EPIC EDGE

Epic Edge Cluster Manager

Governing Kubernetes clusters — on-premise, sovereign, AI-native

Product presentation document

Version 1.0 · November 2026



> **Purpose of this document**
>
> This document describes, from a product and service perspective, Epic Edge Cluster Manager: the dashboard dedicated to governing the fleet of Kubernetes clusters and the interface of the ClusterSentinel AI module. Who it is for, how it appears, which operations it allows and which choices make it defensible in an audit. It does not contain implementation details or technical-level architectural descriptions, which are the subject of separate documentation.

1. Summary

Epic Edge Cluster Manager is the dashboard from which an organization governs the entire lifecycle of its Kubernetes clusters — from creation to upgrade — from a single interface, without opening Rancher or using kubectl.

Running Kubernetes in production means creating clusters, scaling them, protecting their state, restoring and upgrading them. Today every operation goes through Rancher or the command line and requires skills that few people in the organization possess; with several clusters to follow there is no overall view that says where to intervene, and an irreversible operation carried out by mistake cannot be undone.

Epic Edge Cluster Manager is the dedicated interface of the ClusterSentinel AI module, within the SentinelForge AI ecosystem. It presents all clusters in a single fleet view ordered by status and, on each cluster, opens the governance actions: creation, scaling, state protection with etcd copies, restore, upgrade

and bringing existing clusters under management. The dashboard never communicates directly with the infrastructure: it translates every request into a plan executed by the automation engine in a traced manner, the cluster credentials do not pass through the platform and irreversible operations are protected by an explicit confirmation.

> **In one sentence**
> A single dashboard, on-premise and sovereign, to govern the fleet of Kubernetes clusters — creating, scaling, protecting, restoring and upgrading them — without Rancher or kubectl and without the cluster credentials leaving the perimeter.

2. The context and the needs it addresses

The project stems from Epic Edge's direct experience in managing Kubernetes clusters in production, on OpenStack, Proxmox VE and OpenShift. From this experience four needs consistently emerge.

- **Expertise concentrated.** Operating the clusters — creating, scaling, upgrading them — requires mastery of Rancher and kubectl: governance stays in the hands of a few people, and onboarding a newcomer is slow.
- **State protection.** etcd copies often stay on the very node they are meant to protect, and an irreversible operation — a restore, an upgrade, a deletion — carried out by mistake cannot be undone.
- **Fleet view.** With clusters for different customers and environments there is no single screen that says where to intervene: the costliest mistakes are not the failures, but the things forgotten.
- **Data sovereignty.** Cluster credentials and topology must stay within the organization's perimeter; AI automation must not require exposing data to external services.

Epic Edge Cluster Manager was designed starting from these needs, and not as an adaptation of a generic tool.

3. What Epic Edge Cluster Manager is

The dashboard presents itself as a web portal that the user accesses with their corporate credentials. From there they see only their own clusters and, on each one, the operations actually available: the interface is built around what the platform declares possible, not around a fixed list of commands.

Feature	Description
Full lifecycle	Creates, scales, protects state, restores and upgrades Kubernetes clusters from a single interface.
No Rancher or kubectl	The user operates from the panel; the cluster credentials never pass through the platform.
Fleet view	All clusters in a single screen ordered by status, with the nodes and the phase of each.
Traced execution	Every request becomes a plan executed by AWX and Ansible, recorded and inspectable.

Feature	Description
Protected operations	Restore, upgrade and deletion require retyping the cluster name.
On-premise and sovereign	Installable within the customer's perimeter, with the language engine run on-premise.

3.1 How it works: the architecture in brief

Epic Edge Cluster Manager is the interface of the ClusterSentinel AI module. Between the dashboard and the clusters operates a multi-provider middleware: the dashboard does not run commands, but produces a plan that the middleware entrusts to an automation engine based on AWX and Ansible. It is this decoupling that makes audit, dry-run and revocation before execution possible. The clusters are governed through Rancher/RKE2; the etcd copies can have an external destination on S3 storage.

The model proposes. The automation engine executes.

The dashboard is also data-driven: the operations available on a cluster are declared by the platform, not by the interface. A cluster whose machines' location is unknown cannot be scaled, and the command simply does not appear.

4. The fleet view

The core of the dashboard is the fleet view: a single screen that answers the question «where should I look today». Each cluster appears with its own status — ready, updating, with nodes not ready — the Kubernetes version, the number of nodes by role and the network. Only the user's own clusters appear: those of other customers in the same environment are not listed.

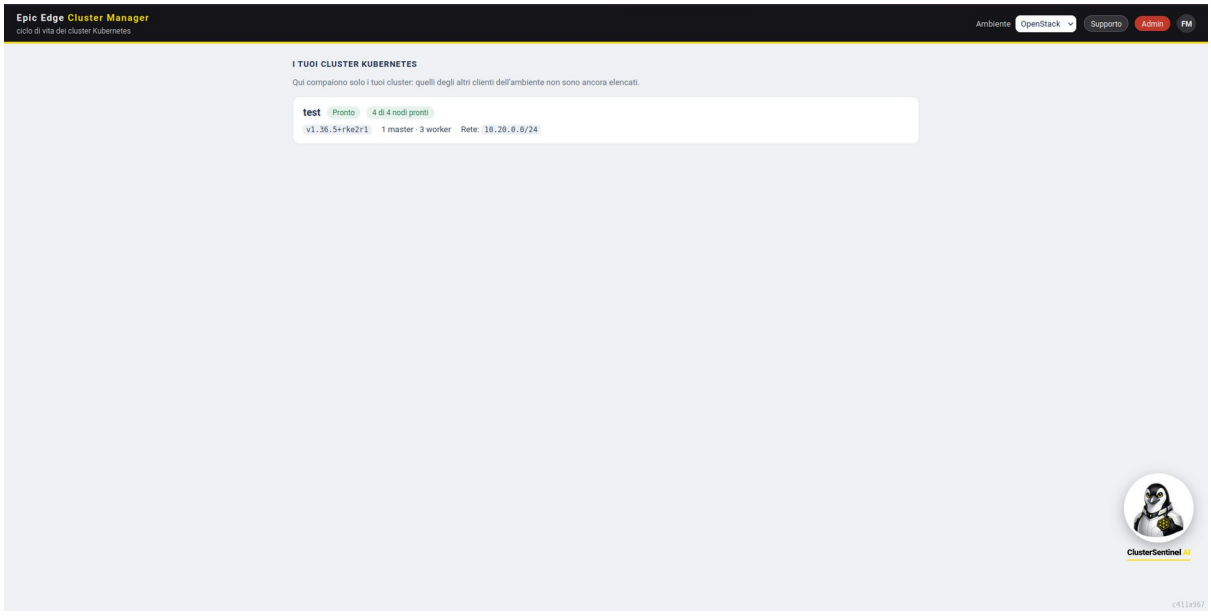


Figure 1 — The fleet view: the user's clusters ordered by status, with version, nodes and network. The day's priority is the first thing you see.

5. The cluster detail

On opening a cluster, the dashboard shows the complete picture: the Kubernetes version in use and the one available, the list of nodes with role — master or worker — and status, the etcd copies with their schedule and

history, and the link to the Rancher console for everything not exposed here. It is the view of someone who must understand, in a few seconds, whether the cluster is healthy and what has already been done.

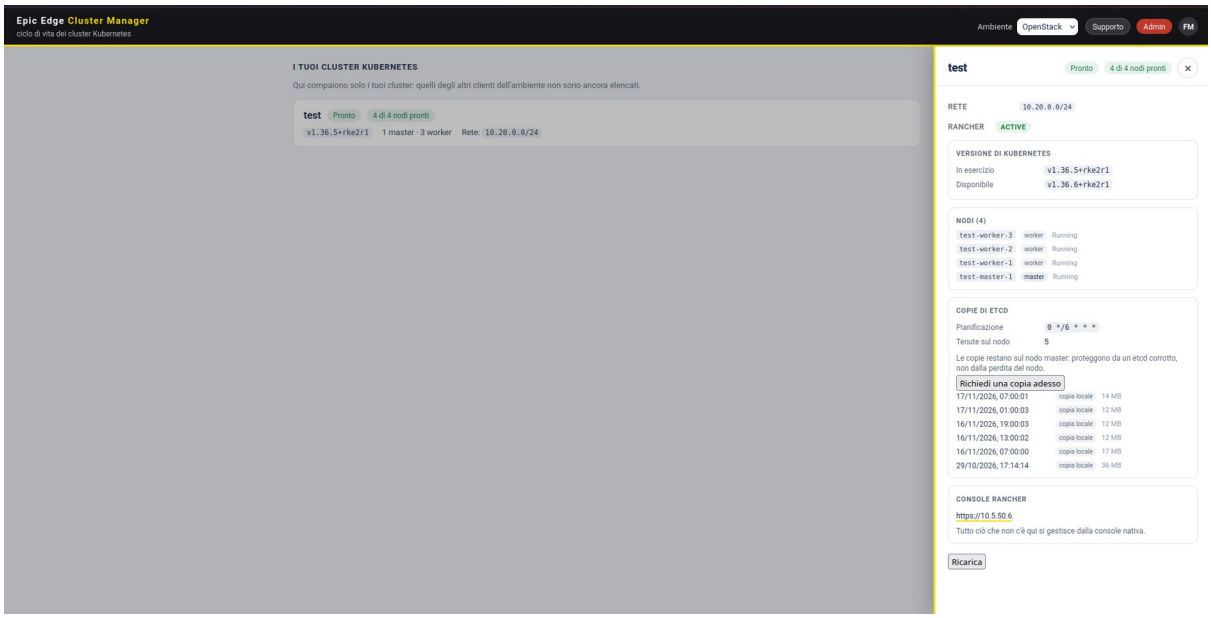


Figure 2 — The detail of a cluster: version in use and available, nodes with role and status, etcd copies with schedule and history, Rancher console.

6. The cluster actions

From the same environment the user opens the catalog of actions: creating a K3s cluster or a custom configuration, and then — on the chosen cluster — all the governance operations. Every action is presented for what it does, with its consequences stated; irreversible operations are separate and protected.

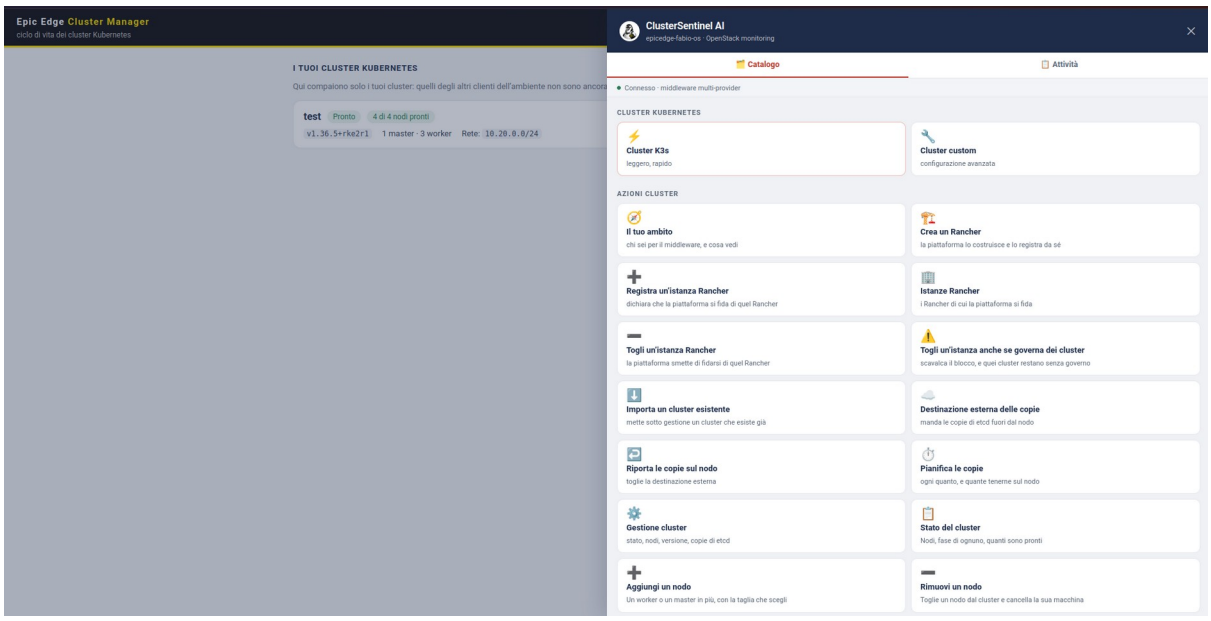


Figure 3 — The catalog of cluster actions: creation, scaling, state protection, import and scheduling of copies.

6.1 What it governs

- **Create.** Lightweight, fast K3s clusters, or custom configurations for advanced needs.

- **Scale.** Adds and removes nodes — worker or master — with managed draining of the node before removal.
- **Protect the state.** On-demand or scheduled etcd copies, with configurable retention on the node and an external destination on S3 storage.
- **Restore.** Recovery from a chosen copy and upgrade of the Kubernetes version.
- **Bring the existing under management.** Import of already-active clusters without moving them: the platform generates the command that the customer runs on their own cluster.

6.2 The choices that make it defensible

- **Capabilities declared by the platform.** The operations available on a cluster are declared by the platform, not by the interface: a cluster whose machines' location is unknown cannot be scaled, and the command simply does not appear.
- **Storage credentials never in transit.** To send the etcd copies to an S3 bucket, the secret with the keys stays in the customer's Rancher; only the name of the secret is communicated to the platform.
- **Irreversible operations protected.** Restore, upgrade and deletion require retyping the cluster name, not a simple confirmation.
- **Words that tell the truth.** An etcd copy that remains on the master node is a «local copy», not a «backup»: it protects against a corrupted etcd, not against the loss of the node.

7. The conversational assistant

The same operations can be requested in natural language, through the assistant shared with EdgeForge AI. The assistant knows the context of the environment, answers questions about the status of the clusters and proposes the actions, which the user confirms before execution. The activity log remains available for verification.

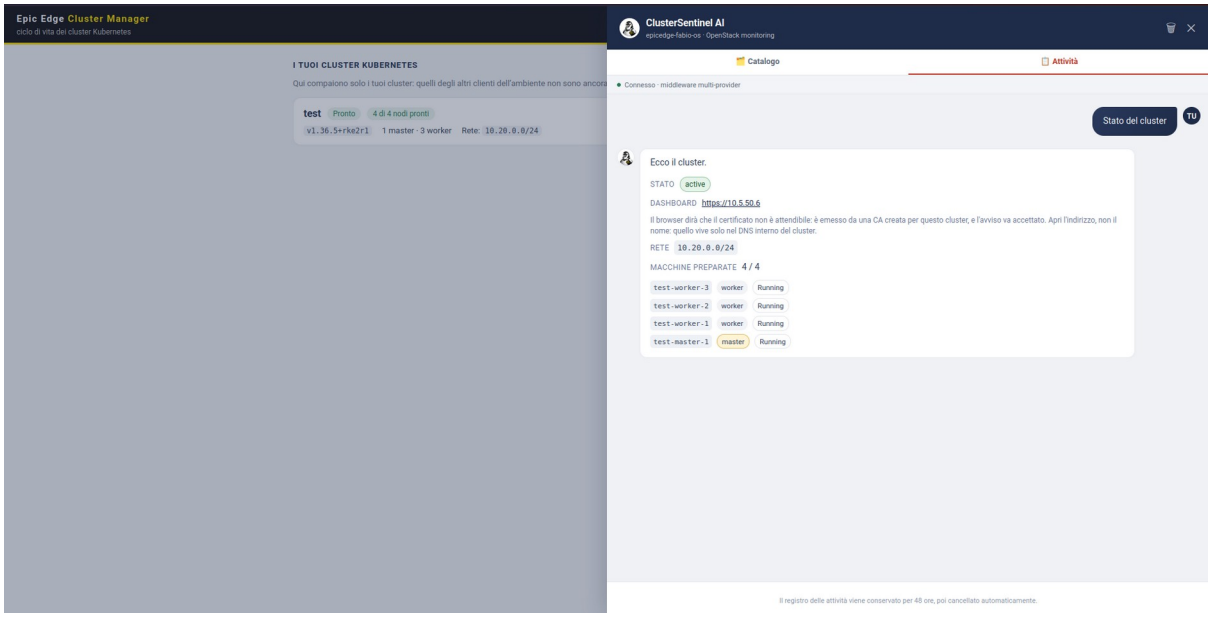


Figure 4 — The ClusterSentinel AI assistant answers about the cluster status and proposes the operations, with execution only on confirmation.

8. Continuity with Rancher and the native consoles

The dashboard does not replace the specialist tools: it complements them. For everything not exposed in the panel — the fine configuration of the cluster, access to the workloads — the user reaches the native Rancher console from the link in the cluster detail. The credentials of that console stay with the customer: the dashboard, when needed, generates a new one without keeping the one in use.

9. Who it's for

Epic Edge Cluster Manager is for those who govern several Kubernetes clusters and need to do so in a uniform, traceable and sovereign way.

- **Cloud & Service provider.** Those who deliver Kubernetes-as-a-Service and want to reduce the operational cost per cluster.
- **Telco & ISP.** Multiple production Kubernetes clusters, across multiple data centers, to govern with the same user experience.
- **Public Administration.** Cluster governance compatible with sovereignty requirements: credentials and data stay within the perimeter.
- **Finance & Banking.** Contexts where every operation on the clusters must leave a complete audit trail.
- **Enterprise IT.** Platform teams managing cluster fleets with staff undersized relative to demand.
- **MSPs and system integrators.** Clusters for different customers, with isolated credentials and per-cluster policies.

10. Project status

The ClusterSentinel AI module is operational today within Epic Edge's Cloud Management Platform, as the panel's Kubernetes catalog: creation, scaling, state protection, restore, upgrade and import of clusters are already available and in use. Epic Edge Cluster Manager is the dashboard dedicated to those same functions, today under development: it extends their use into a dedicated interface, designed for governing the fleet. The images in this document are captures of the real environment.

> **A note on the status**
> ClusterSentinel AI is available and in use in the CMP. Epic Edge Cluster Manager, the dedicated dashboard described here, is under development: the cluster governance functions shown are already operational, while the standalone interface is being built.

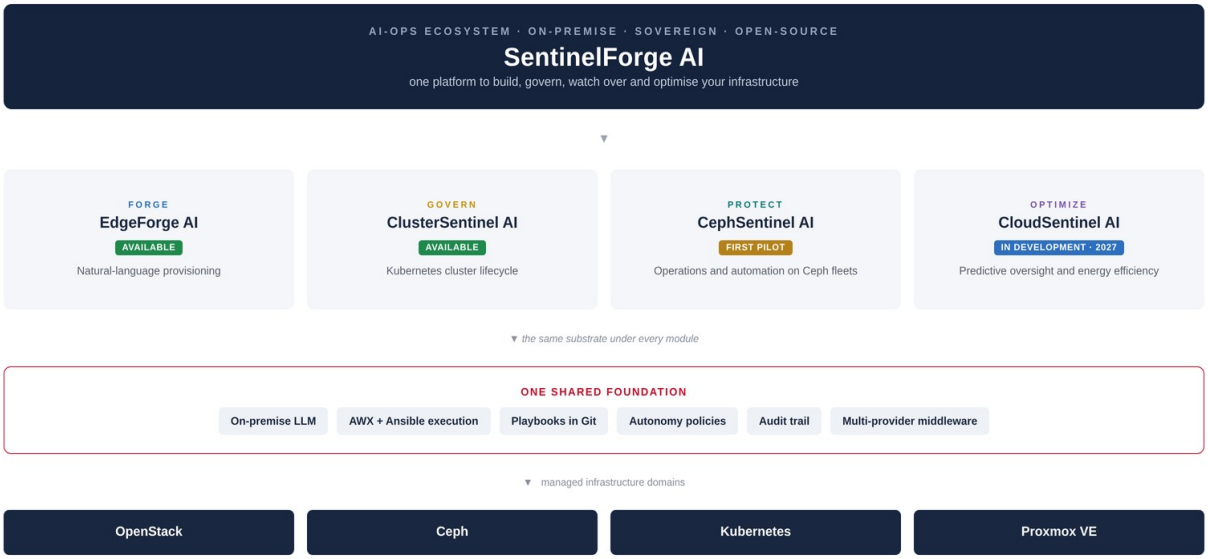
11. Why Epic Edge

Beyond the individual functions, the value of Epic Edge Cluster Manager for those who govern Kubernetes can be summarized in a few concrete points.

- **Governance in a single interface.** Creation, scaling, state protection, restore and upgrade of clusters without multiplying tools and skills.
- **No dependency on external AI.** The model stays within the perimeter: intelligent automation does not require exposing the clusters to non-European services.
- **Credentials within the perimeter.** The cluster credentials do not pass through the platform; irreversible operations are protected by an explicit confirmation.

- **Built on the real stack.** Kubernetes, OpenStack and Ceph in production: not a laboratory exercise, but an architecture conceived by those who have lived those constraints.

The Epic Edge ecosystem

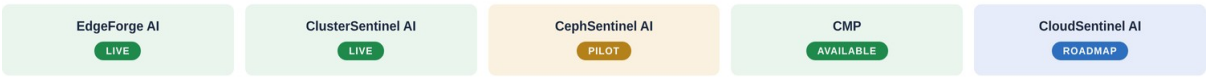


Epic Edge Cluster Manager is the interface of the ClusterSentinel AI module, one of the modules of SentinelForge AI: all on the same substrate — on-premise LLM, traced execution on AWX and Ansible, full audit and multi-provider middleware.

12. Epic Edge

Epic Edge S.r.l. is an Italian company specialized in the design, implementation and management of cloud infrastructures based on open source technologies. It operates in critical production environments for enterprise customers and service operators in Italy and in Europe, with specific expertise in open source cloud platforms, distributed storage, container orchestration and managed services with guaranteed service levels.

The company's positioning is centered on data sovereignty and technological independence: fully open source infrastructures, data in Italy and in the European Union, no contractual or technical lock-in that would hinder reversibility.



Epic Edge S.r.l.
www.epic-edge.it · info@epic-edge.it