Software Deployment Process

Traditional

Modern

Collaboration between developer and operation teams to handle the more complex operations of modern apps and to be able to react quickly
→ DevOps culture

Rapid application deployment
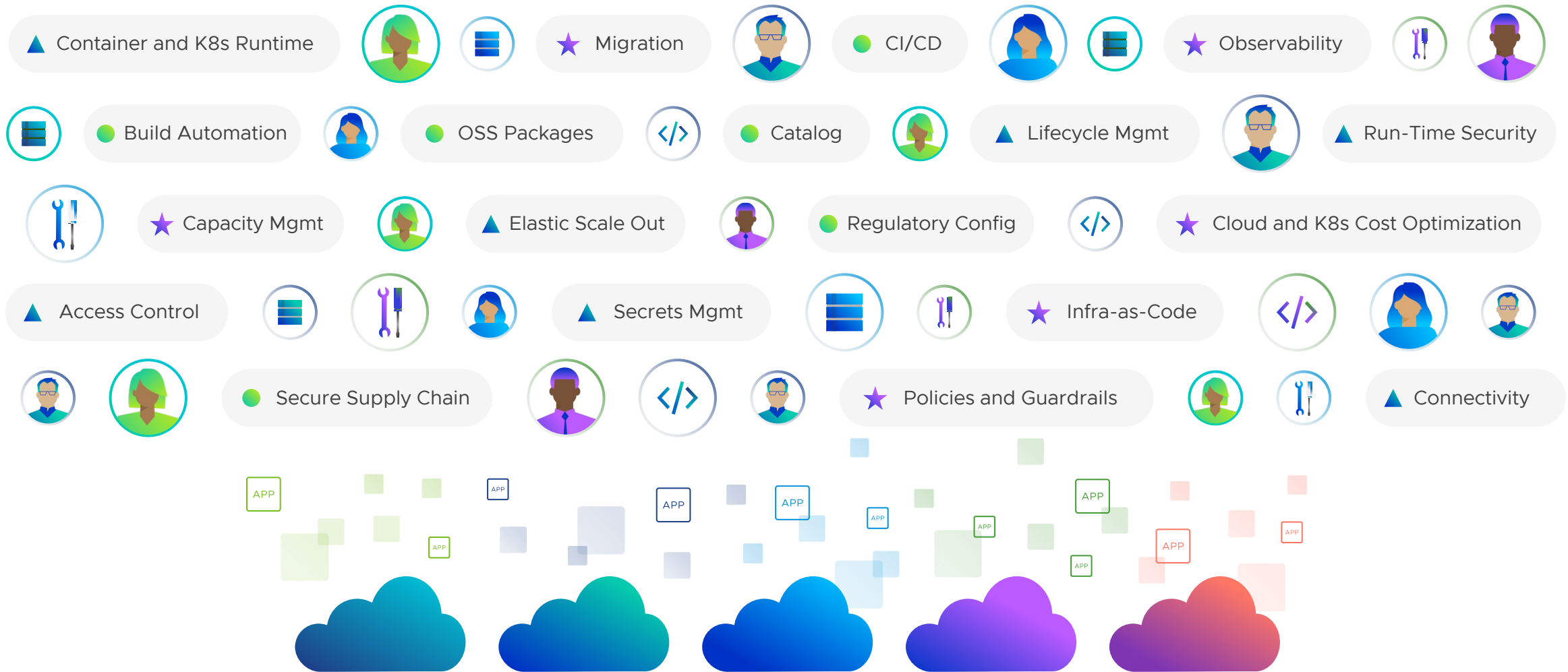→ CI/CD, Containers

Rapid provisioning
→ Containers, Kubernetes

Observability
→ VMware Aria Operations for Applications 😉

Image source: https://www.bestdevops.com/nine-steps-for-developing-a-devops-mindset

Navigating the Complexity of Modern Applications and Infrastructure
Many applications, teams, processes, a fragmented ecosystem of tools, …

Container and K8s Runtime

Migration

CI/CD

Observability

Build Automation

OSS Packages

Catalog

Lifecycle Mgmt

Run-Time Security

Capacity Mgmt

Elastic Scale Out

Regulatory Config

Cloud and K8s Cost Optimization

Access Control

Secrets Mgmt

Infra-as-Code

Secure Supply Chain

Policies and Guardrails

Connectivity

APP
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Critical Challenges to Mitigate for Increased Developer Productivity

How do we reduce the **cognitive load** of 'context switching' for our developers?
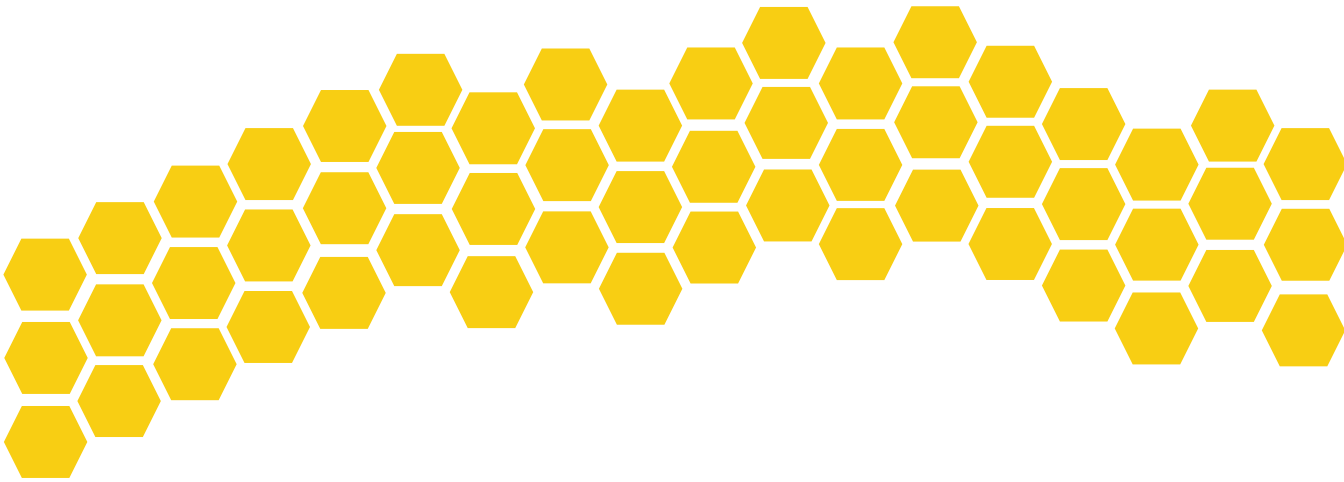
How do we improve and speed up the **onboarding experience** for our new developers?

How can we **disseminate knowledge** across teams and encourage a culture of sharing?

How do we improve **compliance & security** without slowing down delivery?

Spotify's Solution: "Golden Path" Tutorials

A Golden Path is an opinionated, well-defined, task-specific, and supported approach that reduces developer toil.

Purpose of Golden Paths

- Promoting a consistent set of tools and practices

- Make the recommended tooling easily discoverable

- Ensure that users have access to support and guidance

- Avoid reinventing the wheel and reduce the number of decisions that need to be made

- Educating new engineers and onboarding them effectively

A Centralized Developer Portal for Productivity and Collaboration

Backstage

Backstage is an open platform for building developer portals developed by Spotify and donated to the CNCF.

It unifies all your documentation, infrastructure tooling, and services via a thriving ecosystem of plugins.

- Common documentation and system topologies

- Project bootstrapping

- Growing plugin ecosystem

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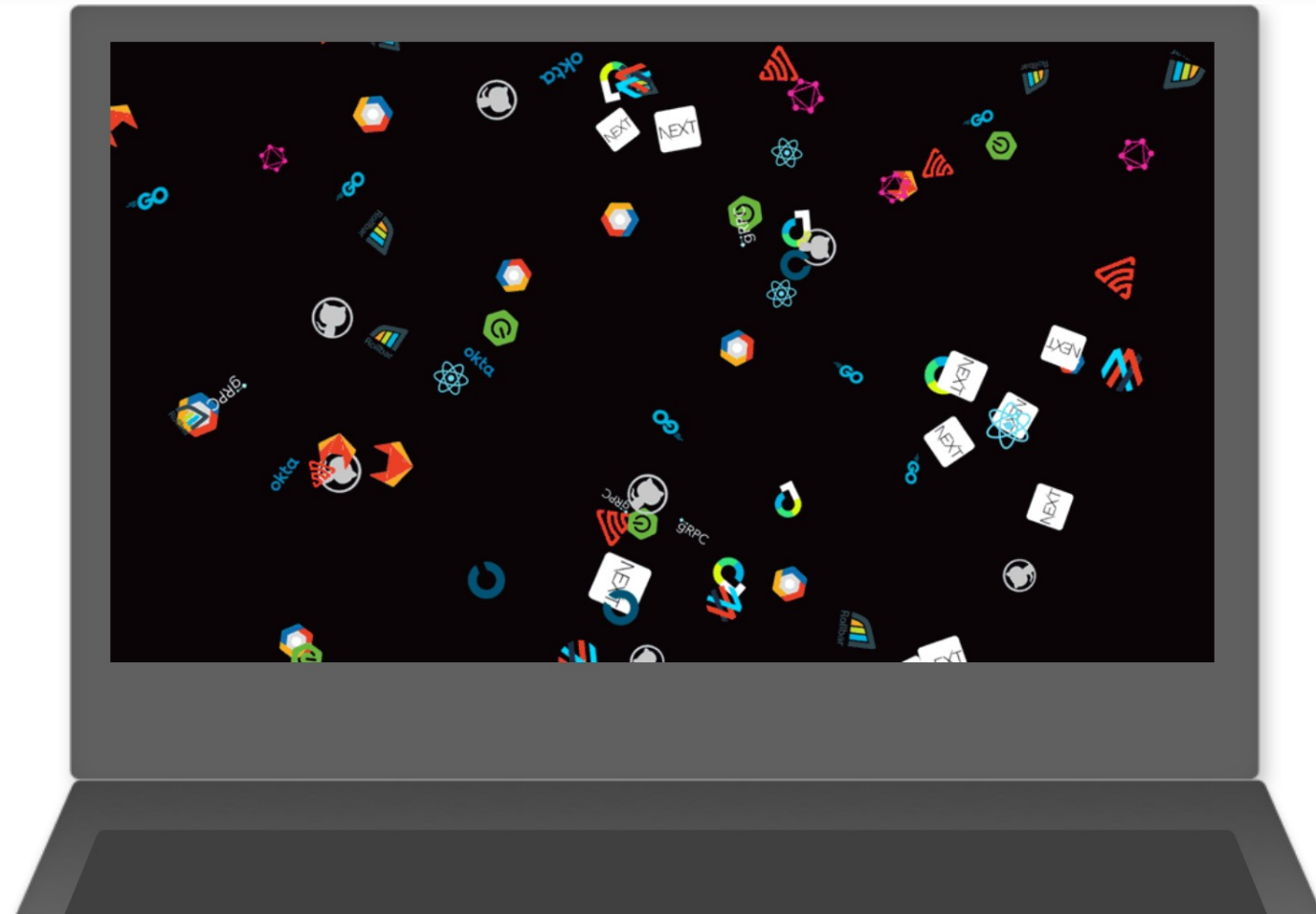
Challenges of Open-Source Backstage

- How plugins integrate with Backstage

  - Backstage is comprised of a React frontend and a Node.js/Express backend, both implemented in Typescript

  - Plugins can extend the backend and/or the frontend

  - Your forks of the frontend and backend have to be built into container images, including all configured plugins

- Missing RBAC capabilities, per-plugin implementation required

- How technical documentation is rendered in Backstage

  - It's written in Markdown files that live together with the code

  - Either they can be live transformed using MkDocs and rendered centrally in the related Backstage plugin with a Docker in Docker setup - which can be a security risk

  - Or during CI where the MkDocs generated sites are stored in a blob storage to be rendered in the Backstage plugin

- You still have to manage all the tools that you integrate via plugins

- Most of the available OSS plugins are not built by the vendors of the tools they integrate

Tanzu Developer Portal – VMware's commercial Backstage offering
Enterprise grade Backstage portal to boost your developers' productivity

- Generally available as part of TAP since January 2022, also available in TAS, ASA

- Contains proprietary VMware functionality (plugins) & enterprise features

- Leverages VMware's extensive experience in K8s, Spring, SDLC

Provides Core Portal Functionality

- Software Catalog
- TechDocs
- **Application Accelerator** (Software Templates++)
- **Runtime Resource Visibility** (Kubernetes plugin++, option to visualize TAS resources)

Extensible & Future-proof

- **Configurator** tool (beta) to automate integration of community and custom plugins
- Integration with Tanzu + Aria products
- Closely aligned to the open-source project

Enterprise-ready & supported

- Lifecycle management based on Carvel technology
- Regular feature & security updates
- VMware's enterprise support
- Professional services available by Tanzu Labs

vmware®

Summary

- Golden Paths enable your organization to build better software and deliver it to production faster, with higher quality and greater control!

- A developer portal can serve as the foundation for Golden Paths, allowing teams to discover resources, create projects, integrate components and tools, and deploy and operate software all from a single pane of glass.

- Backstage is a platform for building developer portals, it doesn't provide any value without your Golden Paths, and the tools that are integrated

- Tanzu Developer Portal adds enterprise readiness and commercial plugins to OSS Backstage