

Alauda Container Platform User Guide

An Enterprise Cloud-Native Success Platform

Key Benefits

- **Maximize Developer Productivity:** 400% faster release velocity
- **Achieve Operational Excellence:** 83% fewer incidents
- **Optimize Resource Utilization:** 60% reduction in infrastructure costs

Alauda Container Platform Overview

Based on Kubernetes, ACP automates the management of a diverse and dynamic infrastructure, as well as supports modern application development and operations. It seamlessly integrates components of the DevOps toolchain to maximize developer productivity and unlock end-to-end agility. It provides microservices governance to enable a modern application architecture. With a focus around delivering cloud-native capabilities and best practices, ACP empowers enterprises across industries to continuously innovate in the Digital Age.

ACP Advantages

The Alauda Container Platform is designed for Hybrid and Multi-Cloud. It provides a unified control plane to orchestrate modern application workloads, flexible DevOps processes, diverse and dynamic infrastructures, as well as backing cloud services.

Our unique approach provides an unopinionated foundation and framework that enables each organization to create its own opinionated internal development and operations platforms.

Maximize Developer Productivity

- **Open DevOps Toolchain Integration:** Freely integrates existing DevOps tools that developers love to use.
- **Flexible DevOps Process Orchestration:** Fully customizable DevOps processes to cater to the needs of organizations of different sizes and DevOps maturity.
- **Designed for Cloud Native:** Designed and optimized for containerized workflows and cloud native development processes.
- **Simplify Service Mesh:** Adopt microservices and serverless design patterns.

Achieve Operational Excellence

- **Hybrid & Multi-Cloud:** Supports any infrastructure; Manages on-prem K8s clusters as well as public cloud managed K8s services, such as AWS EKS and Azure AKS.

- Unified Control Plane: End-to-end observability for hybrid and multi-cloud to improve site reliability; Manages applications, developer workflows, infrastructures and backing cloud services from a single place.
- Full Distributed Cloud Stack: A complete distributed cloud stack – public cloud, data centers & edge locations.
- Cloud Native Data Services: A fully integrated suite of cloud native data services that is enterprise-ready out of the box.

ACP Products & Services

Cloud-Native Infrastructure

Alauda Container Platform provides a unified distributed cloud stack to fully automate the management of diverse and dynamic infrastructures across public cloud providers, on-prem environments and edge locations. It extends Kubernetes and goes beyond container management to offer container native virtualization, container host OS, comprehensive networking and distributed storage capabilities.

Cloud-Native Application Architecture

Alauda Service Mesh is an enterprise ready microservices governance platform based on Istio. It helps developers manage the operational complexity introduced by modern application architectures. ASM provides end-to-end observability, mediation of communication across service components, advanced service deployment strategies, improved reliability and security, and ease of management for the service mesh infrastructure itself.

Cloud-Native DevOps

Alauda DevOps extends Kubernetes to offer an open DevOps toolchain integration and orchestration platform. It enables integrations of the tools developers love to use. It uses Kubernetes to orchestrate the tools running on top of the platform. Ultimately, it ties everything into an end-to-end DevOps process. The goal is to fully automate the DevOps best practices and deliver that as a service.

Cloud-Native Data Services

ACP aims to provide full-stack support for cloud native applications and offers most popular data services out of the box. It makes extensive use of the operators pattern to fully manage these components and deliver them as managed data services. In addition, ACP provides a cloud native machine learning platform which brings out the engineering best practices for doing MLOps and running machine learning workloads on top of Kubernetes.

ACP Features

Feature	Description
Any Infrastructure	ACP can be deployed on your infrastructure of choice and fully automates the management of diverse and dynamic infrastructures across physical, virtual, public cloud, on-prem or edge locations.
Kubernetes	All of ACP is based on Kubernetes. It is, in fact, “Kubernetes native”. ACP ships with the Alauda Kubernetes (AKS), an enterprise K8s distribution that is battle-tested and continuously hardened for configuration and security. We also maintain a curated set of plug-ins that make it enterprise ready out of the box.
Multi-Cluster Management	<p>ACP can deploy or manage multiple K8s clusters across environments. Besides the built-in Alauda Kubernetes (AKS), ACP can import and manage all compliant third party K8s distributions, including the managed K8s services from public cloud providers or enterprise distros such as OCP.</p> <p>ACP supports deployment and management of applications across clusters and environments. ACP GitOps applies GitOps best practices for delivering applications defined as code in Git to desired environments.</p>
Virtualization	ACP offers container-native virtualization based on KubeVirt. ACP can orchestrate VM-based workloads side by side with containers. Other interesting use cases include hyper converged infrastructure and full data center management with Kubernetes.
Networking	<p>Alauda open sourced a project called Kube-OVN and donated it to CNCF. As the name implies, it is an integration of K8s with the OVN/OVS-based networking. It brings the full richness of the networking capabilities from OpenStack to the world of containers and Kubernetes.</p> <p>In addition, ACP supports other popular CNIs such as Calico, Flannel and Cilium.</p>
Storage	ACP offers an array of container storage solutions. For the datacenter scenario, ACP offers distributed storage based on Ceph. ACP also uses K8s to orchestrate node local storage. We offer a Minio-based lightweight object storage for backups and ML workflows. We offer a lightweight distributed block storage based on OpenEBS, typically used

	as backing storage for data services or container-native virtualization.
Hybrid & Multi-Cloud	ACP is designed for hybrid & multi-cloud. K8s is not just a portability layer for workloads across environments. K8s is the open API for everything cloud & infrastructure. ACP provides a unified control plane for hybrid & multi-cloud, to manage applications, infrastructures, K8s clusters and backing cloud services all from a single place.
Service Mesh	ACP Service Mesh is an enterprise-ready microservices management platform based on Istio. It helps developers manage the operational complexity introduced by modern application architectures. ASM provides end-to-end observability, mediation of communication across service components, advanced service deployment strategies, improved reliability and security, and ease of management for the service mesh infrastructure itself.
Enterprise Java	ACP is optimized for cloud-native Java development. We offer a spectrum of options to run Spring Boot and Spring Cloud based applications on K8s and seamlessly integrate them with Service Mesh. We make sure the broad microservices management scenarios and capabilities apply consistently across different kinds of applications.
DevOps Toolchain Integration	ACP DevOps provides a set of abstractions and extensibility mechanism to make it possible to integrate any DevOps tools developers love to use. With minimal work, you can drop in an existing tool or the entire existing DevOps toolchain and the DevOps experience will automatically light up around these tools.
DevOps Tools-as-a-Service	For a curated set of commonly used DevOps tools, ACP extends Kubernetes to provide full lifecycle support. We can deploy this set of tools to ACP with one click, and we make extensive use of the <i>Operators Pattern</i> to fully automate the management and operations of these tools.
CI/CD Pipelines	ACP DevOps supports Jenkins as well as Tekton. Organizations can fully customize the CI/CD processes that are tailored to their needs. The platform provides a library of extensible building blocks and templates to easily construct customized processes.
GitOps	ACP DevOps offers GitOps based on Argo CD. This allows developers and operators to define everything as code, use Git as the single source of truth, and use developer-friendly git-based tools for operations. The platform not only faithfully applies the desired state defined in Git, but also

	<p>continuously monitors the actual state in the cluster, detects any drifts and reconciles automatically whenever necessary.</p>
Data Services	<p>ACP aims to provide full-stack support for cloud-native applications and offers most popular databases, cache and messaging services out of the box. It makes extensive use of the <i>Operators Pattern</i> to fully manage these components and deliver them as managed data services.</p>
Operators	<p>ACP makes extensive use of the <i>Operators Pattern</i> to automate the management of all aspects of the platform. Examples are the full lifecycle of the ACP platform itself, the data services provided by the platform, the DevOps tools fully managed by the platform, as well as other complex sub-systems such as container storage. Additionally, ACP offers an Operators Hub to integrate third party operators as well as user defined operators.</p>
Observability	<p>ACP offers a comprehensive monitoring system based on Prometheus. We collect a broad set of metrics by default, from the underlying infrastructure, Kubernetes, the ACP platform itself as well as workloads running on top of the platform. Users can define and collect custom metrics for their applications. We have a collection of built-in monitoring dashboards which can be customized by the users. Metrics can be wired to alerting and notifications.</p> <p>ACP offers centralized log management based on Elasticsearch. ACP can also integrate user provided external log management systems. ACP also supports auditing for security & compliance, as well as events and distributed tracing as part of the end-to-end observability platform.</p>
Security	<p>ACP employs DevSecOps best practices to shift security left and ensure software supply chain security. ACP implements Kubernetes security posture and conforms to the latest CIS benchmarks. ACP integrates NeuVector to offer advanced container runtime and networking security.</p>



About Alauda

Alauda is a Cloud Native Platform provider at the forefront of empowering Enterprise IT to continuously innovate in the Digital Age.

With its Enterprise Cloud-Native Success Platform offering, Alauda focuses on delivering cloud-native capabilities and DevOps best practices to help enterprises modernize application architecture, maximize developer productivity, and achieve operational excellence.

Alauda helps hundreds of the largest organizations across all industries accelerate digital transformation with cloud-native technologies and best practices.

Alauda Facts

- Founded in 2014 by core engineers from Microsoft Azure
- 400+ largest enterprise clients across all industries
- Strategic investment from Intel Capital
- Repeatedly featured in Gartner reports