by default after standard **Golden Path (GP) CronJob** execution on the **Mojaloop #announcements channel**.

Finance Portal v3 (BoF) v3.0.0, v3.0.1

PI-21 - Official Releases

Release Date: **2023-06-15 / 2023-06-23**
Test Cases: **https://github.com/mojaloop/security-rbac-tests ~ https://bit.ly/3NpFu9N**

Release v3.0.0

What's Changed

- Updated reporting events processor service to support special characters in passwords
- Updated reporting api service to support special characters in passwords
- Fixed CICD issue

Full Changelog: `v2.4.5...v3.0.0`

Breaking Changes:

- Values configuration is changed for `reporting events processor` chart
- Values configuration is changed for `reporting api service` chart

Datastore configurations (e.g. MySQL) are now **split** into **Username**, **Password**, **Host**, **Port**, etc to support **Secret injection on K8s**

Patch release to **fix BOF Report Tests**, see https://github.com/mojaloop/security-rbac-tests/releases/tag/v1.1.0

Release v3.0.1 `Latest`

What's Changed

- Fixed BOF report tests pull/86

Full Changelog: `v3.0.0...v3.0.1`

▼ **Assets** 2

Source code (zip)
Source code (tar.gz)

* **Note:** **https://github.com/mojaloop/charts** will be merged into **https://github.com/mojaloop/helm** in a future (TBC) release ~ see Roadmap

Migrating OSS Core QA/Dev environment to Managed Kubernetes

PI-21 - Rancher to EKS (AWS Elastic Kubernetes Services)

Reduced Maintenance & Costs

1) No Rancher Management Cluster required to manage multiple cluster (in most cases we only ran a single User Cluster, i.e. test-mojaloop-live); this is a fully-fledged Kubernetes Cluster (i.e. Management Nodes, and Worker Nodes) dedicated to run the Rancher Management Plane services
2) The User Clusters (i.e. test-mojaloop-live), a fully-fledged Kubernetes Cluster, only Worker Nodes, with Management Nodes completely managed by AWS
3) Reduced administration overhead to keep the underlying EC2 instances patched by AWS, since we are using "Managed" Worker Nodes.

Closer alignment to DA's (Design Authority) Testing Guidelines[1]

1) EKS closer alignment to the Kubernetes release[2] cadence
   i) EKS currently supports[3] K8s v1.27
   ii) Rancher currently supports[4] K8s v1.25

References
[1] https://github.com/mojaloop/design-authority-project/issues/93
[2] https://kubernetes.io/releases
[3] https://docs.aws.amazon.com/eks/latest/userguide/kubernetes-versions.html
[4] https://www.suse.com/suse-rancher/support-matrix/all-supported-versions
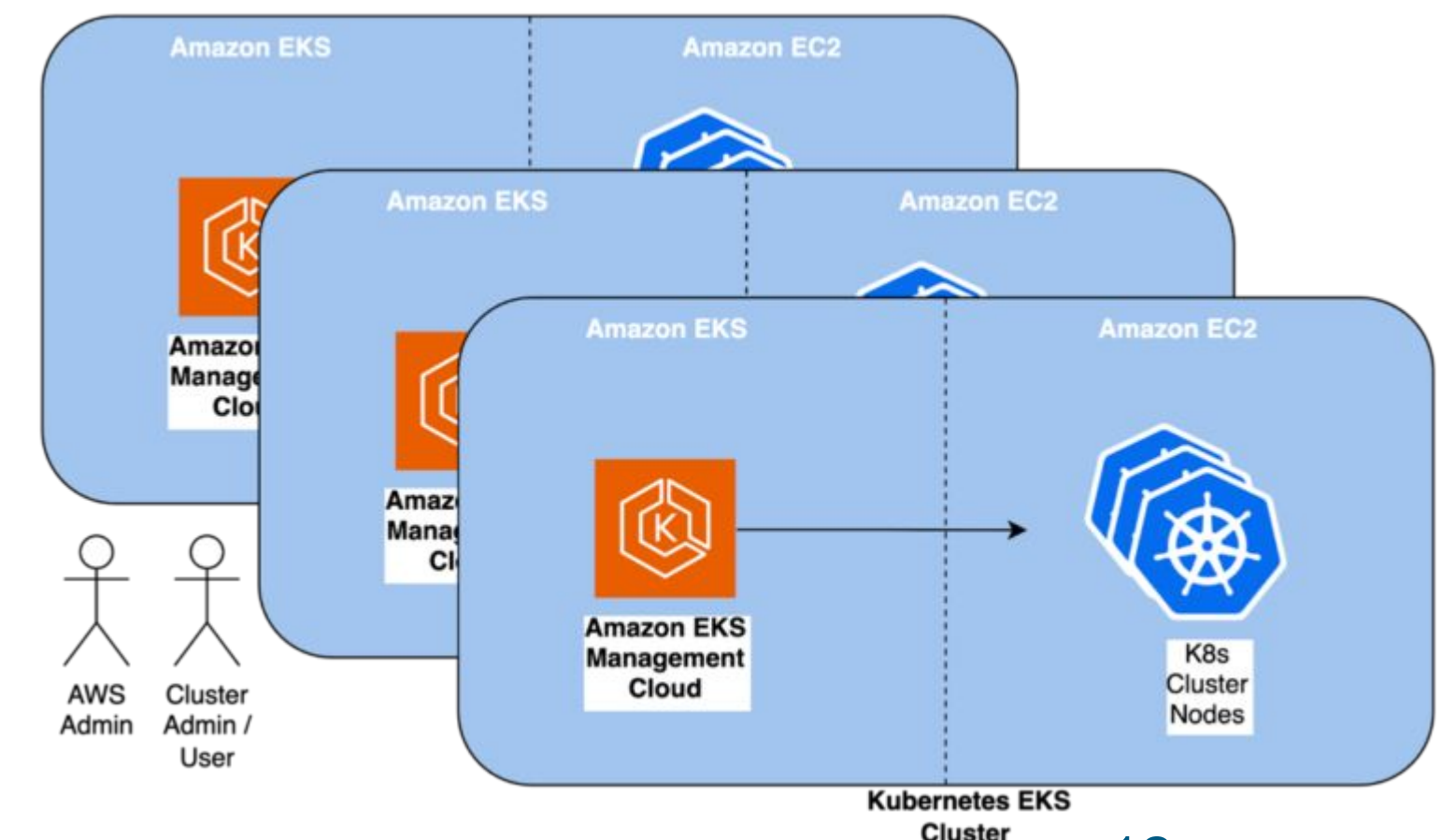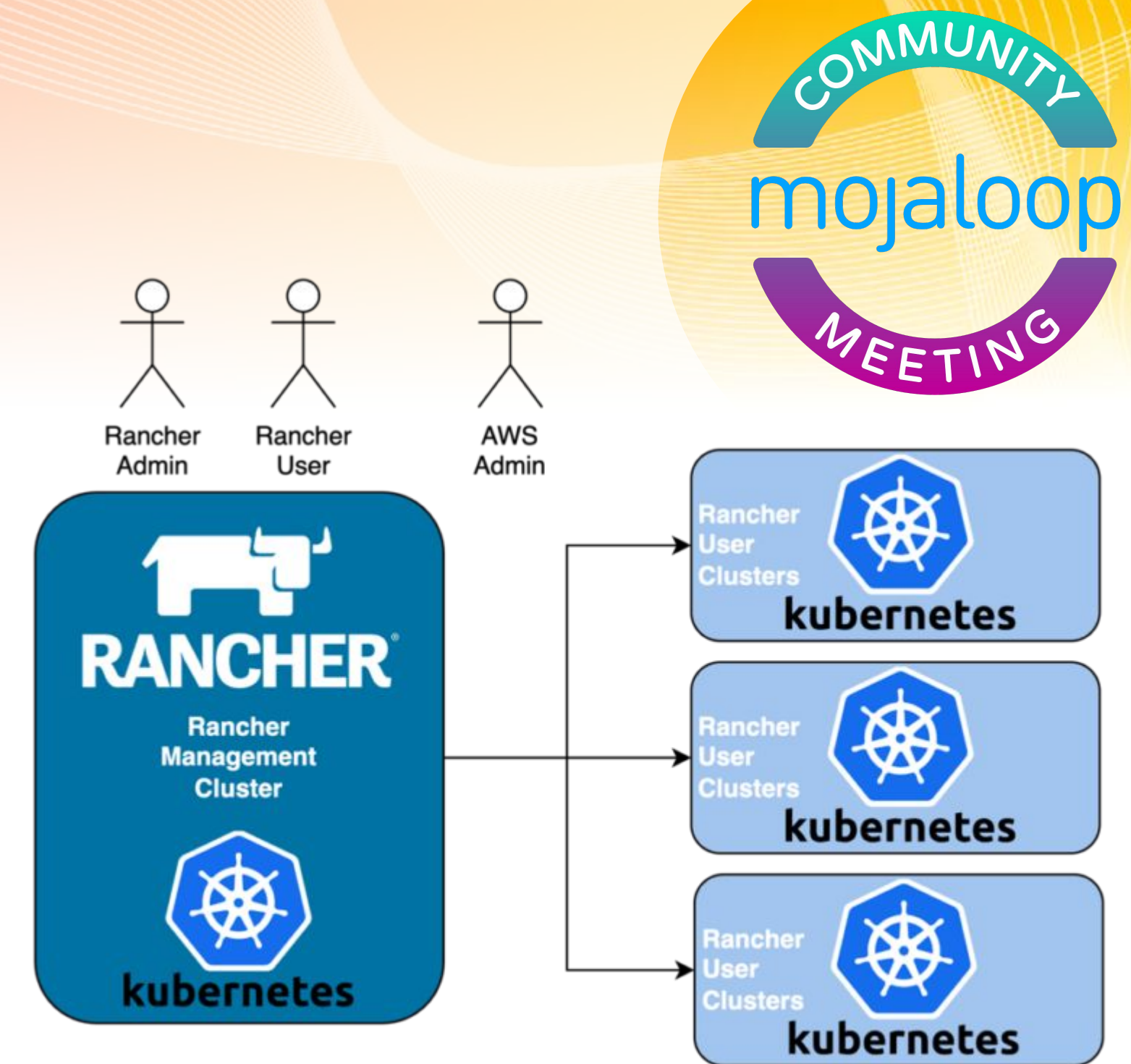
GitOps Approach
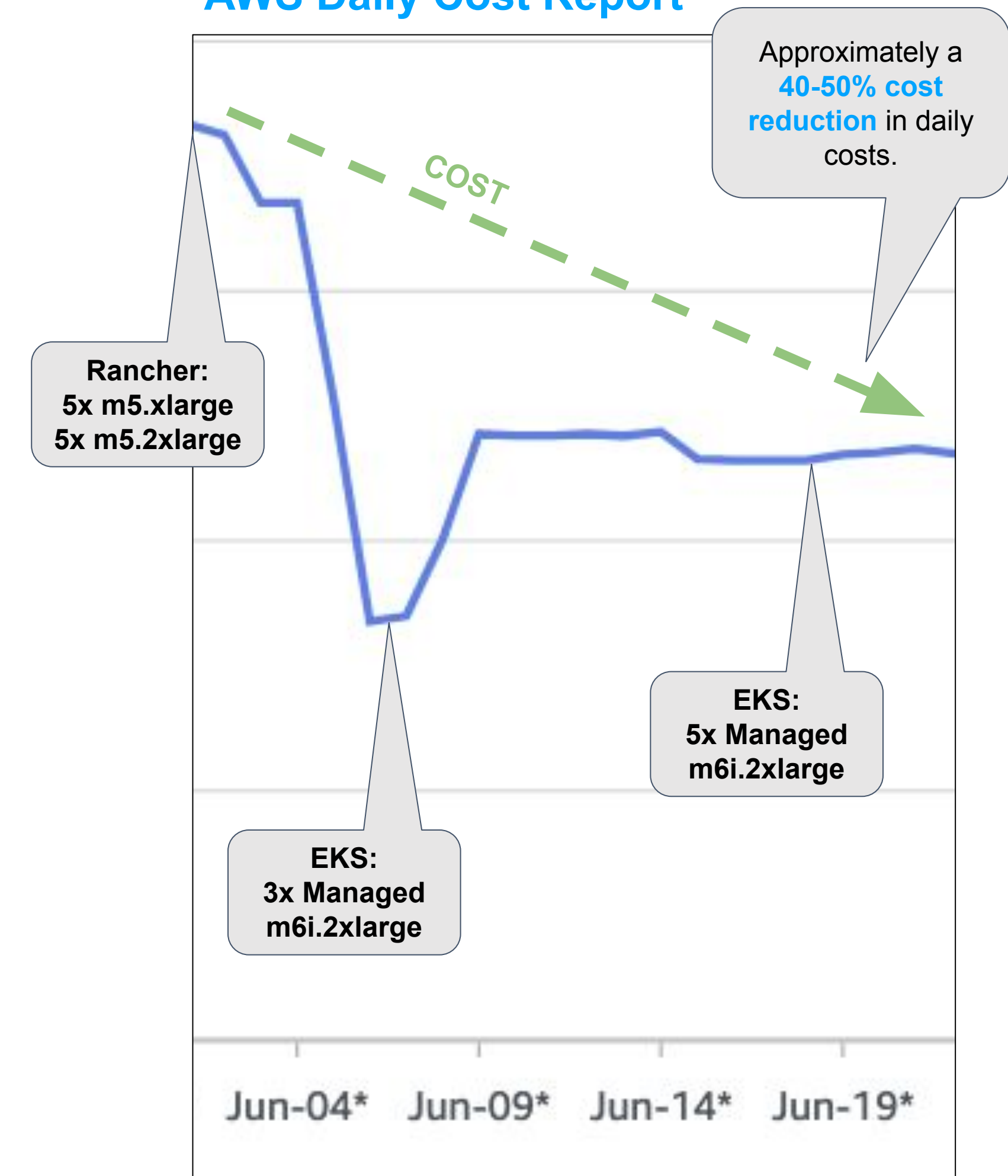
1) Use CI Workflows via Github Actions to manage (deploy, upgrade, delete, etc)
   i) External DNS – Automatically configure external DNS services on Cloud Providers (e.g. AWS, Google, etc)
   ii) Nginx Ingress Controller – Ingress-NGINX Controller for Kubernetes that supports Ingress routing for both on-prem and several Cloud Providers (e.g. AWS, Google, etc)
   iii) Certificate Manager – Automatically provision and manage TLS certificates in Kubernetes, both external and internal
   iv) QA environments - Moja1 & Moja2

Why?

1) Reduced Maintenance effort and costs.
2) Standard approach for standing up the OSS Core QA/Dev environment, ensuring that future Mojaloop releases are more closely aligned with the Mojaloop DA's guidelines for testing.
3) Mojaloop Core OSS team to focus on maintaining the Mojaloop Core Services instead of worrying about the underlying QA/Dev's infrastructure.

AWS Daily Cost Report

COST

Approximately a **40-50% cost reduction** in daily costs.

Rancher:
**5x m5.xlarge
5x m5.2xlarge**

EKS:
**5x Managed
m6i.2xlarge**

EKS:
**3x Managed
m6i.2xlarge**

Jun-04* Jun-09* Jun-14* Jun-19*

Migrating to EKS (3 of 3)

Future Enhancements

1) Add supporting Kubernetes Services for monitoring and log aggregation
2) Add support for GitOps Operators such as Flux CD or Argo CD
3) Develop an EKS Module for Mojaloop's Modularized IaC Framework that can be used by any IaC deployer that wishes to use AWS's managed Kubernetes service

For Further discussions

https://community.mojaloop.io/mdebarros/migrating-to-managed-eks-from-rancher-with-gitops-d8p ~ https://bit.ly/3prAIke

IaC release to support v15

PI-21 - What's Changed

IaC release to support ML v15.0.0 - IaC v4.0.1 - What's Changed

1. Support for Mojaloop v15 Release (v15.0.0)
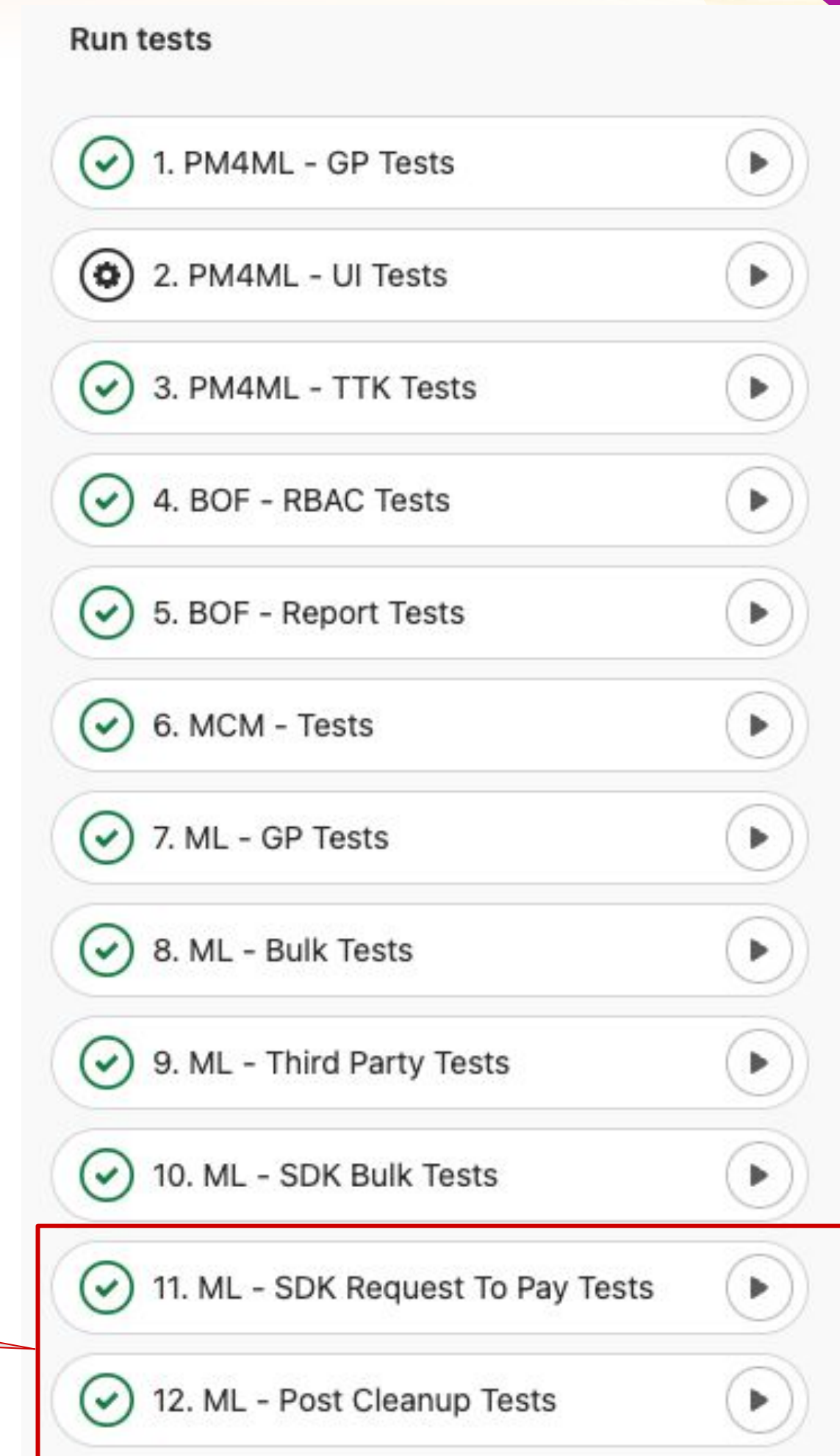
2. Add support for vault operator (https://github.com/redhat-cop/vault-config-operator) to allow for creation and storing of random secrets in vault as well as CR-generated K8S secrets from these same vault secrets.

   a. Custom Resource (CR) based method to auto generate credentials for the creation of stateful resources (mysql/etc)

   b. CR-based creation of K8S secrets in multiple namespaces that can then be referenced in different helm charts.

   c. The auto generation of the vault secrets also means that the secret will not be stored anywhere but in vault as opposed to the current situation where the random passwords are generated in terraform first which results in the pw being stored in terraform state file.

3. Enabled TTK report history by adding a new stateful service mongoDB

4. Refactored the test pipelines to use helm tests instead of TTK CLI directly

IaC release to support ML **v15.1.0 - IaC v4.1.0 - What's Changed**

1. Support for Mojaloop v15 Release (Both v15.1.0 & v15.0.0)

2. Fixed special characters in secrets for some Finance Portal (BOF) services

3. Fixed issues with existing test pipelines "BOF - Report Tests" and "Thirdparty Tests"

4. Added new test pipelines "Request To Pay" and "Post Cleanup"

Run tests

- 1. PM4ML - GP Tests
- 2. PM4ML - UI Tests
- 3. PM4ML - TTK Tests
- 4. BOF - RBAC Tests
- 5. BOF - Report Tests
- 6. MCM - Tests
- 7. ML - GP Tests
- 8. ML - Bulk Tests
- 9. ML - Third Party Tests
- 10. ML - SDK Bulk Tests
- 11. ML - SDK Request To Pay Tests
- 12. ML - Post Cleanup Tests

New Test Pipelines

IaC v4.1.0 Release
https://github.com/mojaloop/iac-aws-platform/releases/tag/v4.1.0 ~ https://bit.ly/44j3emP

COMMUNITY
mojaloop

Release v4.1.0 [Latest]

Compare

vijayg10 released this 3 hours ago · v4.1.0 · 41d786e

Release Notes

Date	Revision	Description
2023-06-27	0	Initial release

- For *BREAKING CHANGES*, please review the section #4 "Breaking Changes" below.
- For *KNOWN ISSUES*, please review the section #7 "Known Issues" below.

Summary

ML v15.1.0 support - This IaC release now supports Mojaloop v15.1.0 Release.

1. New Features

- mojaloop/#3381 [IaC] IaC release to include Mojaloop v15.1.0 Helm Release with SDK enhancements for R2P

New Features

2. Bug Fixes

- mojaloop/#3387 [BOF Tests] Fixed bof report test pipeline (iac-aws-platform/pull/90 & iac-aws-platform/pull/88)
- mojaloop/#3391 [IaC] Removed refreshperiod on random secrets (iac-aws-platform/pull/89)
- mojaloop/#3339 [IaC] Support for special characters in finance portal (iac-aws-platform/pull/87)

Bug Fixes

3. Application versions

- Mojaloop: 15.0.0 -> v15.1.0 (Compare)
- Finance Portal (BOF): v2.4.5 -> v3.0.1 (Compare)

Version Changes

4. Breaking changes

N/A

5. Deprecations

6. Testing notes

- This release has been validated against the following Dependency Test Matrix:

Dependency	Version	Notes
Mojaloop	v15.1.0 & v15.0.0	This IaC release is tested with moth Mojaloop versions v15.1.0 & v15.0.0.
Finance Portal (BOF)	v3.0.1	
Oathkeeper	0.19.6	
Keto	0.19.6	
Kratos	0.14.1	
Wso2 Mysql Repo	V1.0.0	
MCM	0.6.1	
Nginx	4.3.0	
Prometheus	11.11.1	
Grafana	5.0.9	
Kafka	0.21.2	
Longhorn	1.2.4	
Consul	0.35.0	
Vault	0.23.0	
Certmanager	1.6.1	
External Dns	6.7.2	
Loki Stack	2.8.3	
Alias Oracle	1.4.2	
Mfi Account Oracle	2.0.7	
Mfi P2p Oracle	2.0.7	
Haproxy	1.7.2	
Keycloak	6.0.0	
Oauth2 Proxy	5.0.6	
Vault Config Operator	0.8.13	

Tested with ML v15.1.0 & v15.0.0

7. Known Issues

- Test pipeline `PM4ML – UI Tests` is expected to be failed. This needs to be fixed.
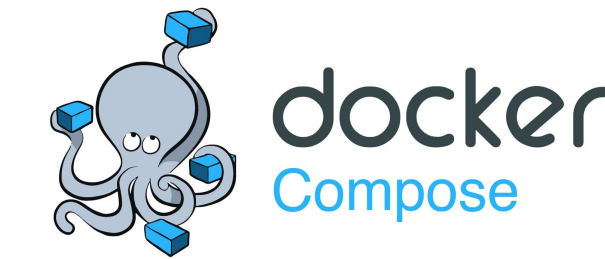
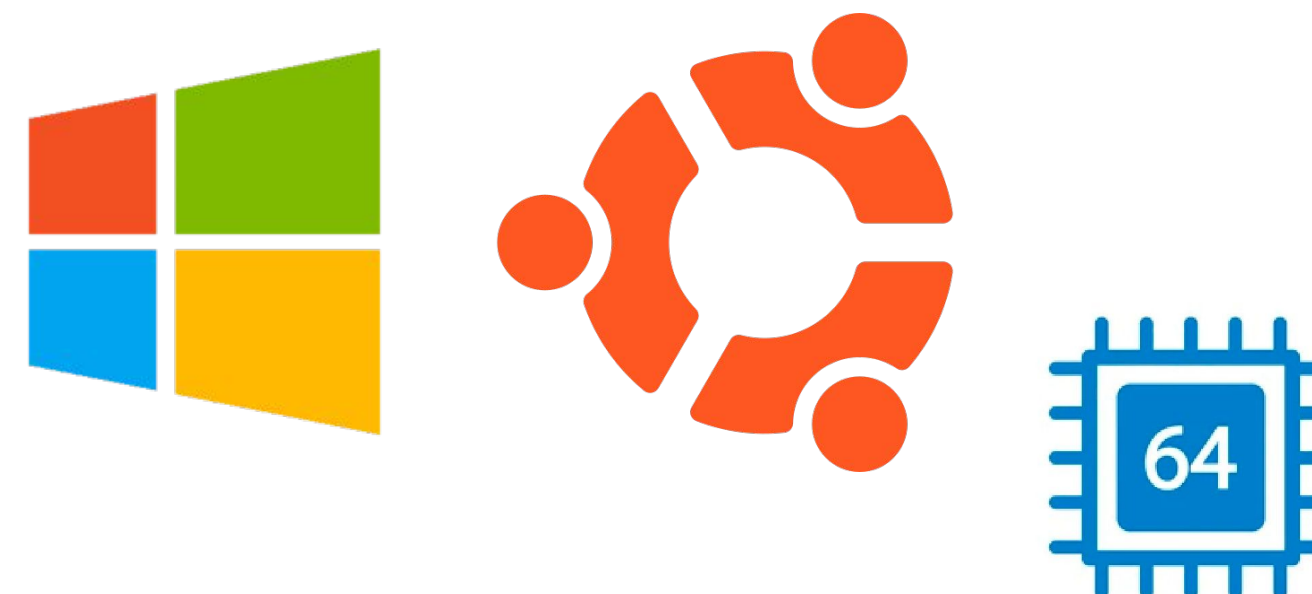*Known Issues*

Maintenance of core test harness

PI-21 - Updates

Maintenance of core test harness - Updates

https://github.com/mojaloop/ml-core-test-harness

1. Supported community members for deploying locally

2. Upgraded all the mojaloop core services to latest versions

3. Upgraded Kafka to latest version which uses KRAFT instead of zookeeper. (Reduced resource requirements)

4. Upgraded Mojaloop Testing Toolkit with latest UI

5. Fixed an issue with windows file system (related to line breaks)

6. Cleanup

7. Improved startup using kafka-provisioning to pre-create kafka topics

8. Tested in various operating systems and processor architectures (MacOS with Intel and Apple chips, Ubuntu x64 and Windows x64)

Testing enhancements

PI-21 - Updates

TTK Test-Cases v15.1.0 Release

Summary

1) **Fixes** & **Negative Test-cases** for FSPIOP **Quoting** API Sub-Scenarios

2) **Fixes** to **Thirdparty** test-cases to parameterise hard-coded currencies

3) **Stability / Performance** enhancements

   (1) Warm-up tests for **SDK** Bulk

   (2) Migrated from Legacy Simulator to **TTK** Backend for `noresponsepayee` Test-Cases

   (3) Minor **tweaks** to timing in **Settlements** test-cases to mitigate processing window state errors

4) **SDK** Request-To-Pay - new test collection

5) **TTK** Backend Configurations are now imported from the following Repo locations (version specific):

   (1) https://github.com/mojaloop/testing-toolkit-test-cases/tree/v15.1.0/rules

   (2) https://github.com/mojaloop/sdk-scheme-adapter/tree/v23.0.2/test/func/config

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mdebarros released this last week   v15.1.0   3fcd3c3

What's Changed

- feat(mojaloop/#3023): Remove the rules for bulk testing. by @sri-miriyala in #101
- test(mojaloop/#3027): add warm up bulk transfers to sdk bulk tests and bulk tests by @kleyow in #102
- test(mojaloop/#2926): add delay to settlements to mitigate processing window state error by @kleyow in #104
- fix(mojaloop/#2644): missing error-code for the transfer in the central-ledger db by @mdebarros in #105
- feat(mojaloop/#2846):reset-positions by @sri-miriyala in #103
- test(mojaloop/#3053): add test to assert subScenario mapping from outbound to quote request by @kleyow in #106
- Negative Test Scenarios for subsenario by @sri-miriyala in #107
- Feat/subscenario negative tests by @sri-miriyala in #108
- feat(mojaloop/#3078): get /transfers callback is wrong for transf by @mdebarros in #109
- Feat/#3062 settlement rules engine tests by @sri-miriyala in #110
- Revert "Feat/#3062 settlement rules engine tests" by @kleyow in #111
- Revert "Feat/subscenario negative tests" by @kleyow in #112
- Revert "Negative Test Scenarios for subscenario" by @kleyow in #113
- Revert "test(mojaloop/#3053): add test to assert subScenario mapping ... by @kleyow in #114
- feat(mojaloop/#3122): mojaloop helm release v15.0.0 by @mdebarros in #116
- feat(mojaloop/#3165): Remove settlement clean up from GP by @sri-miriyala in #117
- test(mojaloop/#2845): change noresponse fsp to ttk and version spec by @kleyow in #119
- fix(mojaloop/3329): fixed accept and content type header in quotes requests in dfsp collection by @vijayg10 in #120
- feat(mojaloop/3345): added requesttopay happy path and reorganised sdk test collections by @vijayg10 in #121
- feat(mojaloop/3347): added-request-to-pay-transfer-test by @vijayg10 in #123
- fix(mojaloop/#3390): testing-toolkit-test-cases v15.0.1 GP Collection fails by @mdebarros in #125
- fix(mojaloop/3388): parameterized hardcoded currency in thirdparty tests by @vijayg10 in #124

Full Changelog: v14.1.0...v15.1.0

Notes:

- This Release is used by Mojaloop v15.1.0.

Testing Toolkit Updates - Updates

Rule Builder

`No Callback` **Event Type** added to Rule Builder

Mobile Simulator

`Payer` **details** can now be set in the Mobile Simulator's configuration

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Request to Pay

PI-21 - Updates

Request to Pay (R2P)

NB! R2P is the base use case for all Payee Initiated transactions

Supports Merchant payments

Limited R2P tests in GP

1. Payee initiates → transfer request

Payer FSP

SDK Scheme Adapter

mojaloop core

SDK Scheme Adapter

Payee FSP

2. Authorises request
3. Performs transfer

TTK SDK Text collection

TTK

1. Documentation (https://bit.ly/44mpagH) describing SDK Scheme adapter support
2. New TTK SDK R2P Collection - much improved coverage
3. Addressed gaps in SDK backend API
4. R2P Authentication Type is now configurable
5. Home Transaction Ids are supported
6. R2P Error callbacks added
7. Support for manual acceptance of party information
8. Added IaC deployment tests for R2P

Not yet supported: One time pin (OTP) authentic type and retry mechanism

Request-to-Pay - gaps identified

Request to Pay support Roadmap

1. Story #3346 Enhance the Payer requestToPayTransfer API process for OTP authentication

2. Epic #3302 Functional Deployment tests that verify externally connected DFSPs
   Functionally test transfers as both a Payer DFSP and a Payee DFSP (via Request2Pay process)
   - Can run from a hub to functionally test all connected dfsp in production
   - Can be run from DFSP to functionally test against a hub

Bug fixes

PI-21 - Mojaloop v15.0.0, v15.1.0 and the pipeline

Bug fixes in PI-21

1. Fixes for Helm Clean-up scripts (bugs - issues/#3240, issues/#3351) on v15.0.0 Release

2. IaC support for default passwords generated with special characters (bugs - issues/#3338, issues/#3268, issues/#3339)

3. Daily cron job is failing #3274

4. [SDK-Scheme-Adapter] RTP on SDK's payer side requires AUTO_ACCEPT_PARTY=true to complete #3321

5. [API-Snippets] missing transactionRequestState on SDK-Backend API def for POST /transactionRequest response #3320

6. Broken links in third-party API documentation #3334

Releases & Roadmap

Mojaloop v15.0.0, v15.1.0 and the pipeline

ML Releases: PI-21 update for reference

v14.1.0 (PI-19)	v14.1.1 (PI-20)	v15.0.0 (PI-20/PI-21)	v15.1.0 (PI-21)

v14.1.0 (PI-19)
1. Support for k8s 1.24+
2. Bulk Enhancements
3. *Testing k8s v1.24

v14.1.1 (PI-20)
1. Mojaloop Toolkit enhancements: Reports, Rules, UI enhancements

v15.0.0 (PI-20/PI-21)
1. Separations of external backend dependencies from Mojaloop Helm charts
2. Utilise externalised secrets for password management (#3082)
3. Bulk SDK functionality support out-of-the box
4. IaC v4.0.x with support for Mojaloop v15.0.0 & passwords with Special Characters managed by HashiCorp-Vault
5. Finance Portal v3 (BoF v3.0.0) fixes for passwords with Special Characters

v15.1.0 (PI-21)
1. Test against upgraded QA/Dev with K8s v1.26/1.27
2. Refactored QA/Dev env ease of maintenance with EKS
3. Enhanced SDK support for Request-to-Pay (R2P)
4. Follow-up bug-fixes
5. IaC v4.1.0 with support for Mojaloop v15.1.0

Release Roadmap: MLF Product, Community and work-stream

v15.1.0 (PI-21)

1. Test against upgraded QA/Dev with K8s v1.26/1.27
2. Refactored QA/Dev env ease of maintenance with EKS
3. Follow-up bug-fixes
4. Enhanced SDK support for Request-to-Pay (R2P)
5. IaC v4.1.0 with support for Mojaloop v15.1.0

vX.Y.Z (PI-22)

1. Patch notification support for failures
2. General maintenance, Node upgrade (LTS available at the time)
3. Performance setup, profiling and document bottlenecks (perf workstream)
4. Automated, CI tests on ML releases

Future

1. Settlements improvements
2. PISP Bulk API support (#109)
3. Enhance tracing components to use latest open-tracing standards
4. vNext support
5. FX support in Mojaloop
6. Automated CI testing on Helm PRs & Releases
7. Upgrade QA/Dev to latest K8s version for testing
8. Align QA/Dev EKS with IaC
9. Migrate Chart (i.e. BoF) to Helm repo, and clearly rename Finance Portal components part of BoF.

Thank you!

Questions?

Breakout group #3 - pm4ml

Goals for the PI:

1. Documentation of repositories and following Mojaloop templates
   a. Q: Where does this reside
   b. Needs documentation of repositories as there are a good number of repos
2. Present a report to Product council regarding gaps in payment manager to standardize it

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Roadmap, items to be addressed pending guidance from prod-council and availability:
1. Technical debt
   a. Test coverage
   b. License checks (CI pipeline)
2. Develop a test-harness for testing "Full Security Enabled"
   a. Core connectors
   b. Security Features
      i. MCM Connectivity
      ii. Onboarding
   c. P2P transfer
3. More deployment methods to connect to a switch
   a. Generic connectivity to a switch (without AWS)
   b. Local deployment