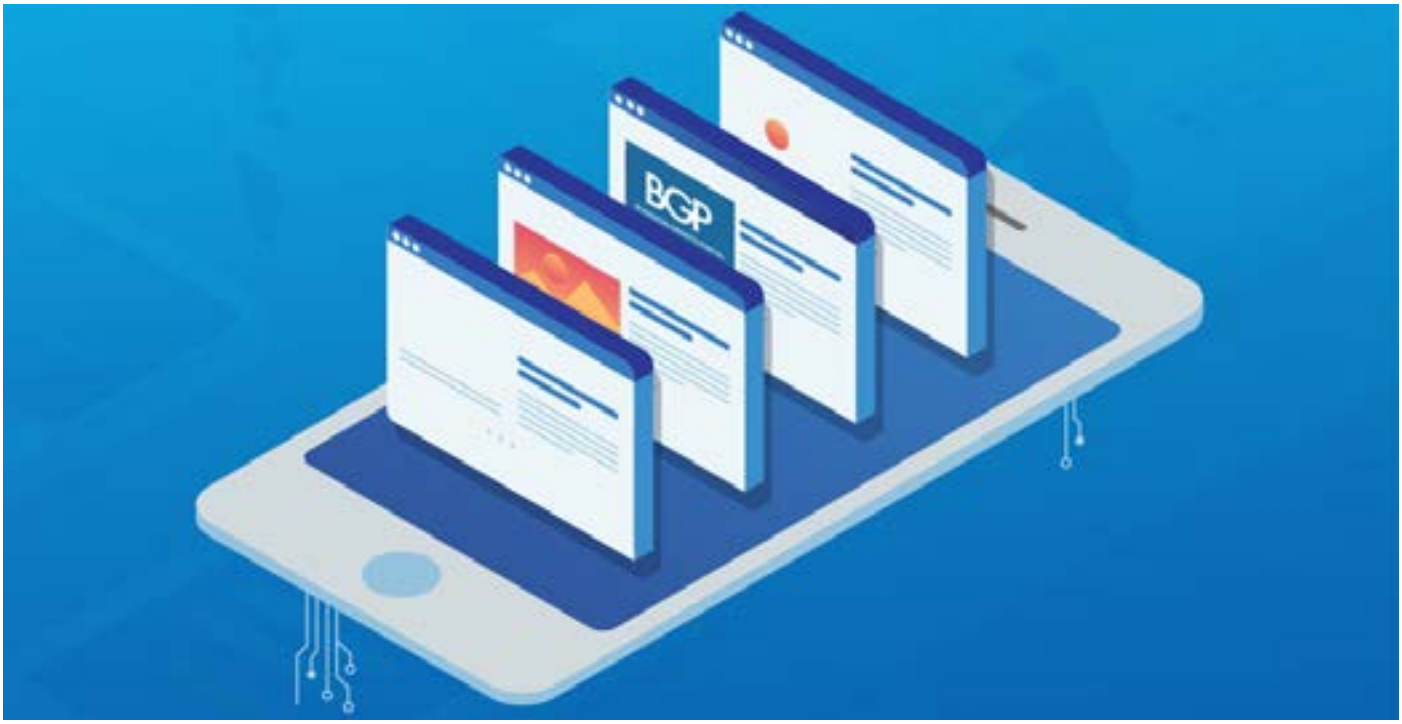
FACT SHEET

Singapore Government Tech Stack

A secure and modern way to build high-quality Whole-of-Government digital services



What is the Singapore Government Tech Stack (SGTS)?

As digital services become an integral part of everyday life, they have to be easy to use, adaptable and relevant. In particular, Digital Government services have to be developed, deployed and updated quickly.

The Singapore Government Tech Stack (SGTS), is a set of tools for developers that streamlines and simplifies the development process and enables code reuse across Whole-Of-Government (WOG) to build secure, high-quality applications.

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Traditionally, most government agencies develop their own services and infrastructure to meet the needs of the specific citizen or business group they serve, but that approach may not be the most secure, fastest or most efficient way. It could also lead to vulnerabilities during development process.

Relying on SGTS across the product development lifecycle, Singapore government agencies can capitalise on:

- Reusable common services that agencies can use to build applications rapidly.

- Standard developer tools (including API gateways, and observability and monitoring tools) that allow for rapid development, deployment testing and monitoring.

Agencies can leverage SGTS' suite of tools and services hosted on a common infrastructure to ensure consistency in the development environment, enabling the developers to focus on building high-quality applications.

SGTS also offers a CI/CD platform with Secure Hybrid Integration Pipeline-Hive Agile Testing Solutions (SHIP-HATS), container-based deployment with Container Stack (CStack), and app observability and monitoring with Stack Ops.

They can thus focus on designing solutions that best meet the needs of those they serve, without worrying about the development environment.

SGTS products are managed by Core Operations Development Environment and eXchange (CODEX).

Key Highlights

Over 250 systems from close to 50 government agencies have already reaped the benefits of SGTS by implementating their services or applications on cloud. These include time and cost savings, allowing them to focus on the services and applications instead of building cloud architectures.

SGTS in Action

- The Digital Office, Communications and Engagement Group (CEG) in the Ministry of Education (MOE), used the CStack in SGTS to securely deliver the Thank You 'Cher portal in 3 months. The portal aimed to allow the community to celebrate the dedication and selfless contribution of teachers. The CEG team built the system with CStack, running WordPress containers on Kubernetes.

Key Benefits

For Government Agencies

- Reduces the time and effort needed to introduce an early version of digital services, and enhance and maintain existing ones.

- Allows agencies to focus on designing solutions that best meet the needs of those they serve, without worrying about the underlying technical infrastructure.

- Improves the agility, speed, productivity and experience of app development and deployment, by reducing the need for agencies to set up extensive digital infrastructure. SGTS offers a more powerful development ecosystem with the right tools that allow the Government and vendors to build code efficiently.

- Improves quality and compliance with policy and cyber security standards by integrating them into the development environment and finding vulnerabilities early.

- Enhances cybersecurity through the platform's 'Security-by-Design' approach for more productive, resilient and secure systems.

- Ensures consistency across all applications and services through Standards and Tools guidelines.

- Lowers the costs of developing digital services by using centrally managed common services with better economies of scale and reduced duplication.

The SGTS Architecture

SGTS products are built on the principles of being developer-focused, driving automation, improving observability and auditability, ensuring compliance and security by design, exposing services via APIs and using native solutions.

SGTS has a 2-layer architecture:

- The **Base Layer** focuses on standardising development tools and environment.

- At the top, the **Services Layer** drives code reusability within WOG. This layer also enables the easy exchange of data across the government, aggregating data collection for richer insights that would help develop policy and monitor operations.

The SGTS platform comprises shared assets that are scalable, reusable and interoperable.

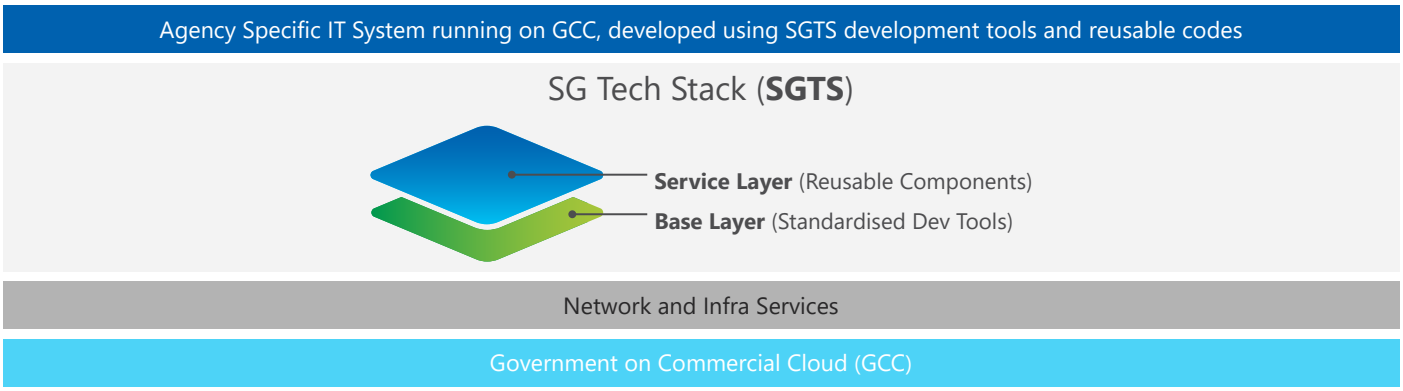

Fig 1: The different layers in SGTS.

International Collaboration

We look forward to exchanging ideas on SGTS and discussing how our experience in developing SGTS can help you.

- Explore the Singapore Government Developer Portal for SGTS and other GovTech-developed solutions starting with go.gov.sg/sgtechstack-overview.

- Get in touch with us at tmo@tech.gov.sg.

- For more information about Singapore's Digital Government Journey, visit this page.

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