

# HyperSDK

## 31-View Dashboard Overview

A comprehensive React dashboard with 31 specialized views organized into 5 groups — Migration, Observability, Infrastructure, Core, and Tools — covering every aspect of VM management.

31 Views — 5 Groups — 45 Components — React 18 + TypeScript

# Dashboard **Navigation**

Five navigation groups organize 31 views for intuitive access.



## **Migration (12 views)**

VM browser, export workflows, upload/deploy, format conversion, provider management, cost estimation, and bulk operations.



## **Observability (8 views)**

System health, processes, containers, alerts, security, debug tools, kernel state, and explain mode.



## **Infrastructure (4 views)**

VM create wizard, snapshot manager, storage pool manager, and ISO manager.



## **Core (3 views)**

Main dashboard with stats, job monitoring table, and real-time log viewer.



## **Tools (5 views)**

Migration readiness checker, notification center, backup scheduler, manifest builder, and settings/configuration panel.

**31**

Total views

**5**

Navigation groups

**1-click**

Access to any view

# Migration Views

12 views covering the complete VM migration lifecycle.

#	View	Description
1	VM Browser	List all VMs with status, OS icons, CPU/memory, and quick actions (start, stop, export)
2	VM Console	VNC viewer with screenshot thumbnails and OS detection badges
3	vSphere Export	Step-by-step vSphere export workflow with CBT and parallel downloads
4	Upload Disk	Drag-and-drop disk image upload with 50 GB support and progress tracking
5	Deploy VM	Deploy VMs from uploaded disks with auto-config CPU/memory/network
6	Format Converter	Convert between qcow2, vmdk, vhd, vhdx, and raw formats
7	Provider Manager	Connect and manage 10 cloud providers with test-connection validation
8	Cost Estimator	Interactive cloud cost comparison with on-prem savings calculator
9	Carbon Scheduler	Carbon-aware migration scheduling with ESG compliance reporting
10	Bulk Operations	Multi-select VMs for batch export, shutdown, or snapshot
11	Migration History	Searchable job history with timing analytics and success rates



# Observability Views

8 views providing deep visibility into system state and performance.

#	View	Description
1	System Health	Composite 0-100 health score with CPU/memory/IO/network subsystem breakdown
2	Processes	Live process table with CPU/memory sort, process tree, and kill capability
3	Containers	Docker and Podman container status with start/stop/inspect/logs actions
4	Alerts	Multi-condition alert rules with duration triggers and severity routing
5	Security	SELinux, firewall rules, open ports, failed logins, and CVE exposure
6	Debug	Live top/iostat/vmstat/netstat in browser terminal, no SSH required
7	Kernel	Kernel version, modules, sysctl, dmesg, and NUMA topology
8	Explain	Natural language root-cause analysis: "Why is CPU high?" with recommendations

*"From a single dashboard, operators can see the health score, drill into bottlenecks, set alerts, and get automated explanations — all without opening a terminal."*

# Infrastructure + Core Views

7 views for VM creation, storage management, and operational dashboards.

## Infrastructure Views (4)

#	View	Description
1	VM Create Wizard	5-step wizard generating virt-install commands with OS-specific optimizations
2	Snapshot Manager	Create, revert, and delete VM snapshots with pre-migration safety snapshots
3	Storage Pool Manager	Libvirt pool listing with capacity bars, volume browser, and pool operations
4	ISO Manager	ISO library with virtio-win detection, hot-attach/detach to running VMs

## Core Views (3)

#	View	Description
1	Dashboard	Main overview with stat cards, active jobs, recent activity, and system status
2	Jobs Table	All migration/export jobs with progress bars, ETA, status badges, and cancel
3	Log Viewer	Terminal-style real-time log viewer with auto-scroll, search, and syntax coloring

# Tools Views

5 utility views for readiness, notifications, backups, manifests, and settings.



## Migration Readiness

17-point automated checklist verifying all dependencies (libvirt, qemu-img, virtio-win, KVM, etc.) with remediation guidance.



## Notification Center

In-app notification inbox with job completions, alert firings, and system events. Mark read, filter by type, bulk dismiss.



## Backup Scheduler

Visual cron builder for scheduling VM exports. Daily, weekly, or custom schedules with retention policies.



## Manifest Builder

Create OVF/OVA export manifests with VM metadata, hardware specs, and provider-specific configuration.



## Settings

Global configuration panel: API endpoint, authentication, default export format, notification channels, and theme preferences.

# Technical Stack

Modern frontend built for performance, maintainability, and developer experience.



## React 18

Latest React with concurrent features, Suspense boundaries, and automatic batching for smooth UI updates.



## Tailwind CSS

Utility-first CSS framework for consistent, responsive styling. Dark mode support. Custom HyperSDK design tokens.



## TypeScript

Full TypeScript coverage with strict mode. Type-safe API clients, component props, and state management.



## Vite Build

Sub-second hot module replacement during development. Optimized production builds with tree-shaking and code splitting.

**45**

React components

**13,655**


Lines of TypeScript

**31**

Dashboard views

**0**

External UI libraries



*"Every component is hand-crafted with Tailwind CSS — no Material UI, no Ant Design, no Bootstrap. The result is a lightweight, cohesive dashboard that loads in under 2 seconds."*

# Key Stats

The numbers behind the HyperSDK dashboard.

31

Dashboard views

170+

API endpoints

10

Cloud providers

17

Readiness checks

## Frontend

- 45 React components
- 13,655 lines of TypeScript
- 31 routable views
- WebSocket real-time updates
- Responsive down to tablet

## Backend

- 170+ REST API endpoints
- Hexagonal architecture
- 12 domain types, 13+ port interfaces
- PAM + JWT authentication
- Rate limiting and audit logging

## Providers

- vSphere (CBT, parallel download)
- AWS EC2, Azure, GCP
- Hyper-V, Proxmox, OpenStack
- OCI, Alibaba Cloud
- Local KVM/libvirt

## Operations

- Upload (50 GB, drag & drop)
- Export (OVF, OVA, VMDK, qcow2)
- Convert (6 format pairs)
- Deploy (virt-install)
- Backup (scheduled, incremental)

One Dashboard, Complete Control

31 views across 5 groups give your team everything they need to manage, migrate, monitor, and optimize your VM infrastructure.

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