

OCF YellowDog Service Overview

High-Utilisation HPC at Any Scale

YellowDog is a cloud-native workload management platform designed to help organisations maximise the utilisation and sale of their compute resources across on-premises, cloud, and hybrid environments. By dynamically matching workloads to the most appropriate available compute, YellowDog enables customers to run HPC workloads at scale while reducing idle capacity, improving throughput, and optimising cost.

What YellowDog Does

YellowDog provides a single platform to:

- Provision and manage compute across on-premises and multiple cloud providers
- Schedule workloads based on application requirements rather than fixed infrastructure
- Dynamically scale resources to meet demand
- Supports highest throughput speeds at 40,000 tasks per second
- Improve overall cluster and cloud utilisation

The platform is designed for organisations where compute efficiency, high scale, and performance are critical.

Built for Maximum Compute Utilisation

Traditional HPC environments often suffer from under-utilisation due to static clusters and rigid scheduling. YellowDog addresses this by:

- Provisioning compute on demand, across regions and instance types
- Supporting mixed environments (on-premises, cloud, spot, on-demand, and reserved)
- Automatically scaling resources in response to workload demand
- Intelligently handling spot instance preemption by rescheduling and rebalancing workloads, ensuring work continues with minimal disruption
- Allowing multiple workloads to share capacity efficiently

High-Throughput Scheduling at Scale

YellowDog is designed for high-throughput HPC environments, capable of processing in excess of 40,000 workload transactions per second (TPS) while maintaining high levels of compute utilisation.

Key benefits include:

- Rapid scheduling and dispatch of large volumes of workloads
- Reduced queue times and faster job turnaround
- Efficient use of available capacity with minimal idle compute
- Scalable performance for bursty and unpredictable demand

Workload Management

- Native workload management with intelligent scheduling
- Integration with third-party schedulers and technologies
- Configurable auto-scaling strategies to maintain high utilisation

Data Management

- Transparent access to cloud object storage
- Support for high-performance storage technologies
- Integration with data import and export workflows

Single Control Plane

- Customers manage all environments through a single interface, providing:
- Centralised visibility of compute usage and consumption
- Control across projects, teams, and workloads
- Insight into utilisation trends and optimisation opportunities

This unified view supports better operational and financial decision-making.

Deployment Models

- YellowDog is available as:
- A fully managed SaaS platform
- A customer-hosted platform deployed on-premises or in the cloud

Both options deliver the same utilisation-focused capabilities, with deployment chosen to match customer requirements.

Security and Data Ownership

- All workloads and data remain within customer environments
- Secure authentication and encrypted credential management
- YellowDog does not access or store customer working data

Designed for Scalable HPC

- YellowDog is suited to organisations running:
- Large-scale or burst HPC workloads
- Variable or unpredictable demand
- Multi-cloud or hybrid compute strategies

The platform scales with customer needs while maintaining a consistent focus on compute efficiency and utilisation.