# PCE Glossary

**Public Cloud Enablement (PCE)**

**Public Cloud Enablement (PCE) PCE: Meeting Minutes PCE: Risks, Issues & Dependencies PCE: Task List PCE: Operations PCE: User Documentation**

Glossary

Akamai Acronym Glossary

AWS Glossary

Microsoft Azure Glossary

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## A

**AB:** AppBattery

**Akamai Classic:** The part of the Akamai platform that is managed by Installsuite and running on ALSI.

**Akamai Cloud Computing Services:** Akamai's cloud offerings, formerly Linode.

**Akamai Connected Cloud:** Akamai's massively distributed edge and cloud platform for computing, security, and content delivery that keeps applications and experiences closer and threats further away. The Akamai Connected Cloud combines our edge content delivery, security and Cloud Computing Services into one platform.

**Akamai Network:** The globally distributed physical infrastructure on which the Akamai platform is deployed.

**Akamai Platform:** The combination of physical infrastructure and software services on which Akamai deploys products.

**AppBattery:** A service that deploys and runs applications at Akamai on the "Akamai Classic" networks, such as ESSL and FreeForm.  Its aim is to simplify web application development at Akamai so that developers can focus on their application code and not the integration, deployment, and monitoring work that would normally be required.

## B

## C

**CAPLKE:** In the Akamai Connected Cloud, the CPC component used for provisioning child cluster nodes and cluster objects. Provides logging that we can investigate when troubleshooting LKE issues.

**Certificate Chain:** An ordered list of certificates that contains an SSL Certificate and Certificate Authority (CA) Certificates. It enables a receiver to verify that the sender and all CA's are trustworthy. The chain or path begins with the SSL certificate and each certificate in the chain is signed by the entity identified by the next certificate in the chain.

**Chain of Custody:** A term of art, analogous to its usage with respect to evidence in a legal setting, meaning a set of controls designed to prevent tampering with an artifact, and a set of related auditing steps that can be used to verify authenticity. That typically means being able to cryptographically confirm an artifact's authenticity as it moves from system to system, and to be able to verify (via logs, and ideally via manual replication of steps) that outputs resulted from authorized transformations of authentic inputs. This process should be recursively applicable up to chosen trust anchors, which are defined by policy.

**Cirrus:** A top-priority, cross-functional effort to migrate Akamai's workloads from current third party cloud providers to Akamai's Cloud Computing Services to inform our cloud go-to-market strategy and drive cost savings.

**Container:** A lightweight and self-contained environment that contains a piece of software and all of the necessary dependencies. Containerization software such as Docker is often used along with Kubernetes.

**Cluster:** A collection of worker nodes that run containerized applications. Each cluster has at least one node or node pool. Clusters allow you to split your node pools into different configurations.

**Collection:** A named set of definitions that share the same access controls. Every definition belongs to a collection. All access control decisions are made at the collection level unless definition level controls are specified.

**Control Plane Cluster:** The managed portion of LKE and includes an API, scheduler, etcd, and other resource controllers.

**CPC:** Control Plane Cluster

## D

**Definition:** Applies to KMI secrets. The name and associated configuration options that describe a secret for a particular purpose. Every secret belongs to a definition. A definition can contain multiple secrets as newer versions become available.

## E

**etcd:** Consistent and highly-available open source key value store used as Kubernetes' backing store for all cluster data.

## F

**FaaS:** Function as a Service. See "Serverless".

## G

## H

**Host:** Refers to an Akamai host publishing metrics and may be a physical machine, VM, or container.

## I

**IaaS:** Infrastructure-as-a-Service

**Identity Credential:** A credential that asserts a KMI identity and workload instance attributes to the Secret Server, the relying party in this design.

**Identity Projection:** Maps verifiable attributes of a workload instance to a deterministic identity in KMI. Used to issue identity credentials to workload instances.

**Ingress Controller:** An object that sits on the edge of a cluster and manages external access to services within the cluster. Ingress controller can handle SSL termination, load balancing, and name-based virtual hosting. LKE uses a node balancer for load balancing.

**Instance:** A single instantiation of a workload running on infrastructure supporting a workload. Also called a VM instance, kubernetes pod, and serverless invocation.

**Iptables:** A rule based firewall commonly used in Linux.

## J

**Job:** In Kubernetes, a controller for a batch workload.

**JSON Output Format:** JavaScript Object Notation. Open standard file format and data interchange format that uses human-readable text to store and transmit data objects consisting of attribute–value pairs and array data types (or any other serializable value).

**JSON Web Token:** Standard method for representing claims between two parties.

**JWT:** JSON Web Token

## K

**K8s:** A commonly used abbreviation for Kubernetes.

**Key Management Infrastructure:** Akamai's standard system for generating, storing, distributing, and rotating secrets. Examples of secrets managed by KMI include SSH keys, SSL certificates, GPG identities, and symmetric keys.

**KMI:** Key Management Infrastructure

**Kubectl:** A command line tool, used to manage Kubernetes clusters.

**Kubernetes:** A container-orchestration system that allows users to deploy, manage, and scale containerized workloads.

## L

**Linode Kubernetes Engine:** Helps simplify Kubernetes by providing a fully managed Control Plane Cluster (CPC) that is integrated with the entire Linode / Akamai Connected Cloud platform. LKE removes many the headaches associated with managing a CPC.

**LKE:** Linode Kubernetes Engine

## M

**Machine:** A server instance running an operating system. Depending on context, this may be either a physical server (“iron”) or virtual. In Akamai Classic, this is the unit of service management, role assignment, and software installation (and while also called a “host” or “server”, “machine” is the most common term).

**MDT:** Metadata Transport System

**Metadata:** Content that is used to control how Akamai servers perform their tasks.

**Metadata Transport System:** A system that distributes metadata to the Akamai networks. MDT is a publish-subscribe system, which means that publishers don’t send metadata files directly to specific receivers. Instead, publishers submit files to MDT and MDT sends those files to the subscribers.

## N

**Namespace:** In both Kubernetes and Linux, a namespace is a top-level object enabling partitioning of resources and access controls. In Kubernetes, namespaces are used to separate multiple tenants of a single cluster, enabling multiple applications to safely run on the same cluster, within some security constraints. In Linux, namespaces are used to separate multiple tenants of a single kernel, enabling the container abstraction that provides basic resource isolation and interface customization enabling multiple applications to easily and safely run in the same kernel space, within some security constraints.

**Node:** Also called a worker node. In Linode / the Akamai Connected Cloud, these are the individual Linodes that make up a node pool and run inside the cluster.

**Node Pool:** A collection of one or more individual nodes that share the same configuration and Cluster.

## O

**Orchestration:** The automated arrangement, coordination, and management of software services in a cloud environment.

## P

**PaaS:** Platform as a Service

**PCE:** Public Cloud Enablement

**Persistent Volume:** A filesystem that gets attached to a cluster and is used to preserve data across container restarts. LKE uses block storage volumes for this.

**Platform as a Service:** The set of software capabilities that enable one to focus on the deployment and management of applications and business logic for products.

**Pod:** A collection of one or more containers that share the same resources and local network. Customer-defined pods run inside worker nodes and pods running control plane services run in the CPC.

**Primary Node:** Nodes where writes are accepted. Replica nodes replicate from the primary node.

**Project Cirrus:** A top-priority, cross-functional effort to migrate Akamai’s workloads from current third party cloud providers to Linode to inform our cloud go-to-market strategy and drive cost savings.

**Public Cloud Enablement:** A program that provides a standardized and compliant (PCI-DSS, SOC2, FedRAMP, etc.) integration path for products and services running in Linode, Azure, and AWS public cloud environments to easily, securely, rapidly, and seamlessly interact with the Akamai Platform.

## Q

## R

## S

**Secret:** Any piece of data managed by KMI. A secret can contain multiple parts, some of which are actually public (for example, a certificate in a ssl_cert). Secrets can be generated automatically within KMI or generated elsewhere and provisioned into KMI.

**Service:** Functionality exposed to clients by an application via a network interface. “ESSL CDN” is an example of this kind of service. Services are almost always realm-specific and have admission controls in production-grade realms. Also used to describe a workload (service workload) or instance (service instance) that exposes such functionality. Service is an overloaded term, so where the precise meaning is not clear from context, a more specific term should be employed.

**Service Instance:** Single pod in a distributed service that by itself can support a subset of a service’s clients, for example, via load balancing.

**Serverless:** A programming paradigm for cloud services where workloads are run without local state or reliance on persistent Service Instances, allowing resources and capacity to be scaled up and down dynamically.  Also called “Function as a Service” (FaaS) or “Lamba Services”.

## T

**Tenancy:** Represents a single unified business process (or a reasonable grouping thereof), composed of multiple tenants (human or systemic actors) arranged into coupled services. Each tenancy is provided a Kubernetes namespace within a given cluster.

**Tenant:** A set of related applications, typically supported by a single organization, or an actor (human or process) within a particular tenancy.

## U

**UMP:** Universal Metadata Pusher

**Universal Metadata Pusher:** A platform for protecting the network from invalid metadata configuration. The role of UMP is to:

- Act as a gatekeeper for the Metadata Transport (MDT) system. Rather than submitting content directly to a MDT channel, the publisher submits it to UMP, which in turn submits it to MDT.
- Run safety checks to validate the metadata content before submitting it to MDT.
- Support channels that submit metadata to systems other than MDT.
- Monitor the network after submitting the metadata.
- Provide a platform for running channel-specific code.
- Detect errors and prevent them from reaching the entire network.
- Inform channel administrators about errors and how to deal with them.

## V

## W

**Worker Node:** In the Akamai Connected Cloud, these are the individual Linodes that make up a node pool and run inside the cluster.

**Workload:** An application typically limited to one or a few functions that can be instantiated as one or more interchangeable kubernetes pods, virtual machines, or serverless invocations. A workload is a class, not an instance.

## X

**X.509:** A standard format for public key certificates, digital documents that securely associate cryptographic key pairs with identities such as websites, individuals, or organizations. Common applications of X.509 certificates include:

- SSL/TLS and HTTPS for authenticated and encrypted web browsing
- Signed and encrypted email via the S/MIME protocol
- Code signing
- Document signing
- Client authentication
- Government-issued electronic ID

## Y

**YAML:** A data serialization language used to build configuration files for Kubernetes deployments. Stands for “Yet Another Markup Language” or “YAML Aint Markup Language” depending on whom you ask.

## Z