cubeCMP
by Bigstack

Simplifying Hybrid Cloud Adoption

cubeCMP

Product Overview

CubeCMP is a unified cloud management platform for private cloud, public cloud, and Kubernetes environments. It gives infrastructure teams a central portal for IT self-service, resource governance, tenant management, and cost control, helping enterprises and service providers deliver cloud resources with less operational friction.

Unify cloud operations without giving up control

Infrastructure teams are expected to support private cloud, public cloud, and container platforms while keeping costs, access, and service levels under control. When each environment is managed separately, teams face resource silos, duplicated workflows, and unclear spending. CubeCMP brings these environments into one management experience, so teams can standardize service delivery, automate routine provisioning, and govern resources across tenants from a single operational model.

CubeCMP Benefits

1. Unified Hybrid Cloud Management: Manage on-premises infrastructure, public cloud services, and Kubernetes clusters from one platform.
2. IT Self-Service: Let users request and provision approved resources within quota, reducing routine ticket work for IT teams.
3. Comprehensive Cost Control: Use billing, budget alerts, and usage visibility to understand consumption by tenant, service, and project.
4. Multi-Tenant Architecture: Support separated tenant environments for enterprise departments, service providers, and telecom cloud use cases.
5. Reduced Operational Complexity: Automate lifecycle management, scaling, and routine workflows so teams can focus on higher-value work.

Streamline hybrid cloud management by automating tasks, intelligently allocating resources, and seamlessly integrating with your existing on-premises infrastructure.

Modernize private and hybrid cloud operations with Bigstack.
Improve resource governance, reduce ticket-driven work, and give teams a controlled path to self-service cloud operations.

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Features

IT-Self Service

1. **Self-Service Resource Management:** Users manage approved resources within assigned quotas without opening routine support tickets.
2. **Auto-scaling**: Allocate and release resources automatically as workload demand changes.
3. **Just-in-time provisioning:** Provision resources on demand so capacity is used when it is needed.
4. **Real-time visibility:** Give administrators current views of resource utilization, allocation, and performance.
5. **Task automation:** Automate routine provisioning and deprovisioning to reduce repetitive operational work.
6. **Custom branding:** Customize the platform with your organization's logos, colors, and content for different user groups.

Hybrid Cloud Management

1. Manage resources across CubeCOS environments and AWS tenants from one portal.
2. Connect AWS VPCs with on-premises resources to support hybrid workload operations.
3. Apply firewall policies for dynamic IP management, traffic shaping, access control, and threat mitigation.
4. Operate on-premises or public cloud Kubernetes clusters with dynamic node management and load balancer allowlisting.
5. Identify underused instances and adjust allocation to reduce waste.
6. Give users self-service access while maintaining controls for service levels, SLAs, and compliance requirements.

Cost Governance

1. Use templates to define and optimize cost profiles for services.
2. Automate monthly billing and invoicing with tenant-level cost visibility.
3. View usage by tenant, service, and project to support cost optimization.
4. Receive budget alerts before spending exceeds allocated limits.

Bigstack offers a wide array of professional services for every phase of your software-defined infrastructure. These services enable enterprises to leverage open cloud innovations while significantly reducing complexity and risk.

Services include

- Architecture planning
- Quick deployment
- Knowledge transfer
- Technical support

5. Monitor real-time utilization so teams can manage active resources and spending.
6. Review resource cost estimates before provisioning to plan budgets more accurately.

X-as-a-Service

Instance-as-a-Service

1. Create instance templates with defined CPU, memory, disk, and storage options.
2. Allocate physical or virtual GPU resources for VDI and AI workloads.
3. Offer approved operating system images, including Windows and Linux.
4. Adjust instance resources dynamically to support workload stability.
5. Select storage media based on workload I/O requirements.
6. Schedule snapshots and restore points for instance protection.
7. Track instance activity with audit logs and performance monitoring.
8. Export or clone instances to local storage or offsite backup targets.
9. Provision specialized instances from snapshots or backups.

Application-as-a-Service

1. Deploy application stacks for demanding enterprise workloads.
2. Provide on-demand GPU services for cross-tenant applications.
3. Use customizable templates and version control for application services.
4. Configure application deployment with environment variables and service-specific settings.
5. Match application services with disk types that fit their I/O needs.
6. Publish application services through load balancers or floating IPs protected by custom allowlists.

Kubernetes-as -a-Service

1. Provision, manage, and control Kubernetes clusters from a central interface.
2. Support multiple cluster versions for upgrade testing and separate development, test, and production environments.
3. Reduce Kubernetes infrastructure complexity so teams can ship software faster.
4. View CPU, disk, memory, and storage usage across the infrastructure.
5. Integrate with version control and CI/CD tools to support DevSecOps workflows.

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6. Use granular RBAC to control access, strengthen cluster security, and support compliance requirements.

File-as-a-Service (FSaaS)

1. Mount FSaaS as dedicated storage to support scalable data access and reduce the impact of instance failures.
2. Separate data access by tenant, user, or department to support security and compliance requirements.
3. Integrate FSaaS with cloud-native applications, container platforms, and instance storage use cases.
4. Support multiple operating systems and platforms to improve data portability.
5. Scale to high concurrency with hardware-backed scale-out capabilities.

Images-as-a-Service

1. Use dynamic volume attachment for storage changes, snapshot creation, and disk state preservation.
2. Back up instance disks and attached images with snapshot or backup functions.
3. Restore one or more instances from backups or snapshot images.

Network and Network Security

1. Provide overlay networking to isolate tenant networks.
2. Create floating IP addresses dynamically for external services, with reserved addresses assignable to instances or load balancers.
3. Use network micro-segmentation to define zero-trust policies and strengthen tenant security.
4. Highly flexible Layer 4 load balancers are provided that can be managed separately by service type. The use of certificates to provide external website services is supported, and access lists can be customized based on services to enhance access security.
5. Apply Kubernetes application allowlists so only authorized users can access critical resources.
6. Use SDN and tenant firewalls to monitor traffic, control outbound access, and reduce the spread of network threats.
7. Apply firewall rules to virtual machines, virtual network interfaces, private networks, or ASG groups.

8. Manage inbound and outbound firewall traffic with defined access rules.

Network Function Virtualization (NFV)

1. Allocate and manage a spine network with isolated control across multiple projects.
2. Connect spine and internal networks through virtual routers for cross-subnet communication and traffic control.
3. Configure independent virtual network environments for each workload to improve flexibility and resource efficiency.

Operation Management

1. Integrate Active Directory through LDAP, SAML2, OpenID, IAM, and SSO, with support for multi-factor authentication.
2. Set user- or tenant-level quotas for compute, storage, and network resources.
3. Create tenants in a single setup flow with immediate quota assignment.
4. Administrators can adjust when resources are insufficient with real-time and historical overviews of tenant resources and usage alert notifications.
5. Customize tenant user roles, including Cloud Admin, Tenant Admin, and Tenant User, to align access with responsibilities.
6. Use key management controls to support data isolation and key security in multi-tenant environments.
7. Import existing OpenStack project resources to simplify integration.
8. The internationalized interface supports English and Traditional Chinese.

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Learn More

Product overview: https://www.bigstack.co/products/cubecmp/overview

Product features: https://www.bigstack.co/products/cubecmp/feature

Documentation: https://docs.bigstack.co/docs/cubecmp/getting-started/overview

Assistance and Support

Sales contact: https://www.bigstack.co/contact-form/sales

Community channel: https://www.bigstack.co/community

Discussion space：https://github.com/bigstack-oss/cubecos/discussions

Empowered infrastructure with simplicity.

Bigstack Co., Ltd. builds open-source cloud infrastructure for software-defined data centers, private clouds and sovereign carrier cloud environments. We assist enterprises and service providers in deploying Cube cloud platforms featuring self-service operations, API automation and enterprise support.

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