# Pextra CloudEnvironment®

Private Cloud Management, Simplified.

Pextra CloudEnvironment® is a next-generation private cloud platform that seamlessly integrates compute, storage, networking, and security into a single, scalable solution. Our software-defined infrastructure simplifies operations, reduces costs, and empowers organizations with complete control over their resources. Built on robust open-source technologies, including the Debian GNU/Linux operating system, KVM/QEMU, LXC for virtualization, leading enterprise storage solutions, and Open vSwitch for software-defined networking, Pextra ensures reliability and performance. Unlock extensive multi-datacenter scalability with our distributed architecture, powered by CockroachDB. Features such as GPU passthrough, multi-instance GPU (MIG), and paravirtualization enable efficient processing for demanding AI applications. Pextra features a modern API for easy integration with existing systems, along with a high-throughput metrics and monitoring stack, allowing organizations to track performance, resource utilization, and more.

42%

of organizations plan to include an element of private cloud in their primary cloud strategy. Private and hybrid clouds are key enablers of multiple enterprise cloud strategies.
- The 2025 State of Cloud Report, Rackspace

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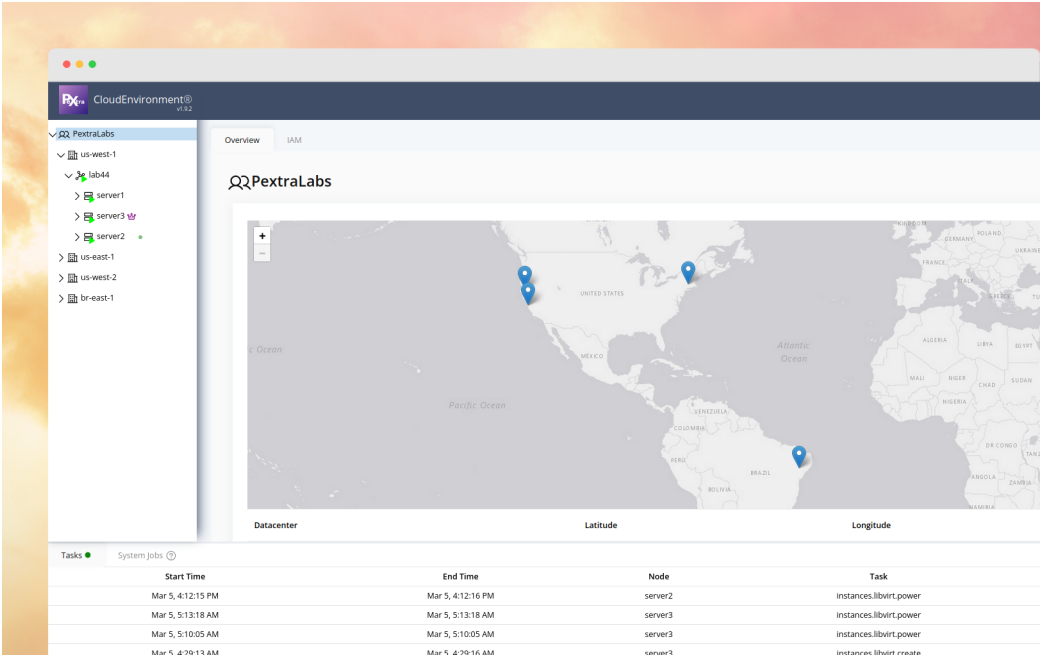
Enterprise Virtualization

- Securely run workloads in full QEMU/KVM virtual machines
- Supports most 32 or 64-bit operating systems, including, Windows, Linux, MacOS, BSD
- Run lightweight Linux (LXC) containers with near-zero overhead, sharing the host kernel
- Minimal overhead compared to bare-metal with an optimized virtualization stack
- Manage small-scale clusters to larger multi-site deployments from a single interface

AI-Ready Features

- Direct GPU passthrough to virtual machines
- Multi-Instance GPU (MIG) and vGPU supported with NVIDIA GRID
- Seamlessly scale horizontally by adding GPU-enabled nodes

Software-Defined Storage

- Cluster-level configuration
- Local storage support: directory-based, ZFS, and LVM
- Networked storage support: NFS, CIFS/SMB, iSCSI, and Ceph RBD
- Native at-rest encryption support
- Live volume resizing

Device Passthrough & Emulation

- Passthrough of paravirtualized and emulated devices
- Supports input devices, network interfaces, block devices, and more
- Hot-plug support for applicable device types
- USB and PCI passthrough for direct hardware access

Scalable Clusters

- Fault-tolerant, multi-node clusters with no single point of failure (Raft consensus)
- Real-time, consistent configuration synchronization across all nodes
- Add new nodes without disrupting running workloads
- Cluster-aware storage and network configuration

Software-Defined Networking

- Create and manage virtual switches
- Full IPv4 and IPv6 support
- Port groups for isolation of traffic using VLANs and trunking
- Multiple uplinks for fault tolerance

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Backup & Replication

- Integrated point-in-time instance backups
- Asynchronous incremental instance replication
- In-transit encryption support for replication
- Schedule backup and replication jobs with a cron interval

Metrics & Monitoring

- Centralized dashboard with performance metrics
- Historical aggregated resource usage trends for capacity planning
- Easily stream to external systems in real-time

Enterprise-Grade Security

- Comprehensive ABAC/RBAC authorization system
- Support for multiple authentication providers and OpenID SSO
- Two-factor authentication (TOTP)
- Secure Boot and TPM support
- Sealed audit logging
- Support for restricted/fully air-gapped environments

Extensive Hardware Support

- Compatible with the latest Intel® and AMD® processors
- Broad compatibility with server-class hardware
- Wide range of GPUs, storage devices, and network adapters supported
- Maximize infrastructure investments with extended hardware lifecycle support
- Supported on non-enterprise (commodity) hardware

Reduced Costs

- Licenses and subscriptions fully self-managed at portal.pextra.cloud
- Reduced long-term TCO compared to other solutions, no hidden costs
- Reduced reliance on separate paid tools with included features
- Discount on licenses and technical support subscriptions available for academia and non-profits

Open-Source Foundations

- Built on the reliable Debian GNU/Linux operating system
- Leverages battle-tested, open-source technologies for storage and networking
- Minimal vendor lock-in

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Simple to Learn & Manage

- Streamlined installer experience
- Built-in web-based interface with intuitive workflow
- Integrated web-based VNC and text consoles for direct instance administration
- Configuration wizards for common tasks
- Extensive, visual documentation and user guide
- Local mirror of documentation for offline access
- CLI for advanced users and scripting
- Seamless, efficient system upgrades

Effortless API Integration

- Extensive API for automation and integration
- Modern, comprehensive Scalar API documentation
- Fully-declarative OpenAPI v3 schema with built-in validation
- Ready to integrate with third-party orchestration, backup, and monitoring systems

Community Edition

- Community Edition licenses at portal.pextra.cloud
- Completely free for homelabs and personal use
- Community support forum available at forum.pextra.cloud

Technical Support

- Service-level agreements (SLAs) with ticketing via helpdesk.pextra.cloud
- Email support at support@pextra.cloud

Get Started

- **Free evaluation license:** Visit www.pextra.cloud and click on *Get Started*.
- **Learn the platform:** Visit docs.pextra.cloud for the user guide—no prior experience needed.
- **Contact us:** Visit www.pextra.cloud/contact-sales, or email sales@pextra.cloud.
- **Purchase:** Visit portal.pextra.cloud to purchase licenses and technical support subscriptions

Help & Support

- **Technical support (SLA):** Visit helpdesk.pextra.cloud to file and track tickets, or email support@pextra.cloud
- **Community support:** Visit forum.pextra.cloud

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