

# Mojaloop a 1<sup>st</sup> Class Citizen on Microsoft Azure

ONLINE PI-18 OSS Community Meeting – Technical  
Session

Microsoft and Mojaloop Status a Non-Official  
Workstream Report



Prepared by:  
Greg McCormick



# Agenda

- Mojaloop on Azure, why is it important
- Adjusted Scope
- Scope Reminder
- Work Completed / Work In Progress

# Why is this important?



Here's just some of what you can do with Azure



## Test and deploy enterprise apps

Experience the power of cloud computing with Azure Virtual Machines, Managed Disks, and SQL databases while providing high availability and scalable performance with load-balanced Virtual Machine Scale Sets.



## Create customised mobile experiences

Build based on your customers' interests and behaviours using Azure App Service and Azure Cosmos DB, Xamarin and Traffic Manager.



## Gain insights from your data

Analyse petabyte-scale data and make better decisions faster using cloud computing services like Azure Machine Learning, Azure Databricks and HDInsight.

1. We will reach a lot more people.
2. A lot more options.
3. We get to do a lot of validation and artifacts, paid for by Microsoft.

# Ideas can only come from access before they lead to Innovation



Start for free

## Build your next great idea in the cloud with an Azure free account

Get started with 12 months of free cloud computing services

Start free

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# Mojaloop, a First-Class Citizen on Azure



- A project to make Mojaloop a First-Class Citizen on:
  - Microsoft Azure
  - Microsoft Marketplace
  - Microsoft Azure Stack
    - A hybrid cloud solution that allows cloud management but uses local resources and therefore meets a countries data residency rules
- The goal is to optimize performance &
- Ease of installation and management
  - ARM Templates for multiple purposes to be created
  - Leverage Azure Management Portal
    - Deployment
    - Active management
    - Alerting and reporting



# Adjustment to Scope



- Finite Time and Budget
- Various delays
  - Availability of resources in staffing and subject matter experts
  - Complicated and involved
- Although the Event Hubs poses a huge potential for savings, we have moved it to the end of the project and will make as much progress as we can on it.
- Azure stack was deemed to be more beneficial to the community as it allows for Azure cloud management while providing in country data sources, eliminating any data residency issues.

# Scope



- Pure OSS Baseline Setup **Complete** Kubernetes Service (AKS)
- Stateful components
  - To reduce admin overhead for a switch **Complete** for all stateful components will make use of Azure managed services removed from the AKS cluster. **Adjusted Scope** Services will be moved to make use of either HDInsight or Event Hubs with the later being a far more cost-effective method.
  - Percona Mysql being replaced **Complete** by Azure Databases for Mysql
- Scripting Phase 1
  - In the first phase of scripting the **Complete** in use **For Cloud** need to be commissioned and decommissioned to fit within project's azure spend budget

## Scope (cont'd)



- API Management
  - Implement the Azure Api Management as an ingress controller of AKS. This will be used as an alternative to NGINX. **Complete**
- Scripting Phase 2
  - Adding in scripting to automate the deployment of components at with **Complete** **For Cloud**
- DFSP Authentication
  - Creation of a DFSP ID and authentication policy to authorize participants **Complete**
- Testing Toolkit
  - Explore if we need any changes or alternatives due to platform and changes

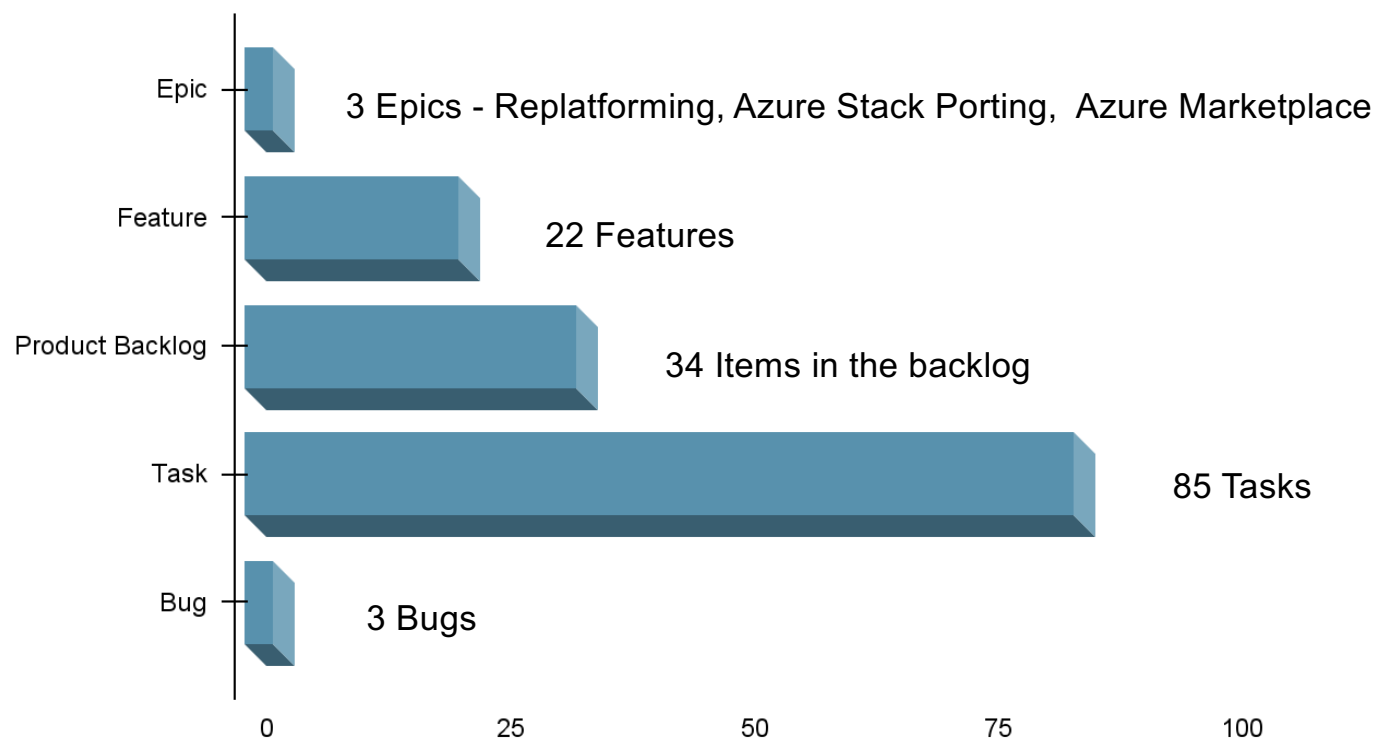


## Scope (cont'd)



- Scripting Phase 3
  - The finalization of any IAC work that was not covered in the prior phases.
- Documentation
  - This is for any documentation required by the Azure marketplace or stack teams.
  - The creation of any getting started style Azure guides will also be covered here.
- Stretch Goals (nice to haves)
  - Application Insights

# Project Break Down



# Feature Areas



- DBaaS Integration
- Scope confirmation
- Architecture / Design
- AKS Deployment
- Baseline Azure Infra
- API Manager
- Messaging
- Ops Tooling
- Baseline Deployment of OSS
- Testing / Validation Automation
- Marketplace Requirements and Design
- Marketplace Install Payloads
- Marketplace Deployment Scripts
- Stack Architecture / Design
- Stack Dev/Test Deployment [Hub then HCI]
- Optimization [Prod]
- IaaS / AKS MySQL (Azure stack HCI) determination
- IaC - scripting
- Event Hubs Re-visit?

# Working with the community



- The work is well underway, and we had expected to work more with the community than we have at the point. I think some reprioritization has gotten in the way of that. But we would welcome involvement where it makes sense. Tom we should touch base, and I can connect anyone else that wants to be involved.
  - The team needs to be in sync with the community and
  - The community needs to be in sync with this effort.
- The has worked closely with the dev ops workstreams as that is where most of the changes will be confined to.
- Again any “shims” or adjustments to code need to be made it will be discussed with the TGB and DA.
- The intention is not to do anything that will create a fork.

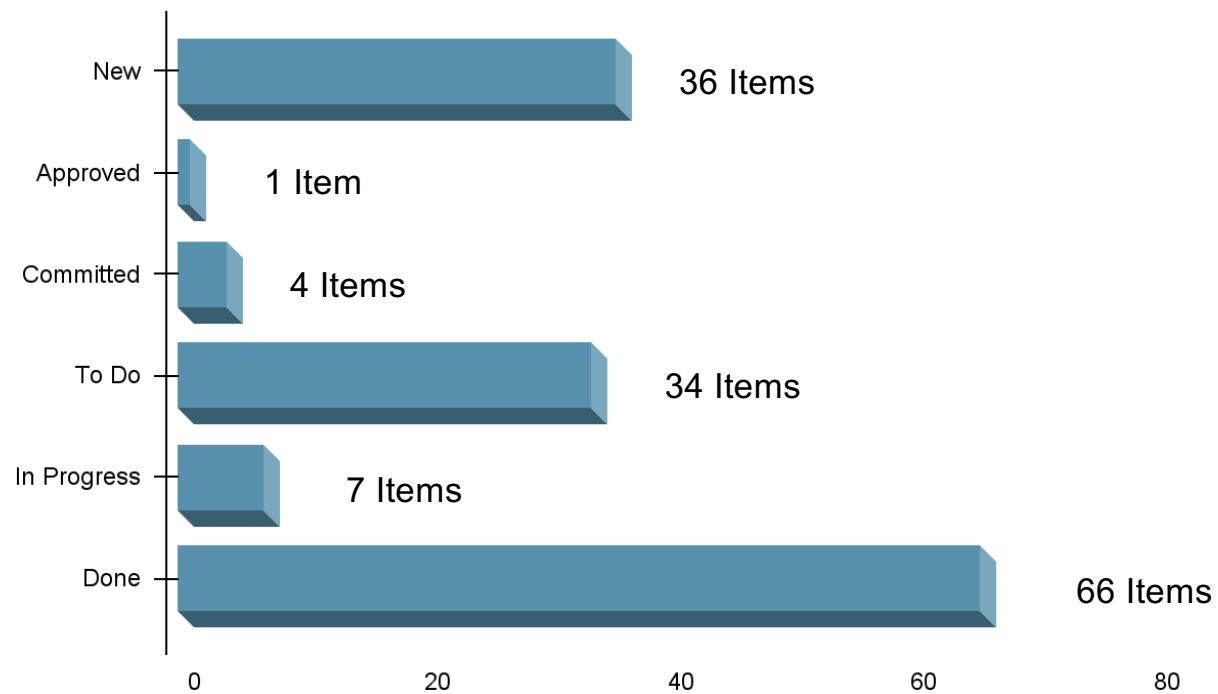
# Very High Level WBS



Project Slack from 22 May Through June



# Current Work Items and Backlog

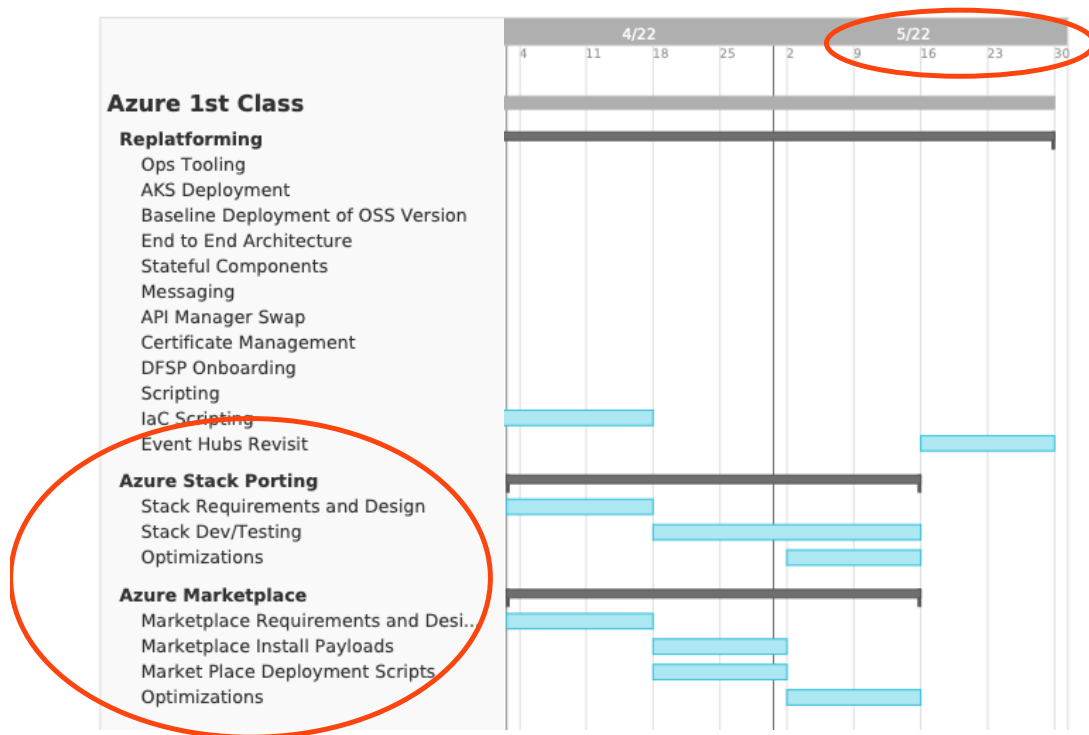


## Detail of some items that have been completed.

Team kick-off / huddle	Cert authentication of client requests	Azure Stack Team
Logical components	Repo Design & Setup	Build containers locally
Deploy test AKS cluster	Oss DevOps team meeting regarding container changes	Push to Sybrin devops on docker hub (public)
Install AKS	Create local dev env. for functions	Test connection of all containers after DB fixed
AKS Deployment	Create local function - Validate DFSPID from dB	Bulk containers found to be "disabled" = enabled them
[ SPIKE] test deployment of latest helm chart	Prepare	[ SPIKE] events hubs
Install of the default OSS as a baseline	Fulfill	Pass Testing Toolkit
Documented in-scope and out-of-scope items	Position	submit PR's
Setup testing mySQL	Transfer GET	Add Mojaloop services to API manager
Modify helm charts to point to Mysql PAAS	Admin	Validate via postman
Define params needing changing	Timeout	API Manager
Test deployed connection with replaced connection info	Notification Handlers	API Manager
DNS service discovery remapping	Mojaloop API Adapter	Event Hub
fix TTK test URL reference	Admin Service	Review core team technical debt's affect on this project
MySQL as a service deployment	Fork above list of repo's	KeyStore
Read the Docs	Create authentication policy using DFSP ID	Meeting with Johan
Deploy test Event Hub	Make changes to Docker Files	Azure Function
Deploy API Manager	Prepare branch and repo's for PR's	ARM templating of current components



# What's Left – Through June



- Project runs through June
- Current tasks complete by mid May
- Revisit Event Hubs from mid May
- Utilize mid May through June for slack and lingering items
- June for refining documentation
- June for shifting artifacts to Microsoft repositories
- June for shifting artifacts to OSS repositories



**Thank You**