EUROPEAN WEATHER CLOUD

9th European Weather Cloud User Workshop

SERVICE UPDATES

Container Registry · Managed Kubernetes

PRESENTED BY

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Container Registry

- GoHarbor instance
- CNCF graduated project
- Wide feature set covering EWC needs

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GoHarbor for EWC

EWC IAM, early access on demand now, and automatic onboarding after the Q1 2027 go-live

IDENTITY

EWC IAM integration

TENANCY ONBOARDING

Public and private projects

100Gb default quota

EARLY ACCESS

Available on demand

NOW — Q1 2027 · GO-LIVE

Early access continues until go-live

AFTER GO-LIVE

Tenancies are onboarded automatically

NEXT EWC WEBINAR

Registry coverage · November

REGISTRY https://registry.europeanweather.cloud

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EWC IAM to secure images

registry.europeanweather.cloud · identity, projects and security

01

IAM INTEGRATION

EWC IAM

Use the EWC identity provider to enter Harbor with your existing account.

02

PROJECT ACCESS

Open your projects

Browse the public and private projects available to your account.

03

PROJECT SECURITY

Scan and protect images

VULNERABILITY SCANS inspect images for known vulnerabilities

SCAN ON PUSH check new images automatically

PULL POLICIES block images at a chosen severity

NEXT EWC WEBINAR

Live GoHarbor walkthrough · November 2026

https://registry.europeanweather.cloud

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Managed Kubernetes covers the full cluster lifecycle

Users focus on workloads while the service manages clusters from creation to retirement

FULL LIFECYCLE MANAGEMENT

One managed experience across every stage

Provisioning, configuration and day-2 operations stay within the service boundary.

01	02	03	04	05
PROVISION	CONFIGURE	OPERATE	UPGRADE	RETIRE
Create the cluster	Apply guardrails	Monitor and maintain	Evolve safely	Decommission cleanly

USERS	**Define the desired cluster and deploy workloads**	SERVICE	**Handles lifecycle actions and operational continuity**

Service scope supplied by the EWC team

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Two managed Kubernetes pilots are running in parallel

ECMWF and EUMETSAT are validating different service stacks on a shared OpenStack foundation

RUNNING IN PARALLEL

ECMWF PILOT SERVICE

PILOT PHASE

Cluster API

OpenStack Magnum

Declarative cluster lifecycle and OpenStack-native orchestration

EUMETSAT PILOT SERVICE

PILOT PHASE

Kubermatic Kubernetes Platform

Managed Kubernetes service on OpenStack

SHARED OPENSTACK FOUNDATION

Both pilot services run on OpenStack

Architecture intent supplied by the EWC team

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EUMETSAT Kubernetes Service Status

Migrated to the new EUMETSAT Hybrid Cloud for EWC

Development complete

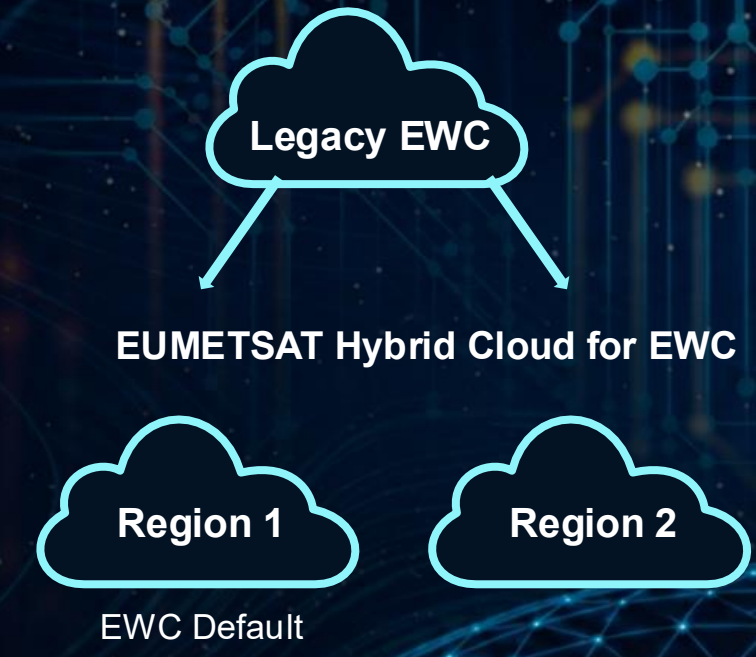
Lessons learned from the pilot incorporated

Platform migration complete

Two installations, one in each region of the new EUMETSAT Hybrid Cloud for EWC

Operational readiness underway

Following internal processes to prepare for operations



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Crossplane creates one cluster experience across both pilots

Users declare a Cluster once; the control plane drives the provider-specific path

01 EXPERIENCE

EWC users & automation — DECLARE ONCE ↓ · OBSERVE STATUS ↑

02 CONTROL

Unified control plane — Crossplane — VALIDATE · RECONCILE

03 RESOURCE

Cluster — **as a Crossplane resource** — DESIRED ↓ · OBSERVED ↑

OBSERVE

STATUS + HEALTH

COMPOSE + ROUTE

04 PROVIDERS

ECMWF

- Cluster API
- Magnum

EUMETSAT

- Kubermatic KKP

SHARED FOUNDATION

openstack

Both provider paths run on OpenStack

Provider details stay behind the API

Source: Crossplane documentation · Architecture intent supplied by the EWC team

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Two parallel components serve different control-plane needs

One empowers EWC users; the other gives cloud administrators operational control

EWC CONTROL PLANE

Parallel components · distinct audiences · complementary responsibilities

USER FACING

EWC users & automation

User-facing component

Self-service resource management

MANAGED BY USERS

- **Kubernetes clusters**
  Create and manage cluster resources through a unified interface.
- **Infrastructure resources**
  Manage additional cloud resources through the same experience.

MANAGEMENT

Cloud administrators

Management component

Administrative operations & access

MANAGED BY CLOUD ADMINS

- **User tenancies**
  Onboard and administer user tenancies across the EWC.
- **Access to services**
  Container Registry · Secrets Management Service · other ancillary services

OPERATING MODEL **Two components run side by side — neither depends on the other in the user journey**

Architecture clarification supplied by the EWC team

CROSSPLANE
× HARBOR

PRACTICAL WALKTHROUGH

How this looks like in practice?

Going through Crossplane Harbor project management

01 **Provider**

Reconcile Harbor resources

02 **Composition**

Turn tenancy intent into resources

03 **Conventions**

Standardise projects and access

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The Harbor Provider turns desired state into Harbor API actions

It owns the direct integration, reconciliation loop and low-level resource lifecycle

01 DESIRED STATE

Kubernetes resources describe what Harbor should look like

PROJECT · QUOTA · LABEL · USER GROUP

02 RECONCILE

Crossplane Harbor Provider

ProviderConfig · observe · create/update/delete · drift correction

API CALLS →

Harbor API

registry.europeanweather.cloud

03 FEEDBACK

Harbor returns the observed state; Crossplane keeps reconciling until it matches the declaration.

04 RESOURCES

PROJECTS

Create and configure registry projects

QUOTAS

Set storage limits per project

LABELS

Apply consistent project metadata

USER GROUPS

Bind groups to project roles

COMPOSE ONCE **Compose these primitives into services—users never call Harbor directly.**

Sources: Crossplane documentation · provider-harbor repository · EWC architecture intent

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One tenancy request expands into governed Harbor projects

A Crossplane Configuration package exposes one EWC API and uses a Composition to enforce conventions

01 REQUEST

Tenancy request

TENANT ID identity

QUOTA profile

GROUPS IAM mapping

LABELS metadata

02 CONFIGURATION

Configuration package

XRD Defines the tenancy API and accepted parameters

COMPOSITION Renders managed resources and patches values into them

Harbor resources

PROJECTS per tenancy

QUOTAS enforced limits

LABELS standard metadata

USER GROUPS role bindings

03 OUTPUT

TENANCY API → COMPOSITION RENDERS → PROVIDER RECONCILES → HARBOR APPLIES

04 CONVENTIONS

NAMING	QUOTAS	LABELS	GROUPS
tenant-{id}-*	approved profiles	owner · environment	IAM naming + roles

OPERATING MODEL **Update the Composition once; every tenancy follows the same conventions.**

Sources: Crossplane package and Composition documentation · EWC tenancy design supplied by the team

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GitOps makes dual approval the gate to every tenancy change

A pull request is reviewed by both management organisations before Crossplane applies it

01 SUBMIT

EWC cloud admins

Propose tenancy or management-resource changes

→ **Pull request · master repo**

Versioned desired state and review history

02 PROPAGATE

↓

THE SAME CHANGE PROPAGATES TO BOTH SIDES

03 APPROVE

Management organisation A

Review tenancy, quotas, groups and management resources

APPROVAL REQUIRED

Management organisation B

Review tenancy, quotas, groups and management resources

APPROVAL REQUIRED

04 APPLY

BOTH APPROVALS RECORDED → MERGE AND APPLY

↓

MASTER REPO → CROSSPLANE RECONCILES → RESOURCES CONVERGE

CONTROL POINT **Changes apply only after both management organisations approve.**

Operating model supplied by the EWC team

Questions & feedback

Help shape what comes next

What should we clarify, improve or explore next?

ASK

Questions about the services

SHARE

Feedback from your experience

SHAPE

Priorities for what comes next

Continue the conversation on the Community Hub

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Thank you

For your time, questions and feedback.

We look forward to continuing the conversation.