

SHIP-HATS 2.0 Announcement Briefing

GDS Central | 19 August 2022



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CODEX/GDS Central



Welcome

AGENDA

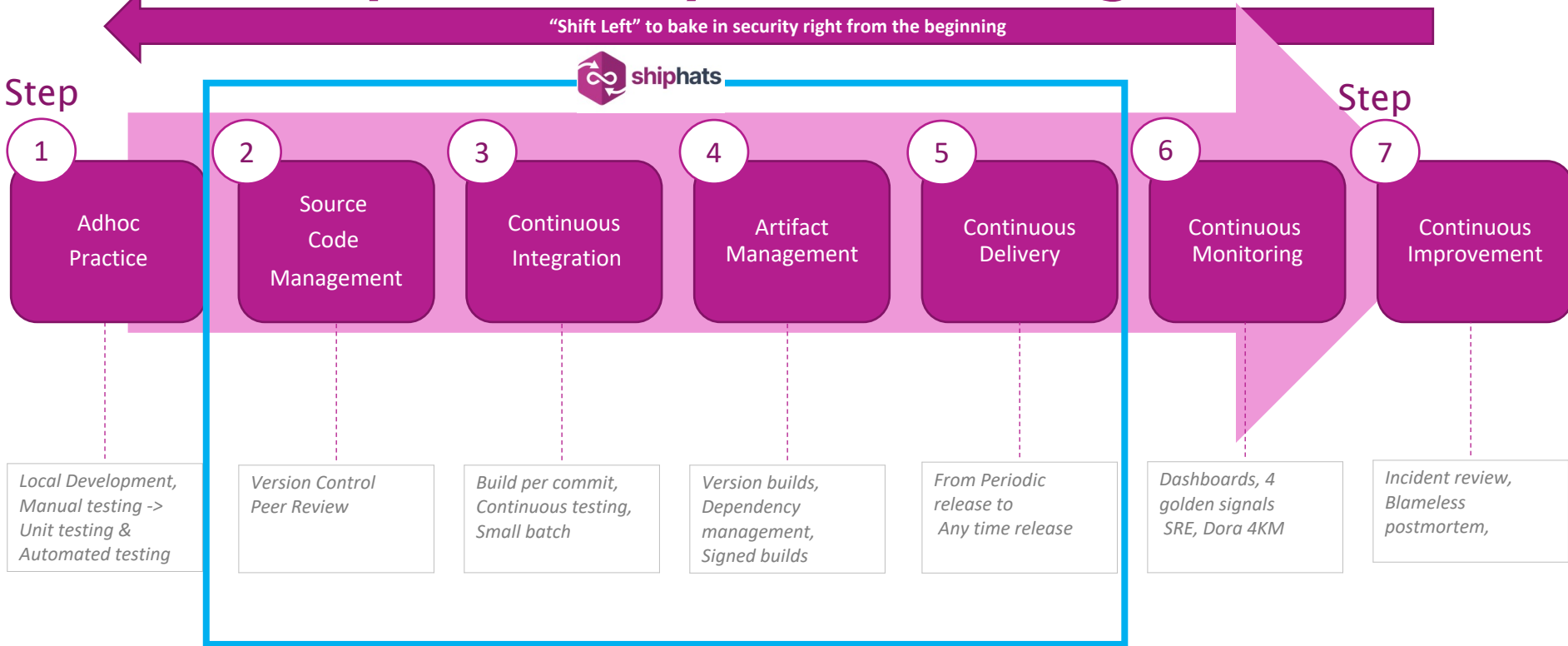
1. Vision
2. SHIP-HATS 2.0 – Strategy & Updates
3. Technical Architecture
4. Migration Approach
5. Next Steps
6. Q&A

Kevin KB Ng
Director, GDS Central



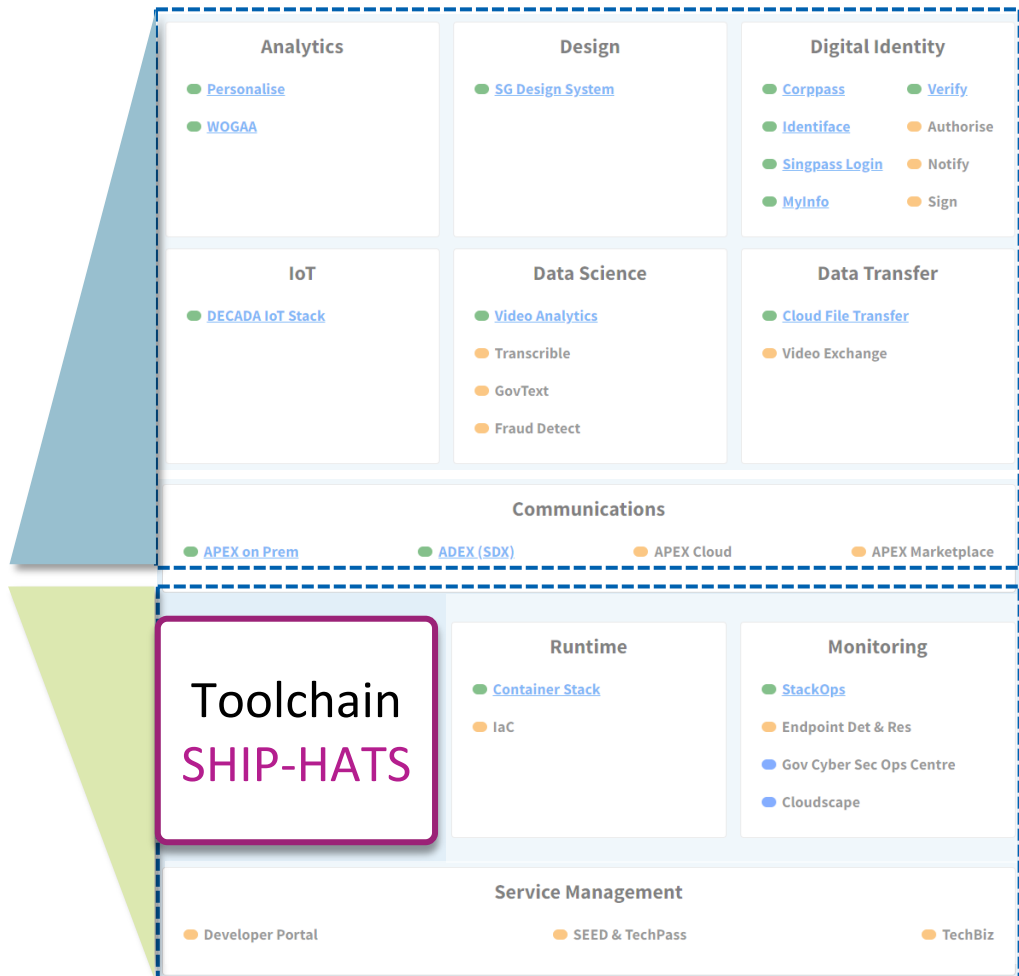
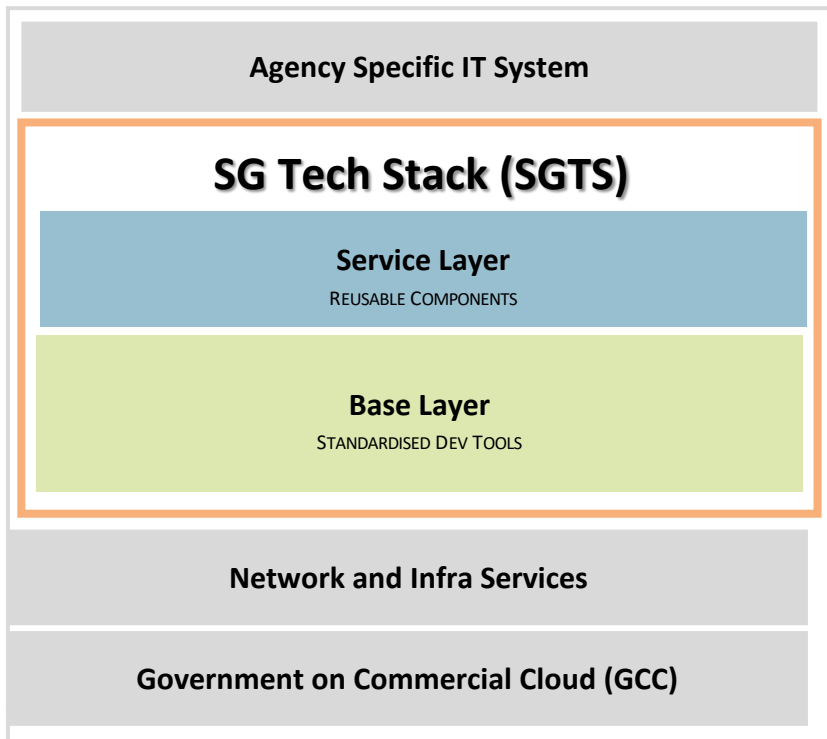
Vision

DevSecOps Maturity Model for Agencies

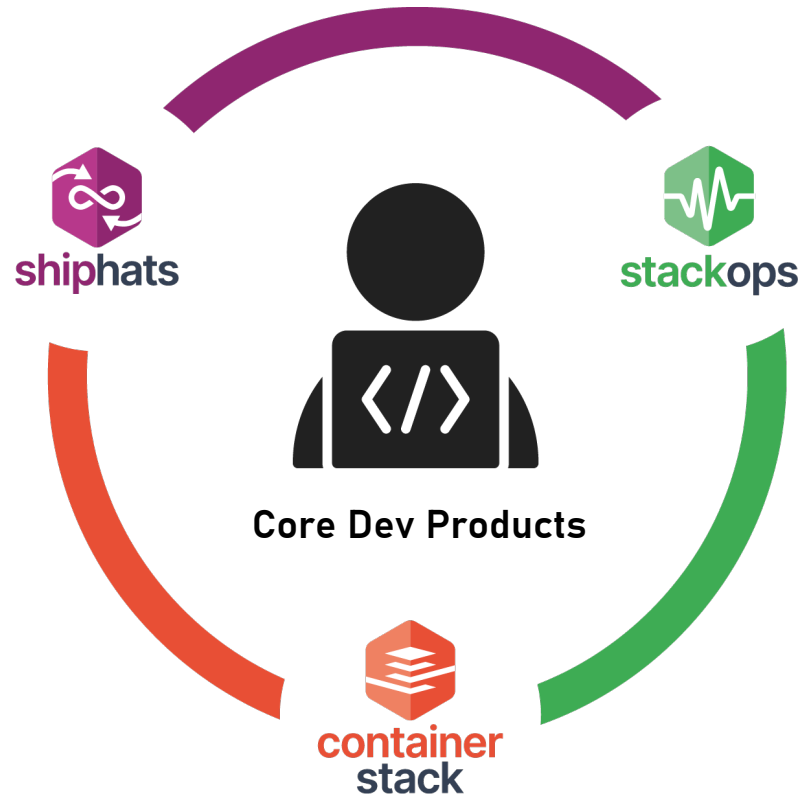


Stack – Government-in-a-Box

www.developer.tech.gov.sg



SGTS Base Layer Core Dev Products



Ancillary Products

 **Singapore Government Developer Portal**

 **techbiz**

 **techpass**

 **SEED**

Why this is change essential

- **Harmonized CI/CD process** – the way forward
- **Closely aligned DevSecOps Policy & SHIP-HATS** – with a thoughtful move towards mandate in two years
- **Partner with Agencies and Industry** on the adoption journey of SHIP-HATS 2.0

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SHIP-HATS 2.0 – Strategy & Updates

- Snapshot
- Goals, Evaluation Criteria & Results
- GitLab Spotlight
- Tools Summary
- Subscription Related
- Training & Support
- Timelines

SHIP-HATS 2.0 - Snapshot

Approach: Move to an integrated and modernized SaaS CI/CD Platform while retaining some familiar tools like Jira

GitLab is the integrated SaaS CI/CD Platform for SHIP-HATS 2.0!

Tools Change Summary			
Category	SHIP-HATS 1.0: Self-hosted	SHIP-HATS 2.0: SaaS	Key Announcement
Integrated CI/CD	Bitbucket, Bamboo, Digital.ai	GitLab	✓ Ready for pilots now
QA & Testing*	Fortify	Fortify-on-Demand	✓ GA for all from November
Planning & Documentation	Jira Confluence	Jira Cloud Confluence Cloud	<ul style="list-style-type: none">• Delayed due Roadmap delay from Atlassian• Jira and Confluence Cloud GA from Q4 FY22• Self-hosted Jira and Confluence will be available

*see Tools Summary for other tools

SHIP-HATS 2.0 Goals



1. Faster time to market

- One DevOps Platform
- End-to-End Source Code Management & CICD



2. Greater Transparency

- Pre-Defined Industry DevOps Metrics and Dashboards, incl DORA
- Value Stream Measurement Capabilities



3. Built-In Security

- Compliance Pipelines
- Integrated Security Testing

Evaluation Criteria & Results



1. SaaS with in-country hosting in Singapore



2. Lesser migration overhead for Agencies



3. Product roadmap at par with industry standards



- ✓ Local partner managed dedicated SaaS in Singapore
- ✓ Timely availability of the platform
- ✓ Progressive product roadmap
- ✓ More CI/CD features integrated in the platform

GitLab Spotlight



IMPROVE EFFICIENCIES and CONTROL

Self-managed reliability

Release Controls

Enterprise Agile Planning

Advanced CI/CD

Faster code reviews

Priority Support

Advanced DevOps

PREMIUM

IMPROVE SECURITY, COMPLIANCE and PLANNING

Value Stream Management

Portfolio Management

Compliance

Security risk mitigation

Advanced security testing

Self-managed reliability

Release Controls

Enterprise Agile Planning

Advanced CI/CD

Faster code reviews

Priority Support

Secure DevOps

ULTIMATE

Community Support

Basic DevOps

FREE



Value Stream Management

Measure and manage the business value of your DevSecOps lifecycle

Benchmark
DevOps maturity

- Benchmark your DevOps maturity within your team or across comparable companies/industries with **DORA4 metrics**. Monitor the [Lead time for change](#) and [Deployment Frequency](#) to measure your DevOps process efficiency.

Identify & fix
inefficiencies

- [Detailed insights](#) showcasing your triage hygiene, issues / bugs created, time to merge and many more enable you to identify and fix inefficiencies in your development process with ease.

Measure time to
value

- [Group level dashboard](#) to measure time to go from planning to deployment. GitLab can provide this data because it has all the tools built-in: from the idea, to the CI, to code review, to deploy to production.



Compliance



Ensure your code, deployments, and environments comply with changing regulations and emerging risks

Policy Management

- Granular roles & permissions
- Compliance settings
- Credentials inventory & management
- Protected branches

Audit Management

- Compliance dashboard - compliance insights in a consolidated view
- Audit events - analyze & track every change
- Predefined & custom compliance frameworks

Quality & requirements management

- Test planning, execution and tracking
- Requirements definition, traceability and dependencies

License compliance

- Ensure licenses of your dependencies are compatible with your application



Advanced Security Testing

Protect the integrity of your software supply chain with built in security testing



SAST

Static Application Security Testing scans the application source code and binaries to check for weaknesses and vulnerabilities.

DAST

Dynamic Application Security Testing analyzes your running web application for known runtime vulnerabilities leveraging the Review App.

Dependency Scanning

Analyze external dependencies (e.g. libraries like Ruby gems) for known vulnerabilities on each code commit with GitLab CI/CD.

Vulnerability Management

View, triage, trend, track, and resolve vulnerabilities detected in applications giving you full visibility to your organization's risk.

Secret Detection

Check for credentials and secrets in code commits and project history for allowing you to proactively resolve prior improper disclosure.

Container Scanning

Analyze your containers for known security vulnerabilities in the application environment leveraging public vulnerability databases.

License Compliance

Upon commit, project dependencies are searched for approved and blacklisted licenses defined by custom policies per project.

Fuzz Testing

Input unexpected and malformed data into your application to measure response and stability with the goal of finding unknown vulnerabilities.

All security tests embedded in the CI/CD pipeline & results shown in the MR

Tools Summary



	SHIP-HATS 1.0.	SHIP-HATS 2.0*	
STAGE		GitLab Native	Alternative Tool
ACCESS	OpenVPN	TechPass & SEED Note!	
PLANNING	Jira/Confluence On-Prem	GitLab Issues/Wiki	Jira Cloud, Confluence Cloud ^{new!}
BUILD	Atlassian BitBucket	GitLab CI/CD	NA
	Nexus Repo	GitLab Package Registry	Nexus Repo
BUILD TESTING	Fortify SCA	GitLab SAST	Fortify-on-Demand ^{new!}
OTHER TESTS	SonarQube Developer Edition (OnPrem)	GitLab Code Quality Scanning Tool	SonarQube Developer Edition (On-Prem)
	Fortify Webinspect Enterprise	GitLab DAST	Fortify-on-demand ^{new!}
	Prisma Cloud	GitLab Container Scanning	NA
DEPLOY & RELEASE	Atlassian Bamboo	GitLab CI/CD	NA

Subscription Related

Pricing

Under review!

- Aiming for a comparable pricing **SHIP-HATS 1.0**.
- More details by end of Q2 FY22.

You can send your pricing questions and we will answer them once Pricing Review is complete.

Process needs

- Existing subscriber will need to sign new Subscription Agreement

Learning Resources & Training



Training will be rolled out on Developer Portal in Phases from September

Audience: Public officer & Vendors. **Personas:** Priority 1. Developers Priority 2. PM and BA

	1. Hands on Workshops	2. Webinars & Briefings	3. Self-paced: Tech docs & Videos
SIGN UP	By invitation* <i>*based on onboarding and migration plans</i>	Free access for all* <i>*Except any sensitive content like pricing</i>	Free access for all
SAMPLE CONTENT	<ul style="list-style-type: none">• Introduce features• Pipeline templates available	<ul style="list-style-type: none">• Thematic content,• Best practices	<ul style="list-style-type: none">• SHIP-HATS tech documentation e.g. Architecture overview, user permissions etc.• GitLab.com for product specific content

Leverage trainings in the market to understand the base concepts related to DevSecOps and CI/CD to maximise the learnings from SHIP-HATS trainings.

Migration Support

Planning

- Briefings & Monthly Comms
- Reference Pricing from industry
- Migration Checklist for Effort Estimation

Enablement

- Learning Resources & Training
- Technical Documentation

Consultation

- Email & L1 Support
- Migrations Consultant Team

Build & Grow

- Innersourcing and Collaboration with WOG

Key Dates & Timelines



Timelines for New Users

Types of User	Onboarding Start Date	SHIP-HATS 2.0 Tools Available
All New Users	November 2022	<ul style="list-style-type: none"> ✓ GitLab ✓ Fortify-on-Demand ✓ Jira & Confluence (Self hosted)*

*upgrade to Jira Cloud in Q4FY22

Timelines for Existing Users

Migration Window		
Type of users	Start Date	End Date
Users <u>without</u> Fortify SCA or Webinspect	November 2022	1 year from the date of GA
Users <u>with</u> Fortify SCA or Webinspect	November 2022	31 July 2023

Key Tool Decommission Dates

Tools	Decommission Date	Replacement
OpenVPN	31 December 2022	TechPass/Seed
Fortify Webinspect (OnPrem)	31 July 2023	GitLab SAST/DAST or Fortify On Demand
Fortify SCA (OnPrem)	31 July 2023	
Digital.ai	31 May 2023	GitLab

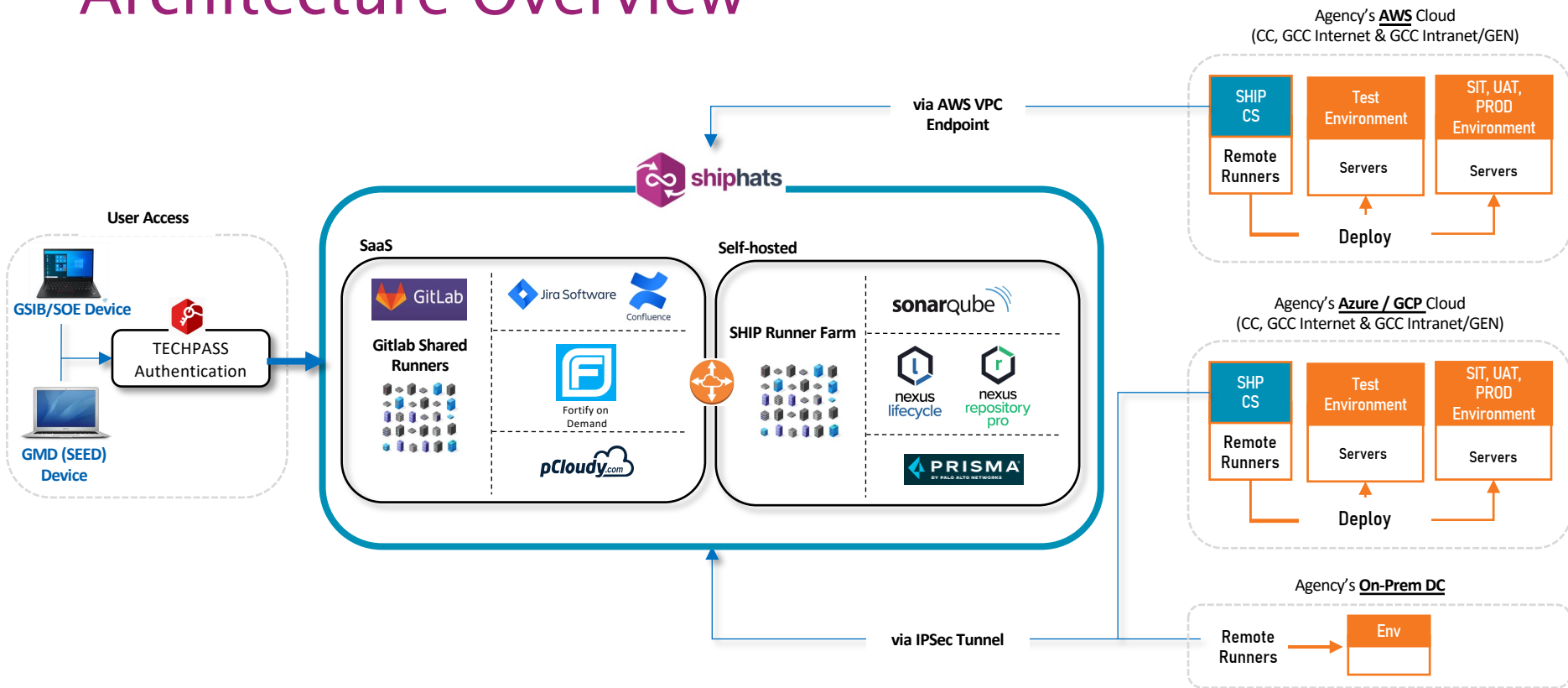
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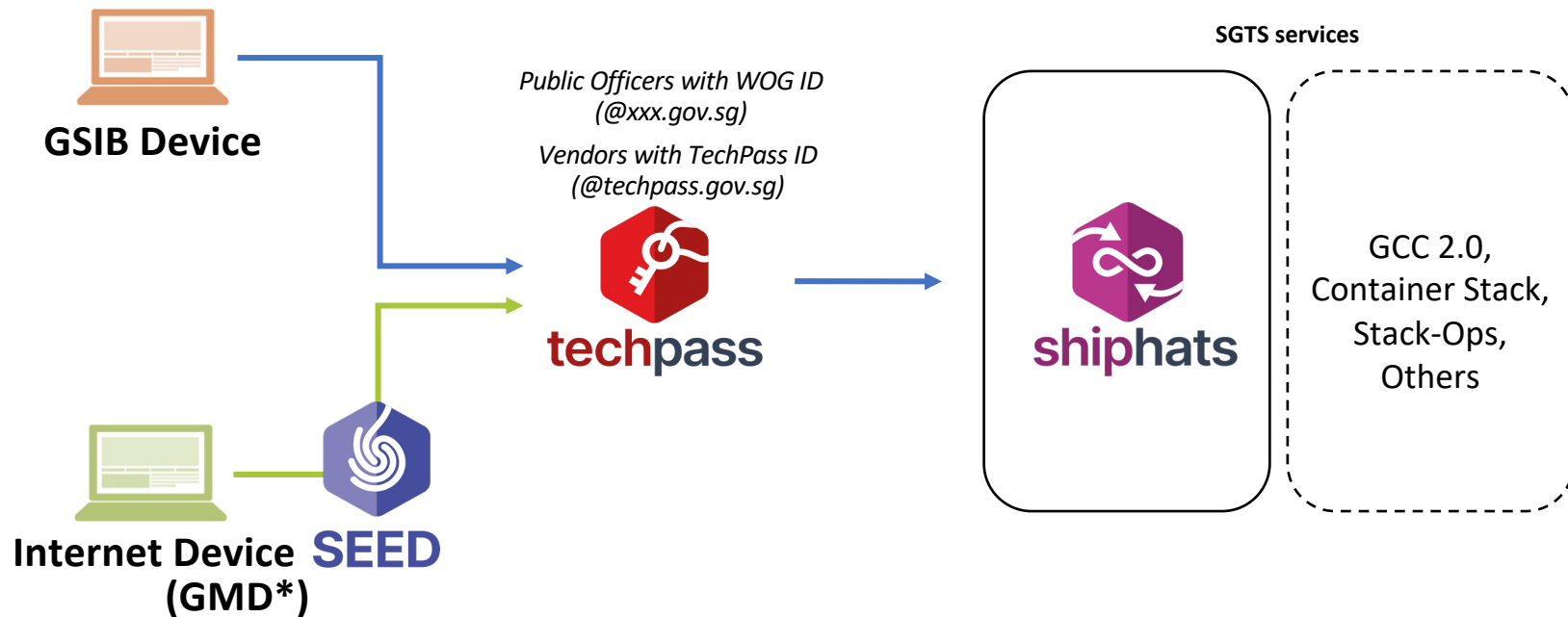
Technical Architecture

- Architecture Overview
- Feature Availability
- User Accessibility
- Gitlab Runners
- Grouping Strategy
- E2E Pipeline Templates & Compliance Pipeline

Architecture Overview



User Accessibility



*Any internet device with SEED enabled is a qualified GMD (Government Managed Device)

SEED & TechPass



- Mobile Device Management (MDM) platform ensuring internet devices are compliant to required policies.
- Installing SEED allows an internet device to become a Government Managed Device (GMD) and allows it to reach SGTS services such as SHIP-HATS, GCC2.0.
- GSIB devices do not require SEED.



<https://go.gov.sg/seeddcc>



- Single sign-on Identity & Access Management solution enabling users to access SGTS services (i.e. SHIP-HATS) securely and seamlessly.
- Public Officers will use their WOG ID (@xxx.gov.sg) while vendors will be provided a TechPass ID (@techpass.gov.sg).



<https://go.gov.sg/techpassdoc>

Gitlab Runners

1. SHIP-hosted Runner (shared)

Runner Variant	Executor	Privileged	Cache Enabled	Run Untag	Remark
Cstack Runner	kubernetes	FALSE	YES	YES	Run as non-root
Docker Runner	docker+machine	TRUE	YES	NO	Supports docker-in-docker
Windows Runner	shell	N/A	YES	NO	- OS: MS Windows Server 2019 Base - Git: 2.36.1 - Visual Studio 2022 version 17.0 - .Net framework 4.8 development tools

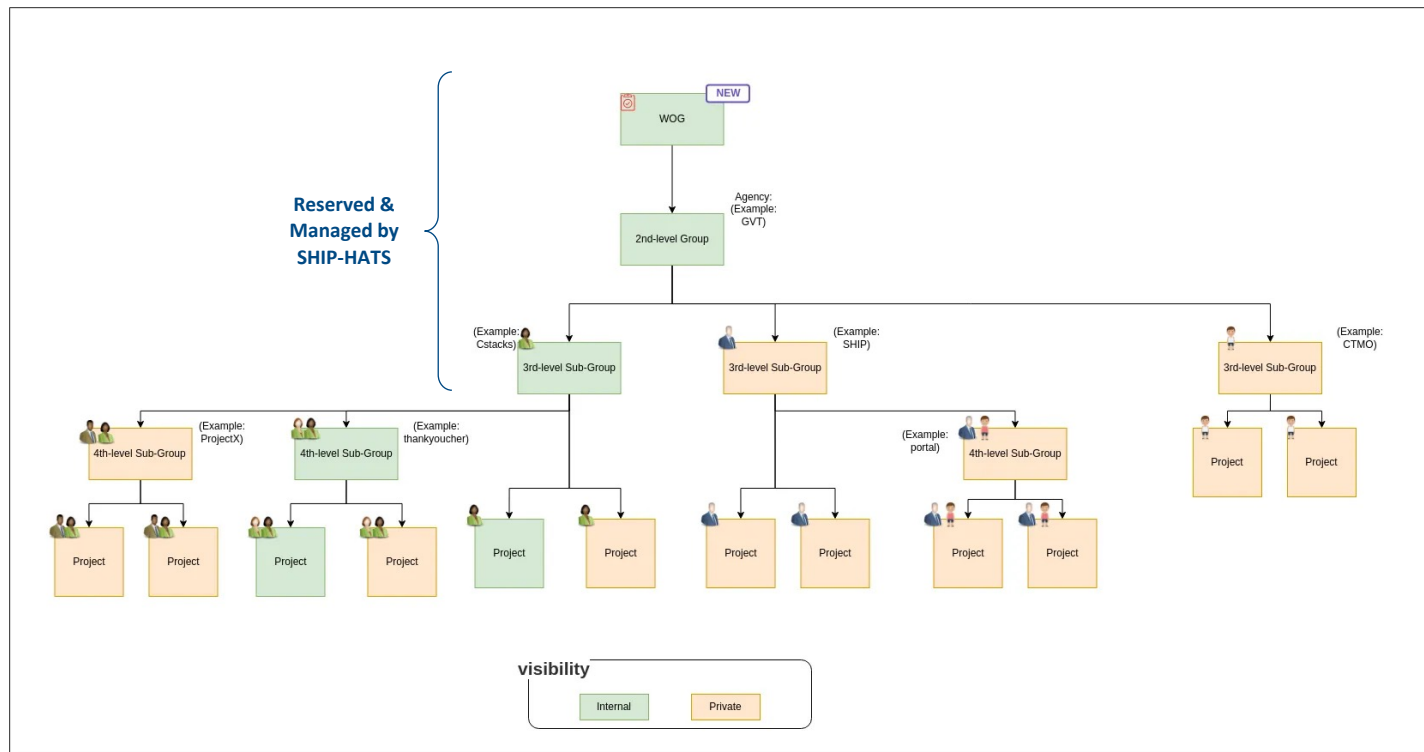
2. Agency self-hosted (dedicated) Remote Runner

- supports bootstrapped runner (as deployment agent) in tenant environments

3. Gitlab Shared Runner (on SaaS)

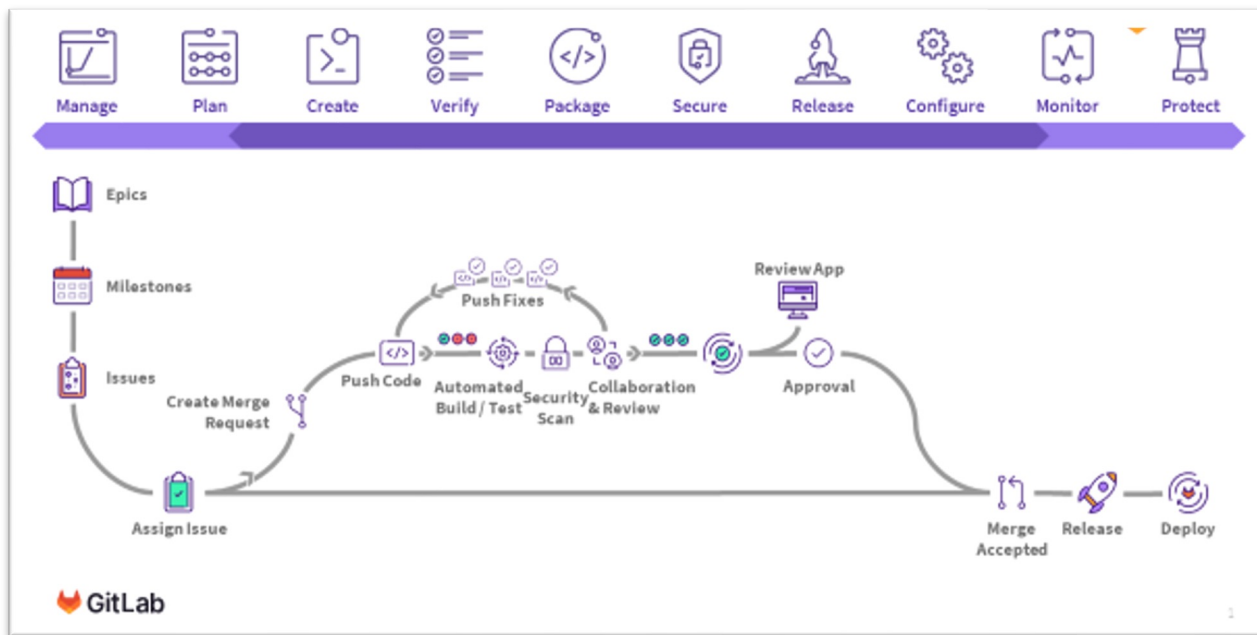
- will be available at later date, might replace some SHIP-hosted runners

User Grouping Strategy in Gitlab



E2E Templates & Compliance Pipeline

- End-to-end CI/CD templates for common use cases (supports pipeline-as-code in yaml), and in-line with Gitlab pipeline COE.
- Pipeline Compliance Framework to support GovTech standards & guidelines (e.g. DevSecOps IM8), on a audit-friendly platform.
- Example of production pipeline in Gitlab:



Feature Availability

Items	Pilot (Sept'22)	GA (Nov'22)	Future Releases
SaaS Applications	Gitlab		JIRA, Confluence, Fortify on Demand, Sonatype
Runners	SHIP-hosted runner Agency hosted runner		Gitlab Shared runners
Deployment (common service)	GCC* 1.0 (Internet) GCC* 2.0 (non-GEN)	GCC* 1.0 (Intranet) GCC* 2.0 (GEN)	Agency On-prem (DC) Commercial Cloud (CC) GCC 2.0 GCP
Automated Testing (Runtime)	Internet, non-GEN	Intranet, GEN	
E2E Pipeline Template	Limited	Support common use cases	Mature with inner-sourcing contributions
Compliance Pipeline	-	Limited coverage	Comprehensive, with SLSA framework, DevSecOps Policy
DevOps Maturity Metrics	-	Preliminary	Continuous development on VSM

* AWS & Azure

Rock'n Rolls with GitOps using Gitlab!

- <https://about.gitlab.com/demo>
- <https://about.gitlab.com/solutions/gitops>

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Siu Min Ang
Solution Consultants,
SGTS, GDS Central



Migration Approach

- Overview
- Phases
- Support
- Coming up next: Migration Deep Dive

Migration Overview

Migration to be completed within 1 year from GA (est. Nov)

Nov 2022

1 Year from GA

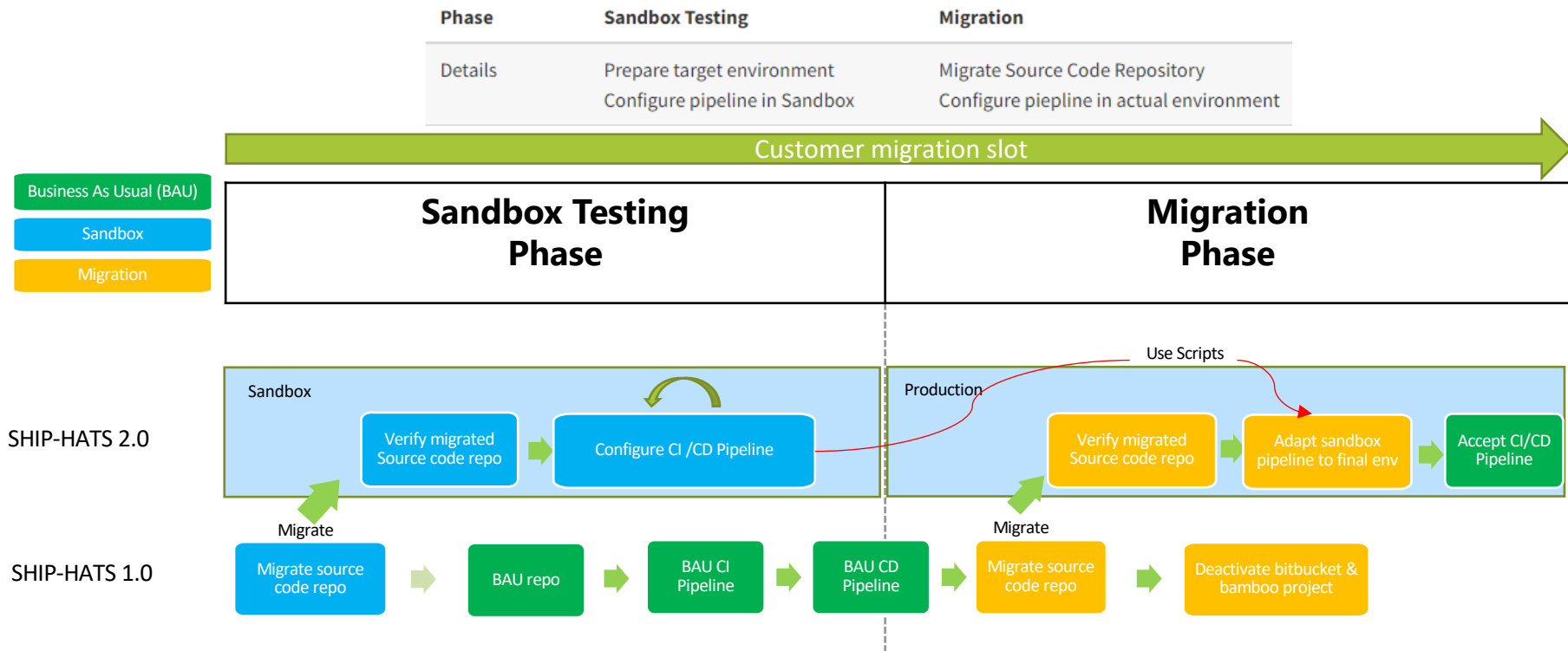
Subscribers have the flexibility to perform migration across 4 timed-boxed waves



There will be several migration slots available for booking within each wave

Migration Slots	
Slot A	Subscriber 1
Slot B	Subscriber 2
Slot ...	Subscriber ...

Migration Phases



Migration Support

	Guided	Self-led
DevSecOps maturity	Low to medium	Medium to high
Planning	Co-plan with GovTech	Self-manage with support from GovTech and self-help resources on Developer Portal
Check in	Weekly/Regular	Book GovTech office hours as per need
Guidance	Identify applicable templates, review progress, debug blockers	Any specific issues

What can you prepare NOW?

Start learning the tools

- Tutorials and tech docs in GitLab.com
- Bamboo vs GitLab pipeline structures online

Prepare your team

- Identify the **technical POC** to lead the migration
- Heads up the **leadership** and **business users** on the changes

Review your projects

- Identify potential windows for migration starting from November

Coming up next

Migration Deep Dive

13 September

- ✓ Share next level of technical details
- ✓ Review **activity list** for pre, during and post migrations to **estimate effort**
- ✓ Plan to manage change
- ✓ **Schedule to book** GovTech Solution Consultant migration slots.

Invitation emails will be sent to SA and PAs
next week.

Timelines Recap



Types of User	Onboarding Start Date	SHIP-HATS 2.0 Tools Available
All New Users	November 2022	<ul style="list-style-type: none">✓ GitLab✓ Fortify-on-Demand✓ Jira & Confluence (Self hosted)*

New users, drop us a note via <https://go.gov.sg/she> to let us know of your interest to come onboard

Type of Existing Users	Migration Window	
	Start Date	End Date
Users <u>without</u> Fortify SCA or Webinspect	November 2022	1 year from the date of GA
Users <u>with</u> Fortify SCA or Webinspect	*upgrade to Jira Cloud in Q1FY23 November 2022	31 July 2023

Existing users, keep a lookout for the email invitation to attend the migration briefing on 13 Sep

Any other questions?

Reach out to us at <https://go.gov.sg/she>

Documentation: go.gov.sg/ship-hats-docs

Additional Resources

<https://go.gov.sg/ship-hats-docs>



<https://go.gov.sg/ship-hats-docs>