avassa

DATA SHEET

Operating applications at the distributed edge

There is no getting around it – the cloud operating model has forever changed the IT industry. And for the better. Moving to the cloud is more flexible, yet programmatic, making you rethink all the tools and processes your teams use to develop, lifecycle, and monitor applications.

Now, the cloud paradigm is being extended to include edge computing, enabling you to run applications across many distributed edge sites.

The more distributed applications are brought to the edge, the more you are faced with challenges like configuration management, lifecycle management, and data compliance.

But what if you had a platform that addressed these challenges, transforming your approach to the edge as radically as the cloud approach once did?

With Avassa, you can deploy, upgrade, monitor, and observe your applications across many edge sites. Think of your lifecycle management in terms of:

- Application specifications
  Written by developers – that define the structure of applications. Which containers and associated resources and configuration?

- Deployment specifications
  Written by DevOps engineers – that define placement policies for specific applications.

These specifications are declarative, so the system constantly maintains your desired state.
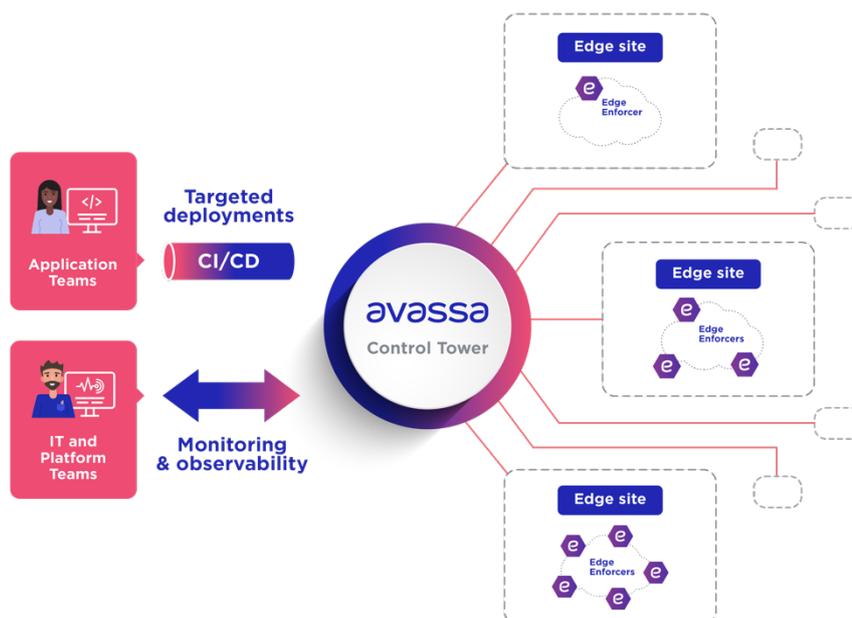
You do not need to actively perform actions like start and stop. And if you need to modify the specifications, like changing a container version for example, Avassa immediately calculates the minimum set of operations and converges the edge sites to the new desired state.

It is easy to integrate Avassa into CI/CD pipelines. The specifications are maintained in the code repository and are pushed to Avassa when you publish a new application version to deploy across all edge sites. It is that easy.

The Avassa Platform

Let's take a closer look at the Avassa platform, which contains two software components: the Control Tower and the Edge Enforcer.
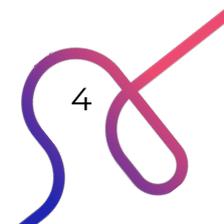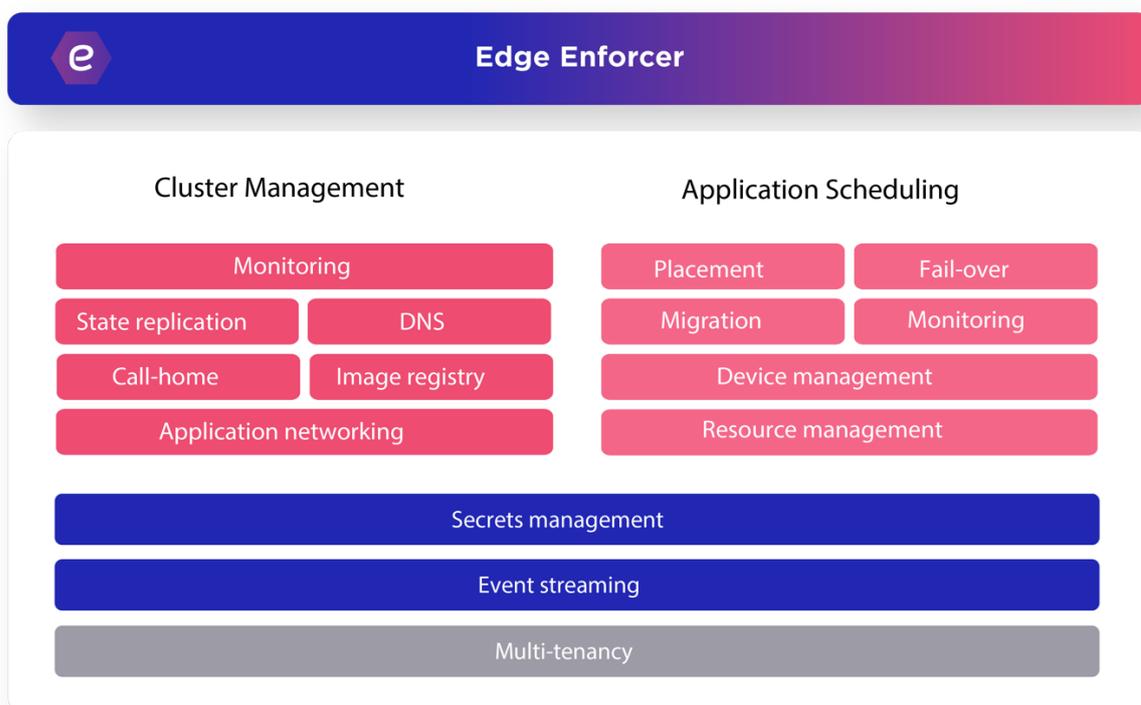
THE CONTROL TOWER

The Control Tower provides central management of distributed edge resources and containerized applications through user interfaces and APIs. It is available as a service or can be installed on private infrastructure.
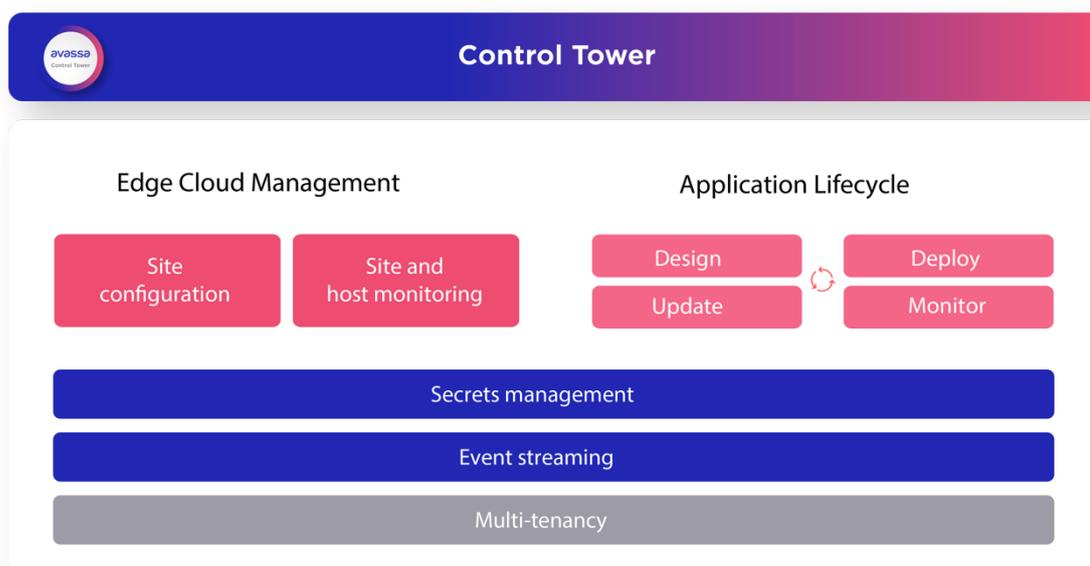
THE EDGE ENFORCER

The Edge Enforcer is a software agent installed on all hosts in all edge sites. It provides zero-touch host registration functions, local cluster management, application placement and scheduling. In addition, the Avassa Edge Enforcer provides edge-native services, with site-local APIs, for secrets management, container registry, and distributed event streaming.

Edge Enforcer		
Cluster Management	**Application Scheduling**	
Monitoring	Placement	Fail-over
State replication / DNS	Migration	Monitoring
Call-home / Image registry	Device management	
Application networking	Resource management	
Secrets management		
Event streaming		
Multi-tenancy		

What makes Avassa different?

SIMPLE AND USER-FRIENDLY

- **Purpose-built from the ground up specifically for the edge.**
  With one goal in mind, Avassa enables a clean, simple platform – with integration of orchestration, cluster management, security management, and event streaming built in. It is that straightforward.

- **Deployment of applications to edge sites.** Deploying applications directly to edge sites makes sure your configuration, secrets, certificates, tenant configurations, and images are installed at the site. No messing around with manual steps or additional tools.

- **Easy integration.** Integrate your application deployments without thinking twice with widely available developer tooling, such as CI/CD pipelines. There's no wasted time with intermediate steps.

APPLICATION-CENTRIC SOLUTION

- **Policy-based application placement and scheduling.** Have ultimate control over where you place applications on sites and hosts. Even better, declarative application definitions maintain your desired configuration states at the edges.

- **Edge-native application services are built into each site cluster.** With local instances on each edge site, your edge-native application services are built in, so there's no need to install, configure, or upgrade. Avassa handles this automatically.

- **Application-focused monitoring.** You deserve more than just low-level events and metrics. The Avassa solution focuses on application health and gives you a drill-down into container troubleshooting.

DISTRIBUTED SECURITY

- Centralized management of distributed secrets like certificates, credentials, and application secrets.

- One-step operations to block a tenant, a site, or a host.

- Fully secured encrypted local secret store at each edge site.

- Deep multi-tenancy, including data isolation, to separate application teams as well as edge site owners.

Deployment options

Like everything else with the Avassa platform, you have options when it comes to deployment:

- The Avassa Edge Enforcer can be deployed on any general compute with Linux and Docker. Hosts can range from small Intel NUCs and Rasberry Pi's to larger general-purpose servers.
- The Avassa Control Tower is offered as a PaaS solution or on-prem.

System Requirements
Avassa assumes the applications are composed of OCI compliant images.

EDGE ENFORCER
The Edge Enforcer is a software agent installed on all hosts in all edge sites.

- *Linux kernel 5.4 or higher*
- *Docker version 19.03 or higher or Podman version 4 or higher*
- *Minimum 2GB RAM: the edge enforcer consumes between 100 and 500Mb, that leaves 1.5Gb for operating system and applications*
- *Minimum 1 vCPU not dedicated*
- *Minimum 2 GB disk space*
- *Fully automated install script available on Debian, Ubuntu, RHEL, CentOS and Alpine*

CONTROL TOWER ON-PREM
Delivered as a container. Shall run on three hosts or more.

Host requirements:
- *Linux kernel 5.4 or higher*
- *Docker version 19.03 or higher*
- *Minimum 4GB RAM plus dimensioning based on number of edge sites*
- *Minimum 2 GB disk space plus additional space for all images*

To learn more about the Avassa platform can help your business, visit our website avassa.io or get in touch.