
MarkLogic Server

Glossary, Copyright, and Support

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Glossary, Copyright, and Support

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1.0 Glossary

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A

Access Control

Security. Restricting access based on something other than the identity of the [user](#). See [permission](#), [amp](#), [authentication](#), and [Access Control List \(ACL\)](#). See also [Authentication and Access Control](#) the *Understanding and Using Security Guide*.

Access Control List (ACL)

Security. A list of [permissions](#) attached to an [object](#). The ACL specifies who or what can access an object, or what operations are allowed on that object. See [Access Control](#).

ACID (properties)

Database. Atomicity (a set of changes either takes place as a whole or doesn't take place at all), Consistency (system rules are enforced, such as that no two documents should have the same identifier), Isolation (uncompleted transactions are not otherwise visible), and Durability (once a commit is made it will not be lost).

active data

MarkLogic. Data that requires low-latency queries and updates. The 'activeness' of a particular [document](#) is typically determined by its recency and thus changes over time. See [archived data](#).

aggregate

Marklogic. XML content that includes recurring element names and which can be split into multiple documents with the recurring element as the document root. For more information, see [Splitting Large XML Files Into Multiple Documents](#) in the *mlcp User Guide*.

aggregate function

MarkLogic. Used for tasks like computing a sum or count over an element, attribute, or field [range index](#), or many of these range indexes. Aggregate functions are most useful for analytics that produce a small number of results, such as computing a single numeric value across a set of range index values. See [Introduction to Aggregate Functions](#) in the *Search Developer's Guide*.

alerts

MarkLogic. An alerting application is used to notify users when new content is available that matches a predefined (and usually stored) query. An alert is based on a [reverse query](#). Alerts are used with [QBFR \(Query-Based Flexible Replication\)](#). See [Configuring Alerting With Flexible Replication](#) in the *Flexible Replication Guide*.

Amazon Machine Image (AMI)

Cloud. An encrypted machine image that contains all information necessary to boot instances of software. Instances of [MarkLogic Server](#) are created from the stock Amazon Linux AMI and have been pre-installed with MarkLogic and the necessary dependencies. A virtual appliance for use with Amazon's [Elastic Compute Cloud \(EC2\)](#).

Amazon Web Services (AWS)

Cloud. The Amazon Cloud Computing service. For details, see <http://aws.amazon.com/>.

amp

MarkLogic. An amp provides a [user](#) with the additional [authorization](#) to execute a specific function by temporarily giving the user additional [roles](#). For details on amps, see [Temporarily Increasing Privileges with Amps](#) in the *Understanding and Using Security Guide*.

archive

MarkLogic. A compressed [MarkLogic Server](#) database archive created using the mlcp export command. You can use an archive to restore or copy database content and metadata with the mlcp import command. For details, see [Exporting to an Archive](#) in the *mlcp User Guide*.

archived data

MarkLogic. Data that has aged beyond its useful life in the online storage tiers and is typically taken offline. See [active data](#).

asserted triples

Semantics. In a system that does inference, asserted triples are those triples that are in the database before inferencing, as opposed to inferred triples which are the result of the inferencing process. See [inference](#), [inferred triples](#), [ontology triples](#), and [triple](#).

asynchronous

General. Asynchronous I/O, or non-blocking I/O is a form of input/output processing that permits other processing to continue before the transmission has finished. See [synchronous](#).

Asynchronous Replication

Flexible Replication. A configuration in which the [Master](#) does not wait for confirmation that the update has been received by the [Replica](#) before committing the transaction and proceeding with additional transactions. [Flexible Replication](#) and [database replication](#) are [asynchronous](#).

Attribute-Based Control (ABAC)

Security. A form of security based on attributes assigned to a [role](#) or object. ABAC is a logical access control model that controls access to objects by evaluating rules against the attributes of the entities (subject and object) actions and the environment associated with a request. See [MarkLogic Security Model](#) in the *Understanding and Using Security Guide*.

authentication

Security. The process of verifying user credentials for a named [user](#), usually based on a username and password. Authentication generally verifies user credentials and associates a session with the authenticated user. It does not grant any access or authority to perform any actions on the system. Authentication can be done internally inside [MarkLogic Server](#), or externally by means of a [Kerberos](#) or LDAP server.

authorization

Security. The process of allowing a [user](#) to perform some action, such as create, read, update, or delete a document or execute a program, based on the user's identity. Authorization defines what an authenticated user is allowed to do on the server. When an App Server is configured for external authentication, authorization can be done either by [MarkLogic Server](#) or by LDAP.

auxiliary databases

MarkLogic. The default databases that are created during the installation process: Security, Modules, Documents, Schemas, Triggers, and Last-Login.

availability of a partition or forest

MarkLogic. Refers to the online or offline status of a partition or forest.

B

backward-chaining inference

Semantics. Backward chaining [inference](#) is inference done at query time; each query looks at the [ontology](#) and expands the query appropriately. Backward chaining inference is more resource intensive at query time, but less costly during ingestion and indexing. See also [forward-chaining inference](#) and [inference](#).

bitemporal

MarkLogic. Bitemporal documents are associated with both a [valid time](#) and a [system time](#). Data in a bitemporal format provides the user with a complete history (audit trail) of data in the database. For more information, see [Understanding Temporal Documents](#) in the *Temporal Developer's Guide*. See also [non-temporal](#).

blank node

Semantics. (also known as a [bnode](#) or anonymous resource) A subject or object in an [RDF graph](#) that has no [IRI \(Internationalized Resource Identifier\)](#) or resource identifier. Typically used to group together other values for a triple. A blank node is represented by a prefixed name with an underscore prefix (`_:mytriple`). See [bnode](#).

bnode

Semantics. A node in an [RDF graph](#) representing a resource for which an [IRI \(Internationalized Resource Identifier\)](#) or literal is not provided. This term can be used interchangeably with [blank node](#).

BLOB (Binary Large Object)

Database. Binary data stored as a single entity. Typically BLOBs are images, audio, or other multimedia objects.

BNF (Backus Normal Form or Backus–Naur Form)

General. A notation technique for context-free grammars, often used to describe the syntax of languages used in computing.

Bootstrap Host

MarkLogic. A [MarkLogic Server](#) host machine used by a foreign cluster to initiate communication with the local cluster.

built-in

MarkLogic. A built-in function (or main [module](#)) is one that can be called without using “import module” in XQuery or JavaScript. MarkLogic built-ins are accessed through [XQuery](#) or [JavaScript](#). See [module](#).

C**capabilities**

MarkLogic. The permissions set on a [document](#) define access to capabilities for that document. Capabilities include read, insert, update, and execute. Each [permission](#) consists of a capability and a [role](#). See [permission](#).

CBD (Concise Bounded Definition)

Semantics. The Concise Bounded Definition (CBD) specification is used to describe one or more nodes in the [RDF graph](#) as a resource. See the W3C specification: <http://www.w3.org/Submission/CBD/>. See also `sem:describe`.

CDH (Cloudera Distribution Hadoop)

Hadoop. Cloudera's Distribution Including Apache Hadoop, an open source data management platform based on Apache Hadoop. One of the Hadoop distributions supported by the MarkLogic Connector for Hadoop. See the *MarkLogic Connector for Hadoop Developer's Guide*.

CentOS

Linux. A community-supported, free and open source operating system based on Red Hat Enterprise Linux.

CEP (Complex Event Processing)

MarkLogic. Complex event processing combines data from multiple sources in its tracking and analysis of streams of information about events, and uses that information to infer events or patterns that may suggest more complicated circumstances. The goal of complex event processing is to quickly identify and respond to meaningful events.

certificate authority (CA)

Security. A trusted third party that certifies the identity of entities, such as users, databases, administrators, clients, and servers. When an entity requests certification, the CA verifies its identity and grants a certificate, which is signed with the CA's private key. If the CA is trusted, then any certificate it issues is trusted unless it has been revoked.

certificate or public key certificate

Security. An electronic document that incorporates a digital signature to bind together a public key with identity information, such as the name of a person or an organization, address, and so on. The certificate can be used to verify that a public key belongs to an individual or organization.

certificate request

Security. A request data structure containing a subset of the information that will ultimately end up in the certificate. A certificate request is sent to a certificate authority for certification.

certificate template

Security. A MarkLogic construct that is used to generate certificate requests for the various hosts in a cluster. The template defines the name of the certificate, a description, and identity information about the owner of the certificate.

cipher

Security. An algorithm for encrypting information so that it's only readable by someone with a key. A cipher can be either symmetric and asymmetric. Symmetric ciphers use the same key for both encryption and decryption. Asymmetric ciphers use a public and private key.

CLOB (Character Large Object)

Database. Large text document.

Cloud Formation (CF)

Cloud. The AWS Cloud Formation service for provisioning startup of AWS resources. For details, see [Deploying MarkLogic on EC2 Using CloudFormation](#) in the *MarkLogic Server on Amazon EC2 Guide* and <http://aws.amazon.com/cloudformation/>. MarkLogic CloudFormation templates are available from <http://developer.marklogic.com/products/aws>.

cluster

MarkLogic. Multiple instances of [MarkLogic Server](#) configured to run as a cluster. The cluster has multiple machines ([hosts](#)), each running an instance of MarkLogic Server. Each host in a cluster is sometimes called a [node](#). Each node in the cluster has its own copy of all of the configuration information for the entire cluster.

collection

MarkLogic. A collection is a group of documents that enable queries to efficiently target subsets of content within [MarkLogic Server](#). Collections are described as part of the W3C XQuery specification, but their implementation is undefined. MarkLogic has chosen to emphasize collections as a powerful and high-performance mechanism for selecting sets of documents against which queries can be processed. See in [Collections](#) in the *Search Developer's Guide* for more information about collections.

collection lexicon

MarkLogic. A list of unique words or values, from either an entire database (words only) or from within named elements or attributes (words or values). You can also define lexicons that allow quick access to the document and collection URIs in the database, and you can create word lexicons on named fields. See [Browsing With Lexicons](#) in the *Search Developer's Guide*.

column

MarkLogic. A SQL view has a name and a [range index](#) reference that identifies a particular [document](#) element or attribute. The range index for each column must be created before creating the view.

commit

Database. To end a [transaction](#) and make the changes made by the transaction visible in the database. Single-statement transactions are automatically committed upon successful completion of the statement. Multi-statement transactions are explicitly committed, but the commit only occurs if and when the calling statement successfully completes.

constraint

MarkLogic. A constraint is a name/value pair used to filter search results. A constraint can be used in a search UI to create the facets as part of [faceted navigation](#) where every [facet](#) is a constraint on the search results. For a constraint to also function as a facet, you have to be able to retrieve all its values. If you search [docs.marklogic.com](#) for “xquery”, the results will break-down by category of documents that mention XQuery. The categories of documents are the constraints on the search results.

content source

MarkLogic. The database and App Server combination against which your query executes. [Query Console](#) automatically builds a list of available content sources for your [MarkLogic Server](#) and makes it available in the Content Source list.

coordinate system

Geospatial. A geospatial coordinate system is a set of mappings that map places on Earth to a set of numbers. The vertical axis is represented by a latitude coordinate, and the horizontal axis is represented by a longitude coordinate, and together they make up a coordinate system that is used to map places on the Earth. For more details, see [Latitude and Longitude Coordinates in MarkLogic Server](#) in the *Search Developer's Guide*.

CPF (Content Processing Framework)

Content Processing Framework. The Content Processing Framework in [MarkLogic Server](#) supports multi-step processing as part of content processing applications. Each step in the process performs a particular task or set of tasks. Content processing is a way to programmatically add value to your content. See [Overview of the Content Processing Framework](#) in the *Content Processing Framework Guide*. See also [pipeline](#), [domain](#), and [trigger](#).

CRUD

Database. Create, Read, Update, and Delete: the four basic attributes of persistent storage.

CURIE (Compact URI Expression)

Semantics. A shortened version of a [URI \(Uniform Resource Identifier\)](#) signifying a specific resource.

D**database**

MarkLogic. MarkLogic databases are made up of one or more [forests](#), and forests are made up of one or more [stands](#). See [forest](#) and [stand](#).

database replication

Database. See [Replicate](#).

DBPedia

Semantics. A project aiming to extract structured content from the information created as part of the Wikipedia project. Information in Wikipedia is represented as [RDF triples](#), making it an excellent source of facts as triples.

dc (Dublin Core)

Semantics. A metadata vocabulary containing metadata terms maintained by the [Dublin Core Metadata Initiative \(DCMI\)](#). The current set of the Dublin Core vocabulary includes

terms of the Dublin Core Metadata Element Set, along with elements, classes, and DCMI type vocabularies. The Dublin Core vocabulary existed before the Dublin Core Ontology, which is a lightweight [RDFS \(Resource Description Framework Schema\)](#) vocabulary for describing generic metadata.

declarative rewriter

HTTP server. An implementation of a “rewriter”, specified in a declarative syntax (a document) that doesn't require evaluation by a general purpose language. This is an XML document where the implementation is entirely in C++ and requires no evaluation of either [XQuery](#) or [JavaScript](#).

deep time

General. The total time spent evaluating an expression, including time spent evaluating any expressions contained within the specific expression. See [elapsed time](#) and [shallow time](#).

default graph

Semantics. The default graph is the [RDF graph](#) where triples are inserted if you don't specify a named graph. In MarkLogic, the default graph has the IRI <http://marklogic.com/semantics#default-graph>. You can specify a different collection during the load process and load triples into a named graph. See [graph](#).

default partition

Database. A partition with no defined range. Documents that have no partition key, or a partition key value that does not fall into any of the partition ranges, are stored in the default partition.

distance

Geospatial. The distance between two geospatial objects refers to the geographical closeness of those geospatial objects.

Distinguished Name (DN)

MarkLogic. A sequence of Relative Distinguished Names (RDNs), which are attributes with associated values expressed by the form `attribute=value`. Each RDN is separated by a comma in a DN.

DLS (Document Library Services)

MarkLogic. Library Services enable you to create and maintain versions of managed documents in [MarkLogic Server](#). See [Understanding Library Services](#) in the *Application Developer's Guide*.

d-node

MarkLogic. A MarkLogic data (processing) node. See [e-node](#).

document

MarkLogic. The basic unit of content organization in MarkLogic. Documents can be encoded in [JSON \(JavaScript Object Notation\)](#), [XML \(Extended Markup Language\)](#), plain text, or binary form. This encoding (JSON, XML, text, or binary) is referred to as the [document format](#).

document format

MarkLogic. Refers to how a [document](#) is stored in MarkLogic databases; it can be encoded in XML, binary, JSON, or text format.

domain

Content Processing Framework. A domain defines the scope of documents to process. Domains are used to organize and demarcate different sets content in order to process groups of documents in different ways. See [Flexible Replication](#) and [Understanding and Using Domains](#) in the *Content Processing Framework Guide*.

dynamic content

MarkLogic. Dynamic content is content generated by your application, such as results returned by XQuery modules.

E**EBS (Amazon Elastic Block Store)**

Cloud. See [Elastic Block Store \(EBS - Amazon Elastic Block Store\)](#).

EC2 Compute Unit (ECU)

Cloud. Provides the equivalent CPU capacity of a 1.0-1.2 GHz 2007 Opteron or 2007 Xeon processor.

elapsed time

General. Both [shallow time](#) and [deep time](#) are expressed in elapsed wall clock time.

Elastic Block Store (EBS - Amazon Elastic Block Store)

Cloud. A type of storage designed specifically for Amazon [Elastic Compute Cloud \(EC2\)](#) instances. Amazon EBS allows you to create volumes that can be mounted as devices by Amazon EC2 instances.

Elastic Compute Cloud (EC2)

Cloud. A commercial web service that enables you to launch and manage server instances and host applications in Amazon's data centers using APIs or available tools and utilities. The Amazon EC2 website is available at: <http://aws.amazon.com/ec2/>.

Elastic Load Balancer (ELB)

Cloud. A service that automatically distributes and balances application traffic among multiple EC2 instances. For details, see <http://docs.aws.amazon.com/gettingstarted/latest/wah/getting-started-create-lb.html>.

embedded triples

Semantics. See [unmanaged triples](#).

endpoint

HTTP server. An XQuery module on [MarkLogic Server](#) that is invoked by and responds to an HTTP request for monitoring information.

e-node

MarkLogic. A MarkLogic evaluator node. See [d-node](#).

Enterprise Service Bus (ESB)

General. A software architecture model used for designing and implementing communication between mutually interacting software applications in a service-oriented architecture (SOA). As a software architectural model for distributed computing it is a specialty variant of the more general client server model and promotes agility and flexibility with regards to communication between applications. Its primary use is in enterprise application integration (EAI) of heterogeneous and complex landscapes. (definition from Wikipedia)

execute privilege

Security. An Execute Privilege provides the authority to perform a protected action. Examples of protected actions are the ability to execute a specific user-defined function, the ability to execute a built-in function (for example, `xdmp:document-insert`), and so on. For details on execute privileges, see [Protecting XQuery and JavaScript Functions With Privileges](#) in the *Understanding and Using Security Guide*. See also [privilege](#), [amp](#), [role](#), and [URI privilege](#)

expression

XQuery. The basic parse element of an XQuery program. Expressions can represent literal values, arithmetic operations, functions, function calls, and so on. Expressions can contain other expressions.

extension

XQuery. An user-defined XQuery module that implements additional resource services that are made available through the MarkLogic REST API. For details, see [Extending the REST API](#) in the *REST Application Developer's Guide*.

External Authentication Configuration Object

Security. An object that specifies which authentication protocol and authorization scheme to use, along with any other parameters necessary for LDAP authentication. After an external authentication configuration object is created, multiple App Servers can use the same configuration object.

external binary document

MarkLogic. A binary document that is not stored in a MarkLogic database and whose contents are not managed by the server. For details, see [Choosing a Binary Format](#) in the *Loading Content Into MarkLogic Server Guide*.

F**facet**

MarkLogic. A [constraint](#) used for navigation on search results, providing a set of values that exist matching documents. Facets usually include a count of the resulting number of distinct values. Facets returned by a search include the counts and values needed to generate the user interface for the results. For example, a data set of articles could provide facets on author and publication date.

faceted navigation

MarkLogic. A type of navigation in the user interface that makes use of [facets](#). With faceted navigation, a user can access focused search results by narrowing the search criteria through the use of facets.

field

MarkLogic. A field is typically a small subset of the whole database, a portion of the content that you might want to query as a single unit, such as an abstract. Fields have their own set of indexes, independent of the database indexes. Because the field represents only a relatively small percentage of the content, the relative cost of the extra indexing is small. See [Overview of Fields](#) in the *Administrator's Guide*.

filter

MarkLogic. An XQuery program that modifies the replicated documents in some manner, determines whether to replicate a change, or selects which parts of a document will be replicated.

Flexible Replication

MarkLogic. An implementation of replication based on MarkLogic Server [CPF \(Content Processing Framework\)](#). Flexible replication is single-master, asynchronous, and provides a medium level of throughput and latency. See also [QBFR \(Query-Based Flexible Replication\)](#), [domain](#), [pipeline](#), and [Flexible Replication in MarkLogic Server](#) in the *Flexible Replication Guide*.

FLWOR statement

XQuery. An XQuery programming expression standing for For, Let, Where, Order by, Return. FLWOR (pronounced 'flower') is loosely analogous to SQL's SELECT-FROM-WHERE and can be used to provide join-like functionality to XML documents.

FName

XML. An element identifier used to avoid naming collisions in a namespace.

foaf (friend of a friend)

Semantics. An [ontology](#) for describing people and social relationships. See http://www.w3.org/wiki/Good_Ontologies.

Foreign Bind Port

MarkLogic. The port used on each [host](#) to handle XDQP communication with foreign clusters.

Foreign Cluster

MarkLogic. A remote [cluster](#) of [MarkLogic Server](#) hosts.

forest

MarkLogic. A forest is a collection of documents that is implemented as a physical directory on disk. A group of ‘trees’ (‘Forests, because we store trees.’) A MarkLogic database is made up of ‘forests’. See [stand](#).

forward-chaining inference

Semantics. Forward chaining [inference](#) is inference done at index-time - during the ingestion/indexing of triples, creating new, inferred triples and inserting them into the database. Forward-chaining inference is less resource intensive at query-time, but more costly at ingest-time. See also [backward-chaining inference](#) and [inference](#).

fragment

MarkLogic. Fragments are XML documents partitioned into smaller blocks of information for storage. You have the option of specifying how the XMP documents are partitioned. See [Fragments](#) in the *Administrator’s Guide* for more information.

G

graph

Semantics. In [RDF \(Resource Description Framework\)](#), a graph is a collection of triples. In a graph-based RDF model, nodes represent [Subject](#) and [Object](#) resources, with the [Predicate](#) providing the connection between those nodes. Graphs that are assigned a name are referred to as *named graphs*.

Graph Store

Semantics. A mutable repository of RDF graphs managed by one or more services. See the W3C specification, <http://www.w3.org/TR/sparql11-update/#graphStore> for more information about Graph Store.

graph permissions

Semantics. Permissions needed by a user in order to read or modify a [graph](#).

groups

MarkLogic. A set of similarly configured [host](#) within a cluster. See [Groups](#) in the *Administrator's Guide*. See also [host group](#).

H**Hadoop MapReduce**

Hadoop. An Apache Software Foundation software framework for reliable, scalable, distributed parallel processing of large data sets across multiple hosts. The Hadoop core framework includes a shared file system (HDFS), a set of common utilities to support distributed processing, and an implementation of the MapReduce programming model. See [Apache Hadoop MapReduce Concepts](#) in the *MarkLogic Connector for Hadoop Developer's Guide*.

HDFS (Hadoop Distributed File System)

Hadoop. The Hadoop filesystem, which can be used as an input source or an output destination in jobs. HDFS is the default source and destination for Hadoop MapReduce jobs.

historical data

Database. Data that is less critical for the lowest-latency queries than 'active' data, but still requires online access for queries. Historical data is not typically updated.

history

Query Console. A record of previously executed versions of a query. Each time you execute a query in Query Console, its query text is saved in the history. Use the history to restore a query to a previous state.

host

MarkLogic. Describes a [MarkLogic Server](#) object, such as a [host](#), [database](#), App Server, or [cluster](#).

host group

MarkLogic. A group of one or more [MarkLogic Server](#) objects. See [Groups](#) in the *Administrator's Guide*. See also [groups](#).

HTML (Hypertext Markup Language)

HTML. A standardized markup language used for tagging text files to format the look and hyperlinks for web pages on the Web.

HTTP (Hypertext Transfer Protocol)

Web. An application protocol for distributed, collaborative, hypermedia information systems, the underpinning of data communication for the World Wide Web. Hypertext is structured text that uses logical links (hyperlinks) between nodes containing text. HTTP is the protocol to exchange or transfer hypertext.

I

inference

Semantics. You can do inference manually as part of an [inference query](#) or automatically using an [inference engine](#). Given a set of data as [triples](#) and a set of rules (such as a [ruleset](#)), you can derive or discover new relationships and new facts. Inference can be done at query time (for each query, look at the data and [ontology](#) and [ruleset](#)(s), and expand the query appropriately), or at index time (on ingestion/index create new inferred triples). Whether the new relationships are explicitly added to the set of data, are returned at query time, or just influence the results, is an implementation issue. See [forward-chaining inference](#), [backward-chaining inference](#), and [inferencing](#).

inference engine

Semantics. Software that performs [inference](#). An inference engine may also be referred to as a reasoning engine, a reasoner, a semantic reasoner, or a rules engine.

inference query

Semantics. An inference query is any query (SPARQL, XQuery, JavaScript) that is affected by [inference](#) (that is, affected by some [ruleset](#)).

inference rule

Semantics. A rule that defines a set of [triples](#) to be inferred by some set of [asserted triples](#), [ontology triples](#), and [rulesets](#). You must have a ruleset to do inferencing.

inferencing

Semantics. Inferencing is the process of discovering new facts and relationships in your data using [triples](#), an [ontology](#), and [ruleset](#)(s). Inferencing can be done manually as part of an [inference query](#), or automatically using an [inference engine](#). See [inference](#).

inferred triples

Semantics. In a system that does [forward-chaining inference](#) (a system that materializes new triples inferred from existing triples), inferred triples are those triples created by that inferencing. See also [asserted triples](#) and [backward-chaining inference](#).

input query

MarkLogic. When using [MarkLogic Server](#) as an input source, the query that generates input key-value pairs from the fragments/records in the input split.

input source

MarkLogic. A [database](#), file system, or other system that provides input to a job. For example, a [MarkLogic Server](#) instance or [HDFS \(Hadoop Distributed File System\)](#) can be used as an input source.

input split

MarkLogic. The subset of the input data set assigned to a map task for processing. Split generation is controlled by the InputFormat subclass and configuration properties of a job.

input split query

MarkLogic. When using [MarkLogic Server](#) as an [input source](#), the query that determines which content to include in each split. By default, the split query is built in. In advanced input mode, the split query is part of the job configuration.

InputFormat

Hadoop. The abstract superclass, `org.apache.hadoop.mapreduce.InputFormat`, of classes through which input splits and input key-value pairs are created for map tasks. The Apache Hadoop MapReduce API includes InputFormat subclasses for using HDFS as an input source. The MarkLogic Connector for Hadoop API provides InputFormat subclasses for using [MarkLogic Server](#) as an input source; see [InputFormat Subclasses](#) in the *MarkLogic Connector for Hadoop Developer's Guide*.

Instance

Cloud. The running system after an [Amazon Machine Image \(AMI\)](#) is launched. Instances remain running unless they fail or are terminated. When this happens, the data on the instance is no longer available. Once launched, an instance looks very much like a traditional host.

Instance Store (sometimes referred to as Ephemeral Storage)

Cloud. A fixed amount of storage space for an instance. An instance store is not designed to be a permanent storage solution. If an instance reboots, either intentionally or unintentionally, the data on the instance store will survive. If the underlying drive fails or the instance is terminated, the data will be lost.

Instance Type

Cloud. Defines the size of an [Elastic Compute Cloud \(EC2\)](#) instance. The [MarkLogic Server](#) instance types are shown in the table at the end of Step 5 in [Creating a CloudFormation Stack using the AWS Console](#) in the *MarkLogic Server on Amazon EC2 Guide*.

interpretive rewriter

HTTP server. An implementation of a “rewriter” that is specified in an interpreted language, like JavaScript or XQuery.

IRI (Internationalized Resource Identifier)

Web. An IRI is a compact string that is used for uniquely identifying resources in an RDF triple. IRIs may contain characters from the Universal Character Set (Unicode/ISO 10646), including Chinese or Japanese Kanji, Korean, Cyrillic characters, and so on. See also [URI \(Uniform Resource Identifier\)](#), [URL \(Uniform Resource Locator\)](#), and [URN \(Uniform Resource Name\)](#).

J

JavaScript

Web. JavaScript is an object-oriented computer programming language commonly used to create interactive effects within web browsers, whose implementations allow client-side scripts to interact with the user. It is also being used in server-side network programming (with [Node.js](#)), game development and the creation of desktop and mobile applications.

JFS (Journaling File System)

MarkLogic. A journaling file system is a file system that keeps track of the changes that will be made in a journal (usually a circular log in a dedicated area of the file system) before committing them to the main file system. In the event of a system crash or power failure, such file systems are quicker to bring back online and less likely to become corrupted.

job

Hadoop. The top level unit of work for a MapReduce system. A job consists of an input data set, a MapReduce program, and configuration properties. Hadoop splits a job into map and reduce tasks which run across a Hadoop cluster. A Job Tracker node in the Hadoop cluster manages MapReduce job requests.

JPA (Java Persistence API)

Java. The Java Persistence API provides a [POJO \(Plain Old Java Object\)](#) persistence model for object-relational mapping.

JSON (JavaScript Object Notation)

JavaScript. A text-based open standard language for representing simple data structures and objects.

JSON-LD (JavaScript Object Notation-Linked Data)

JavaScript. A WC3 recommended format for transporting [linked data](#) an RDF graph, or an RDF Dataset in a JSON syntax, allowing data to be serialized in a way that is similar to traditional JSON.

K**Kerberos**

Security. A ticket-based authentication protocol for trusted hosts on untrusted networks. Kerberos provides users with encrypted tickets that can be used to request access to particular servers. Because Kerberos uses tickets, both the user and the server can verify each other's identity and user passwords do not have to pass through the network.

key

Security. A piece of information that determines the output of a cipher. SSL/TLS communications begin with a public/private key pair that allow the client and server to securely agree on a session key. The public/private key pair is also used to validate the identity of the server and can optionally be used to verify the identity of the client.

L**lag limit**

Database. A value that specifies the amount of time (in seconds) in which frames being written to the forest's journal can differ from the frames being streamed to the backup journal. For example, if the lag limit is set to 30 seconds, the archived journal can lag behind a maximum of 30 seconds worth of transactions compared to the active journal. If the lag limit is exceeded, transactions are halted until the backup journal has caught up. The decision to set your lag limit time is determined by your [RPO \(Recovery Point Objective\)](#).

large binary document

MarkLogic. A binary document whose contents are managed by [MarkLogic Server](#) and whose size exceeds the large size threshold. For details, see [Choosing a Binary Format](#) in the *Loading Content Into MarkLogic Server Guide*.

Large Data Directory

MarkLogic. The per-[forest](#) area where the contents of [large binary documents](#) are stored.

large size threshold

MarkLogic. A database configuration setting defining the upper bound on the size of small binary documents. Binary documents larger than the threshold are automatically classified as [large binary documents](#).

lexicon

MarkLogic. A list of unique words or values, either throughout an entire database or within named elements, attributes, or fields. You can also define lexicons that allow quick access to the document and collection URIs in the database. Lexicons are usually backed by a range index. For more information see [Querying Lexicons and Range Indexes](#) and [Range Indexes and Lexicons](#), also [Browsing With Lexicons](#) in the *Search Developer's Guide*.

Lightweight Directory Access Protocol (LDAP)

Security. An authentication protocol for accessing server resources over an internet or intranet network. An LDAP server provides a centralized user database where one password can be used to authenticate a user for access to multiple servers in the network. LDAP is supported on Active Directory on Windows Server 2008 and OpenLDAP 2.4 on Linux and other Unix platforms.

linked data

Semantics. Linked data describes a method of sharing and querying data on the Web, building on Web technologies such as [HTTP \(Hypertext Transfer Protocol\)](#), [RDF \(Resource Description Framework\)](#) and [IRI \(Internationalized Resource Identifier\)s](#), to share information in a way that can be read automatically by computers. Linked data is a term coined by Tim Berners-Lee for a web of data that can be processed by machines. See [Linked Open Data](#) and [semantic web technologies](#). See also <http://linkeddata.org/>.

Linked Open Data

Semantics. Linked Open Data refers to [linked data](#) freely available on the Web like [DBPedia](#). This data can be accessed via REST, a [SPARQL endpoint](#), or downloaded for local use in different formats.

LSQT (Last Stable Query Time)

Bitemporal. An internal database timestamp used to track a point in time. A document with system start time before the LSQT point can be queried but not updated or ingested, and a document after this point can be updated/ingested but not queried. See [bitemporal](#) and [temporal](#).

Local Cluster

MarkLogic. The cluster of [MarkLogic Server](#) hosts at your current location. See [cluster](#).

M

Manage App Server

MarkLogic. The App Server on the Monitor Host that is configured to handle monitor requests. The Manage App Server is bound to port 8002 and is the App Server used by the Nagios plugin and the Monitoring Dashboard.

managed clusters

MarkLogic. A MarkLogic feature that works with AWS features to automatically create and provision the necessary AWS resources and provide MarkLogic with the information needed to manage your cluster. For details see [The Managed Cluster Feature](#) in the *MarkLogic Server on Amazon EC2 Guide*.

managed triples

MarkLogic. Triples with a document root of `sem:triples` are “managed triples” in MarkLogic. Conceptually, managed triples are triples that are not embedded in any document. When you load and query triples as you would with a [triple store](#) - without reference to a document - you are generally working with managed triples. These triples can be updated using [SPARQL Update](#). See [unmanaged triples](#) and [triple](#).

map task

Hadoop. A task which contributes to the map step of a job. A map task transforms the data in an input split into a set of output key-value pairs which can be further processed by a reduce task. A map task has no dependence on or awareness of other map tasks in the same job, so all the map tasks can run in parallel.

mapper

Hadoop. Programmatically, a subclass of `org.apache.hadoop.mapreduce.Mapper`. The mapper transforms map input key-value pairs into map output key-value pairs that can be consumed by reduce tasks. An input pair can map to zero, one, or many output pairs.

MarketPlace

Cloud. The [Amazon Web Services \(AWS\)](#) service for publishing pay-per-use and free (no extra charge) public AMI's on amazon. For details, see <https://aws.amazon.com/marketplace>.

MarkLogic Server

MarkLogic. An enterprise grade, scaleable operational database management system designed from the ground up to make massive quantities of heterogenous data easily accessible through search. MarkLogic Server runs on commodity hardware, supports ACID transactions, semantics, and Java, JavaScript, XQuery, and REST APIs. See [Overview of MarkLogic Server](#) in the *MarkLogic Server Concepts Guide*.

Master

Flexible Replication. The repository that gets updated by the applications. The master, in turn, replicates the updates to other repositories, each known as a [Replica](#).

Master Cluster

MarkLogic. The cluster on which the replicated documents are updated by the applications; shorthand for the cluster that hosts a [Master Database](#).

Master Copy

MarkLogic. The content being replicated. For any piece of replicated content there is a [Master](#) and at least one copy.

Master Database

MarkLogic. The database being replicated. In any [database replication](#) scheme there is a Master Database and at least one [Replica Database](#).

Master Forest

MarkLogic. The forest being replicated. In any [database replication](#) scheme there is a Master Forest and at least one [Replica Forest](#).

Metadata Database

MarkLogic. The database that stores and indexes all of the configuration data required to manage a cluster of one or more [MarkLogic Servers](#). For [Amazon Web Services \(AWS\)](#), the SimpleDB service is used to implement the Metadata Database. For details, see <http://docs.aws.amazon.com/AmazonSimpleDB/latest/GettingStartedGuide/Welcome.html>.

MIME type

Web. (Multipurpose Internet Mail Extension) A MIME type is a standard identifier used by email clients, web browsers, search engines, and other protocols to indicate the type of data that a file contains. In an HTTP request, a MIME type is referred to as Content-type.

Due to their expanded use by other media, MIME types are referred to as Internet Media types.

mlcp (MarkLogic content pump)

MarkLogic. A command line tool for getting data into and out of a [MarkLogic Server](#) database.

MLJS (MarkLogic JavaScript API)

MarkLogic. A client-side API for using [JavaScript](#) with [MarkLogic Server](#).

module

MarkLogic. There are two types of modules in MarkLogic; main modules and library modules. A main module can be executed as an XQuery or JavaScript program, and must include a query body consisting of an [XQuery](#) or [JavaScript](#) expression (which in turn can contain other expressions, and so on). A library module has a [namespace](#) and is used to define functions. Library modules cannot be evaluated directly; they are imported, either from other library modules or from main modules with an import statement. See [built-in](#).

Monitor Application

MarkLogic. This can be any application that requests and makes use of monitoring data, such as a Web browser, a plugin for an existing monitoring tool, or the Monitoring Dashboard described in [Using the MarkLogic Server Monitoring Dashboard](#) in *Monitoring MarkLogic Guide*.

Monitor Content

MarkLogic. The [XML \(Extended Markup Language\)](#), [HTML \(Hypertext Markup Language\)](#), or [JSON \(JavaScript Object Notation\)](#) structure that represents the data returned by the Management API.

Monitor Host

MarkLogic. The host in a [MarkLogic Server](#) cluster that uses the Monitor API to respond to requests for monitoring content from the monitor application and returns monitoring information for objects in the [cluster](#).

Monitoring Sample

MarkLogic. A bit of information captured during a refresh interval on a graph. For example, one of the candlesticks captured in the Query Execution graph is a single sample.

Monitoring Session

MarkLogic. The timeframe since the dashboard page was last refreshed. For example, if you navigate from the Query Execution page to the Rates and Loads page, you have ended the Query Execution session and started the Rates and Loads session.

multi-statement transaction

Database. A transaction created in query or update transaction mode, consisting of one or more statements which commit or rollback together. Changes made by one statement in the transaction are visible to subsequent statements in the same transaction prior to commit. Multi-statement transactions must be explicitly committed by calling XX.

multi-tenancy

Cloud. A mode of software operation where multiple independent instances of one or multiple applications operate in a shared environment. The instances (tenants) are logically isolated, but physically integrated. Multi-tenancy is an important feature of cloud computing.

MVCC (Multi Version Concurrency Control)

Database. A concurrency control method commonly used by database management systems to provide concurrent access to the database, and used in programming languages to implement transactional memory.

N

N3 (Notation 3)

Semantics. A serialized format for expressing data in the [RDF \(Resource Description Framework\)](#) data model with the syntax similar to [SPARQL](#). RDF represents information as a [triple](#) consisting of [Subject](#), [Predicate](#), and [Object](#). [RDF/XML](#) and [Turtle \(Terse RDF Triple Language\)](#) are other serializations of RDF.

Nagios

Nagios. Nagios is an open source software application for computer system monitoring, network monitoring, and infrastructure monitoring. Nagios offers monitoring and alerting services for servers, switches, applications, and services. See <http://www.nagios.org/> for more information.

Nagios host

Nagios. The computer where [Nagios](#) and the [Nagios plugin](#) are installed.

Nagios object

Nagios. A particular resource in [MarkLogic Server](#), such as a [cluster](#), [host](#), App Server, or database.

Nagios plugin

Nagios. A generic Perl script that plugs into your Nagios environment to manage the requests and responses between [Nagios](#) and [MarkLogic Server](#). Nagios uses the results returned from the plugin to display the current status of objects in a MarkLogic cluster.

namespace

XML. In [XML \(Extended Markup Language\)](#), [XQuery](#), and [SPARQL](#), element and attribute nodes are always in a namespace, even if that namespace is the empty namespace (sometimes called *no namespace*). Each namespace has a [IRI \(Internationalized Resource Identifier\)](#) associated with it. An IRI is essentially a unique string that identifies the namespace.

node

MarkLogic. See [e-node](#) and [d-node](#).

Node.js

JavaScript. (“Node”) A low-level, open-source scripting environment that allows developers to build network and I/O services with [JavaScript](#).

non-temporal

MarkLogic. The latest data or information, without any history. See [bitemporal](#).

NPM (Node Package Manager)

JavaScript. The public repository of libraries for the [Node.js](#) ecosystem.

O**object**

MarkLogic. A component of interest in [MarkLogic Server](#), such as a [cluster](#), [host](#), App Server, or database.

Object

Semantics. An RDF resource, which in turn may be the [Subject](#) in a [triple](#). An object may be a typed literal. See also [Predicate](#), [RDF \(Resource Description Framework\)](#), and [RDF Datatypes](#) in the *Semantics Developer's Guide*.

offline partition or forest

MarkLogic. A partition or [forest](#) that is not available for queries, but is tracked by the [cluster](#). The benefit of taking data offline is to spare the RAM, CPU, and network resources for the online data.

online partition

MarkLogic. A [partition](#) or [forest](#) that is available for queries and updates

ontology

Semantics. An ontology provides a semantic model of (a portion of) the world. An ontology is generally expressed as [triples](#) (like “a Henley is a shirt”) in an ontology language such as [RDFS \(Resource Description Framework Schema\)](#) or [OWL \(Web Ontology Language\)](#). The triples that make up an ontology are [ontology triples](#). Ontologies can include [vocabularies](#), a controlled set of terms used to define concepts and relationships.

ontology triples

Semantics. Triples that make up an [ontology](#) are ontology triples. See [asserted triples](#) and [vocabularies](#).

ordering clause

MarkLogic. A part of an ordering specification, as part of the `cts:search()` function, that deals with a single ordering key

ordering specification

MarkLogic. A way to specify, in a parameter, the ordering of a set of search results from a `cts:search()` function.

ORM (Object Relational Mapping)

Database. A technique for converting data between incompatible type systems in object-oriented languages, creating a "virtual object database" that can be used from within the language.

OutputFormat

Hadoop. The abstract superclass, `org.apache.hadoop.mapreduce.OutputFormat`, of classes that store output key-value pairs during the reduce phase. The Apache Hadoop MapReduce API includes `OutputFormat` subclasses for using HDFS for output. The MarkLogic Connector for Hadoop API provides `OutputFormat` subclasses for using a [MarkLogic Server](#) database as an output destination. See [OutputFormat Subclasses](#) in the *MarkLogic Connector for Hadoop Developer's Guide*.

OWL (Web Ontology Language)

Semantics. OWL and OWL2 are knowledge representation languages or [ontology](#) languages for authoring ontologies for [semantic web technologies](#). See the W3C specification for OWL (<http://www.w3.org/TR/owl-ref/>) and OWL 2 (<http://www.w3.org/TR/owl2-overview/>).

P

parameter

MarkLogic. An addition to the end of a resource address to filter and/or format the view returned from [MarkLogic Server](#). Parameters are expressed as query strings in the URL and are described in [Specifying Parameters in a Resource Address](#) in the *Monitoring MarkLogic Guide*.

partition

MarkLogic. A set of [forests](#) sharing the same name prefix and same [partition range](#) definition. Typically forests in a partition share the same type of storage and configuration such as updates allowed, availability, and enabled status. Partitions are based on forest naming conventions. A forest's partition name prefix and the rest of the forest name are separated by a dash (-). For example, a forest named 2011-0001 belongs to the 2011 partition.

partition key

MarkLogic. Defines an element or attribute on which a [range index](#), [collection lexicon](#), or field is set and defines the context for the range set on the [partitions](#) in the database. The partition key is a database-level setting.

partition range

MarkLogic. Defines a range of values for a [partition](#). Documents with a [partition key](#) value that fall within the range specified for a partition are stored in that partition.

path

Semantics. See [property path](#).

PEP (Policy Enforcement Point)

Security. A Policy Enforcement Point (PEP) receives a directive from the Policy Decision Point (PDP) on what must be carried out before or after an access is approved. If the PEP is unable to comply with the directive, the approved access may or must not be realized and access denied.

permission

MarkLogic. Permissions are on documents. A permission provides a [role](#) with the capability to perform certain actions (read, insert, update, execute) on a [document](#) or a protected [collection](#). Permissions consist of a role and [capabilities](#). Permissions are assigned to documents and collections. For details on permissions, see [Document Permissions](#) in the *Understanding and Using Security Guide*. See [privilege](#).

pipeline

Content Processing Framework. A pipeline defines document states as a document moves through stages of content processing. You attach pipelines to [domains](#), and the domains determine the documents on which a pipeline acts. In addition to defining document states, a pipeline specifies actions that occur under certain conditions. A pipeline is a core component of the [CPF \(Content Processing Framework\)](#). For more information, see [Understanding and Using Pipelines](#) in the *Content Processing Framework Guide*.

plugin

MarkLogic. An XQuery module that provides extension capabilities using the Plugin framework described in [System Plugin Framework](#) in the *Application Developer's Guide*.

point

Geospatial. A geospatial point is the spot in the geospatial coordinate system representing the intersection of a given latitude and longitude. For more details, see [Points in MarkLogic Server](#) in the *Search Developer's Guide*.

POJO (Plain Old Java Object)

Java. Name used to emphasize that a given object is an ordinary Java Object, one that does not follow any of the major Java object models, conventions, or frameworks.

Predicate

Semantics. The relationship between the [Subject](#) and the [Object](#) of a [triple](#). In graph terms, the predicate is also known as an arc or edge. See also [RDF \(Resource Description Framework\)](#).

principal

Security. A unique identity to which Kerberos can assign tickets. For example, in Kerberos, a user is a principal that consists of a user name and a server resource, described as a realm. Each user or service that participates in a Kerberos authentication realm must have a principal defined in the Kerberos database.

privilege

MarkLogic. Roles assigned to a user (or [role](#)) give privileges and [permissions](#) to the user (or [role](#)). There are different types of privileges. An [execute privilege](#) specifies a protected action. Only roles associated with the execute privilege can perform the protected action. A [URI privilege](#) specifies the right to create a [document](#) within a base URI. Only roles associated with the URI privilege can create documents within the base URI. See [Role-Based Security Model \(Authorization\)](#) in the *Understanding and Using Security Guide* for more about roles and privileges.

Promise

JavaScript. A JavaScript interface for interacting with the outcome of an asynchronous event. Every request to the [Node.js](#) Client API returns an object with a `result()` method that returns a Promise object. See [Promise Result Handling Pattern](#) in the *Node.js Application Developer's Guide*.

process

MarkLogic. A request or transaction in [MarkLogic Server](#).

profile report

MarkLogic. An XML report containing statistics for all of the expressions evaluated while profiling was enabled. For a sample profile report, see [Simple Enable and Disable Example](#) in the *Query Performance and Tuning Guide*.

profiler

MarkLogic. An application which measures the performance characteristics of a running program (in the case [MarkLogic Server](#), of an XQuery program).

program

XQuery. The expanded version of some XQuery code that is submitted to [MarkLogic Server](#) for evaluation, such as a query expression in a .xqy file or XQuery code submitted in an `xdmp:eval` statement. The program consists not only of the code in the calling module, but also any imported modules that are called from the calling module, and any modules they might call, and so on.

property path

Semantics. A possible route through a graph between two graph nodes, for example, “show me Bill, and all his friends, and all their friends.” MarkLogic supports both enumerated paths and unenumerated paths, which are paths that use + or * or ? operators. See [Property Path Expressions](#) in the *Semantics Developer’s Guide*.

proximity

MarkLogic. The proximity of search results is how close the results are to each other in a document. Proximity can apply to any type of search terms, including geospatial search terms. For example, you might want to find a search term dog that occurs within 10 words of a point in a given zip code.

Public Key Infrastructure (PKI)

Security. A security scheme that includes a signature of a certificate authority.

Q**QBE (Query By Example)**

MarkLogic. QBE is a query whose structure closely models the structure of the documents you want to match. You can use a QBE to search XML and JSON documents with the REST and Java APIs.

QBFR (Query-Based Flexible Replication)

MarkLogic. Combining [alerts](#) (based on reverse queries that can trigger [Flexible Replication](#) of data) provides query-based flexible replication of your data. QBFR can be used in a pull or push scenario. See [Configuring Alerting With Flexible Replication](#) in the *Flexible Replication Guide*.

QName (Qualified name)

XML. A QName acts as a valid identifier for elements and attributes. A QName is composed of the [namespace](#) name and the local name. Together these uniquely define how the element or attribute is identified and are used to reference particular elements or attributes within XML documents. See also [namespace](#).

quad

Semantics. A representation of a [Subject](#), [Predicate](#), [Object](#), and an additional resource for the context of the triple. In MarkLogic, the fourth resource is taken to be a named graph.

queries per second (QPS)

MarkLogic. The number of query requests per second sent to the server.

query

MarkLogic. Any executable block of [XQuery](#), SQL, or [SPARQL](#). When you run a query in [Query Console](#), you may view the results in your choice of formats.

Query Console

MarkLogic. Query Console is an interactive web-based query development tool for writing and executing ad-hoc queries in [XQuery](#), [JavaScript](#), SQL, [SPARQL](#), and [SPARQL Update](#). Query Console enables you to quickly test code snippets, debug problems, profile queries, and run administrative XQuery scripts. See [Accessing Query Console](#) in the *Query Console User Guide*.

query statement

MarkLogic. A statement that contains no update calls. Query statements have a read-consistent view of the database. Since a query statement does not change the state of the database, the server optimizes it to hold no locks or lightweight locks, depending on the type of the containing transaction.

query transaction

MarkLogic. A transaction which cannot perform any updates; a read-only transaction. A transaction consisting of a single query statement in auto transaction mode, or any transaction created in query transaction mode. Attempting to perform an update in a query transaction raises XDMP-UPDATEFUNCTIONFROMQUERY. Instead of acquiring locks, query transactions run at a particular system timestamp and have a read-consistent view of the database.

R**range index**

MarkLogic. [MarkLogic Server](#) maintains a universal index for every database to rapidly search the text, structure, and combinations of the text and structure that are found within collections of XML and JSON documents. Queries against these documents may include search conditions based on inequalities (for example, price < 100.00 or date ? thisQtr) XML and JSON documents can incorporate numeric or date information. Specifying

range indexes for these elements, attributes, and/or JSON properties will substantially accelerate the evaluation of these queries. See [Range Indexes and Lexicons](#) in *Administrator's Guide* for more information.

RDF (Resource Description Framework)

Semantics. RDF is an abstract data model used to represent facts and relationships, made up of [Subject](#), [Predicate](#), and [Object](#) as a [triple](#). It can be serialized as [Turtle \(Terse RDF Triple Language\)](#), [N3 \(Notation 3\)](#), [RDF/XML](#). RDF is a W3C specification with a defined vocabulary. See the W3C specification <http://www.w3.org/TR/2014/NOTE-rdf11-primer-20140624/>.

RDF graph

Semantics. See [graph](#).

RDF triple

Semantics. An RDF statement made up of a [Subject](#), [Predicate](#), and [Object](#). Each [triple](#) represents a single fact or relationship.

RDF Triple Store

Semantics. A storage tool for the persistent storage, indexing, and query access to RDF graphs (triples). See [triple store](#).

RDFS (Resource Description Framework Schema)

Semantics. A set of [vocabularies](#), rules about structure and data modeling. In RDF, the RDFS specification lets you describe classes, properties, and metadata about those classes and properties. These rules enable you to infer new facts about your data from the schema. See [ruleset](#).

RDF/XML

Semantics. A serialized format for expressing data in the [RDF \(Resource Description Framework\)](#) data model with the syntax similar to [SPARQL](#). RDF represents information as a [triple](#) consisting of [Subject](#), [Predicate](#), and [Object](#). [N3 \(Notation 3\)](#) and [Turtle \(Terse RDF Triple Language\)](#) are other serializations for RDF.

readers/writers locks

Database. A set of read and write locks that lock documents for reading and update at the time the documents are accessed. [MarkLogic Server](#) uses readers/writers locks during update statements. Because update transactions only obtain locks as needed, update statements always see the latest version of a document. The view is still consistent for any

given document from the time the document is locked. Once a document is locked, any update statements in other transactions wait for the lock to be released before updating the document. For more details, see [Update Transactions: Readers/Writers Locks](#) in the *Application Developer's Guide*.

reduce task

Hadoop. A task that contributes to the reduce step of a job. A reduce task takes the results of the map tasks as input, produces a set of final result key-value pairs, and stores these results in a database or file system. A reduce task has no dependence on or awareness of other reduce tasks in the same job, so all the reduce tasks can run in parallel.

reducer

Hadoop. Programmatically, a subclass of `org.apache.hadoop.mapreduce.Reducer`. The reducer aggregates map output into final results during the reduce step of a job. The value portion of an input key-value pair for reduce is a list of all values sharing the same key. One input key-value pair can generate zero, one, or many output pairs.

regex

A generic term for a Regular Expression, a sequence of characters used to form a search pattern, used for string pattern matching.

Replica

Flexible Replication. A repository that receives replicated updates from the [Master](#). See [Flexible Replication](#).

replica cluster

Flexible Replication. Shorthand for the cluster that hosts a [Replica Database](#). See [Flexible Replication](#).

Replica Database

Flexible Replication. The database that receives replicated data from the [Master Database](#). See [Flexible Replication](#).

Replica Forest

Flexible Replication. The [forest](#) that receives replicated data from the [Master Forest](#). See [Flexible Replication](#).

Replicate

Flexible Replication. To create a copy of a document in another database and to keep that copy in sync (possibly with some time-lag/latency) with the original. See [Flexible Replication](#).

Replication Domain

Flexible Replication. The specification of the set of documents to be replicated. This may be a collection or some other set definition. See [Flexible Replication](#).

Representation

MarkLogic. A view of a resource in a particular format, such as XML, HTML, or JSON.

request

MarkLogic. Any invocation of a program, whether through an App Server, through a task server, through , or through any other means. In addition, certain client calls to App Servers (for example, loading an XML document through XCC, downloading an image through HTTP, or locking a document through WebDAV) are also requests.

resource (REST)

MarkLogic. An abstraction of a MarkLogic REST API service, as presented by the REST architecture.

Resource Address

MarkLogic. A URL that identifies a [MarkLogic Server](#) resource. Resource addresses are described in [Resource Addresses](#) in *Administrator's Guide* and [Understanding REST Resources](#) in *Monitoring MarkLogic Guide*.

resource path

MarkLogic. A URL sent to [MarkLogic Server](#) to return monitoring information for an object. The resource paths are described in [Using the Management API](#) in *Monitoring MarkLogic Guide*.

REST (Representational State Transfer)

MarkLogic. An architecture style that, in the context of the MarkLogic REST API or monitoring [MarkLogic Server](#), describes the use of HTTP to make calls between a client application and [MarkLogic Server](#) to create, update, delete and query content and metadata in the database

REST API instance

MarkLogic. An instantiation of the MarkLogic REST API against which applications can make RESTful HTTP requests. An instance consists of an HTTP App Server, a URL rewriter, a content database, a modules database, and the modules that implement the API. For details, see [Administering REST Client API Instances](#) in the *REST Application Developer's Guide*.

reverse query

MarkLogic. A reverse query is the opposite of a regular query; it returns all of the queries, that if they were run, would match a document. Reverse queries are used in creating [alerts](#). See [Overview of Alerting Applications in MarkLogic Server](#) in the *Search Developer's Guide*.

rewriter

HTTP server. A method for declaring the rules by which an incoming HTTP request is “rewritten” to target a different path, environment, and/or capability than the default for the server. This is an XQuery module that interprets the URL of an incoming HTTP request and rewrites it to an internal URL that services the request.

role

Security. A role is a named entity that provides authorization privileges and permissions to other roles or to users. You can assign roles to other roles (which can in turn include assignments to other roles, and so on). Roles are the fundamental building blocks that you use to implement your security policies. See also [privilege](#). For details on roles, see [Role-Based Security Model](#) in the *Understanding and Using Security Guide*.

rollback

Database. Immediately terminate a transaction and discard all updates made by the transaction. All transactions are automatically rolled back on error. Multi-statement transactions may also be explicitly rolled back using `xdmp:rollback`, or implicitly rolled back due to timeout or reaching the end of the session without calling `.`

RPO (Recovery Point Objective)

Database. The amount of data you can afford to lose in the event of a disaster. A low RPO means that you will restore the most data (at the cost of performance) and a high RPO means you will potentially store less data, but with less impact to performance. See [lag limit](#).

ruleset

Semantics. A set of [inference rules](#). In MarkLogic, a ruleset may be built up by importing other rulesets. MarkLogic supports several rulesets that map to a common ontology language or subset ([RDFS \(Resource Description Framework Schema\)](#), OWL-Horst).

S

S3 (Amazon Simple Storage Service)

Cloud. Amazon S3 is an online file storage web service offered by Amazon Web Services that provides storage through web services interfaces. See <http://aws.amazon.com/s3/> for more information.

schema

Database. A representation of a SQL schema. A schema is implemented as an XML document in the schemas database and consists of a unique id, a name (which must also be unique), and a collection of views. During SQL execution, the schema provides the naming context for its views, which enables you to have multiple views of the same name in different schemas. The default schema is called “main.” It is default in the sense that it is always implicitly available and first on the default schema search path for name resolution in SQL. Even though the “main” schema is a default, you must create this schema.

semantic web technologies

Semantics. A set of standards and best practices for sharing linked data for use by applications over the Web. This includes the “semantics” (context and meaning) of that data. Semantic web technologies include the [RDF \(Resource Description Framework\)](#) standard, [SPARQL](#), [OWL \(Web Ontology Language\)](#) and other [ontology vocabularies](#). See also [linked data](#).

sequence file

Hadoop. A flat file of binary key-value pairs in one of the Apache Hadoop SequenceFile formats. The [mlcp \(MarkLogic content pump\)](#) tool only supports importing Text and BytesWritable values from a sequence file.

server-side JavaScript

JavaScript. MarkLogic provides a JavaScript environment that runs within an [e-node](#).

service

MarkLogic. Describes what to monitor and how to monitor one or more objects in a MarkLogic cluster. Services can define warning and critical thresholds for alerting and can monitor one or more objects in [MarkLogic Server](#).

service group

MarkLogic. A group of one or more services.

shallow time

General. The time spent evaluating a specific expression, not including time spent evaluating any expressions contained within the specific expression. See [elapsed time](#) and [deep time](#).

shuffle

Hadoop. The process of sorting all map output values with the same key into a single (key, value-list) reduce input key-value pair. The shuffle happens between map and reduce. Portions of the shuffle can be performed by map tasks and portions by reduce tasks.

single-statement transaction

Database. Any transaction created in auto transaction mode. Single-statement transactions always contain only one statement and are automatically committed on successful completion or rolled back on error.

SKOS (Simple Knowledge Organization System)

Semantics. A W3C recommendation designed for representation of thesauri, classification schemes, taxonomies, subject-heading systems, or any other type of structured controlled vocabulary. See also [thesaural relationship](#).

small binary document

MarkLogic. A binary document stored in a MarkLogic database whose size does not exceed the large size threshold. For more information, see [Choosing a Binary Format](#) in the *Loading Content Into MarkLogic Server Guide*.

snippet

MarkLogic. The result of a search function that returned a portion of the found documents.

snippeting

MarkLogic. A search function in which portions (snippets) of the found documents are returned in the search results.

SOAP (Simple Object Access Protocol)

Web. A Web Services protocol for exchanging structured information in computer networks. It relies on Application Layer protocols, most notably Hypertext Transfer Protocol (HTTP) or Simple Mail Transfer Protocol (SMTP), for message negotiation and transmission.

SPARQL

Semantics. A recursive acronym for SPARQL Protocol and RDF Query Language (SPARQL), a query language designed for querying data in [RDF \(Resource Description Framework\)](#) format. MarkLogic supports SPARQL1.1.

SPARQL endpoint

Semantics. A resource that a [SPARQL](#) process can contact and use as a service. The endpoint accepts SPARQL queries and updates, and returns the results using [SPARQL protocol](#).

SPARQL protocol

Semantics. A means of conveying [SPARQL](#) queries from query clients to query processors, consisting of an abstract interface with bindings to [HTTP \(Hypertext Transfer Protocol\)](#) and [SOAP \(Simple Object Access Protocol\)](#).

SPARQL Update

Semantics. A language for making updates to triples in [RDFS \(Resource Description Framework Schema\)](#) format. MarkLogic supports SPARQL Update 1.1.

split

Hadoop. The unit of work for one thread in local mode or one MapReduce task in distributed mode.

SSL (Secure Sockets Layer)

Security. A transaction security standard that provides encrypted protection between browsers and App Servers. When SSL is enabled for an App Server, browsers communicate with the App Server by means of an HTTPS connection, which is HTTP over an encrypted Secure Sockets Layer. HTTPS connections are widely used by banks and web vendors for secure transactions over the web.

stand

MarkLogic. Databases are made up of one or more [forests](#), and forests are made up of one or more stands. See [forest](#).

statement

XQuery. An XQuery main module, as defined by the W3C XQuery standard, to be evaluated by [MarkLogic Server](#). A main [module](#) consists of an optional prolog and a complete XQuery expression. Statements are either query statements or update statements, determined statically through static analysis prior to beginning the statement evaluation.

static content

MarkLogic. Content stored in the modules database of the App Server. [MarkLogic Server](#) responds directly to HTTP range requests (partial GETs) of static content. See [Downloading Binary Content With HTTP Range Requests](#) in the *Application Developer's Guide*.

status change

MarkLogic. As part of content processing (create, update, and delete), [CPF \(Content Processing Framework\)](#) automatically handles the document status change events and sets a state (or cleans up in the case of delete) for the document. When you want the result of these changes to move a document in or out of document processing, it is known as a status change. The Status Change Handling pipeline performs these tasks automatically.

stem

MarkLogic. Words that are derived from the same meaning and part of speech have the same stem (for example, 'mouse' and 'mice'). Some words can have multiple stems (if the same word can be used as a different part of speech, or if there are two words with the same spelling), and if you use advanced [stemming](#) (which can find multiple stems for a word), then [stemmed search](#) will find all of the words having the same stem as any of the stems.

stemmed search

MarkLogic. A stemmed search for a term matches all the terms that have the same [stem](#) as the search term. [MarkLogic Server](#) can perform stemmed searches in a number of different languages.

stemming

MarkLogic. When stemming is enabled, [MarkLogic Server](#) automatically searches for words that come from the same [stem](#) of the word specified in the query, not just the exact string specified in the query. The purpose of stemming is to increase the recall for a search. A [stemmed search](#) for a word finds the exact same terms as well as terms that derive from the same meaning and part of speech as the search term. See [Stemming in MarkLogic Server](#) in the *Search Developer's Guide*.

string query

MarkLogic. A simple search string constructed using either the default [MarkLogic Server](#) search grammar, or a user-defined grammar. For example, 'cat' and 'cat OR dog' are string queries.

structured query

MarkLogic. The pre-parsed representation of a query, expressed as XML or JSON. Structured queries allow you to express complex queries very efficiently. For details, see [Querying Documents and Metadata](#) in the *REST Application Developer's Guide* and [Searching Using Structured Queries](#) in the *Search Developer's Guide*.

sub-database

Database. A database contained in a super-database

Subject

Semantics. A representation of a resource such as a person or an entity. See also [Object](#) and [Predicate](#).

super-database

Database. A database containing other databases ([sub-databases](#)) so that they can be queried as if they were a single logical database.

synchronous

General. Synchronous processing happens “at the same time”. This form of input/output processing blocks I/O until the operation has finished. Synchronous processing does not permit other processing to continue before/until the transmission has finished. See [asynchronous](#).

system time

Bitemporal. When the information (captured in a document) was stored in the database. System time may also be called transaction time. See [bitemporal](#) and [valid time](#).

system timestamp

MarkLogic. A number maintained by [MarkLogic Server](#) that increases every time a change or a set of changes occurs in any of the databases in a system (including configuration changes from any host in a cluster). Each [fragment](#) stored in a database has system timestamps associated with it to determine the range of timestamps during which the fragment is valid.

T**task**

Hadoop. An independent subcomponent of a job, performing either map or reduce processing. A task processes a subset of data on a single node of a Hadoop cluster.

term

MarkLogic. A term is anything stored in the [Universal Index](#); for example words, [stems](#), two-word phrases, value of a declared field, and so on. What terms that you have in your Universal Index depends on your index settings.

temporal

Bitemporal. Temporal refers to [bitemporal](#) documents and collections. See [bitemporal](#), [non-temporal](#), and [LSQT \(Last Stable Query Time\)](#).

thesaural relationship

Semantics. A conceptual hierarchy built by terms that are interlinked with a few very generic relationships. A thesaurus is a hierarchical representation of a set of terms related by broader term, narrower term, synonym, and so on. See [SKOS \(Simple Knowledge Organization System\)](#).

transaction

Database. A set of one or more statements which either all fail or all succeed. A transaction is either an update transaction or a query (read-only) transaction, depending on the transaction mode and the kind of statements in the transaction. A transaction is either a [single-statement transaction](#) or a [multi-statement transaction](#), depending on the [transaction mode](#) at the time it is created.

transaction mode

Database. Controls the type and the commit semantics of newly created [transactions](#). Mode is one of auto, query, or update. In the default mode, auto, all transactions are [single-statement transaction](#). In query or update mode, all transactions are [multi-statement transaction](#). To learn more about transaction mode, see [Transaction Mode](#) in the *Application Developer's Guide*.

transaction-aware

Flexible Replication. A configuration in which all updates that make up a transaction on the [Master](#) are applied as a single transaction on the [Replica](#).

trees

XML. XML documents form a tree structure (a document tree), starting at the “root” (root element) with “branches” containing “leaves” (child elements and attributes). The last line of the document is a the closing tag for the root element. The root element is the parent of the all the other elements. So an XML document tree has a root, branches, and leaves.

trigger

MarkLogic. Triggers listen for certain events (document create, delete, update, or the database coming online) to occur, and then invoke an XQuery module to run after the event occurs. A trigger is used to as part of [CPF \(Content Processing Framework\)](#). See [Overview of Triggers](#) in the *Application Developer's Guide*.

triple index

Semantics. An index that indexes [triples](#) ingested into MarkLogic to facilitate the execution of [SPARQL](#) queries. Triples can be standalone (“managed”) or embedded in a document (“unmanaged”).

triple

Semantics. A triple is an instance of a data model representing a fact or relationship, made up [Subject](#), [Predicate](#), [Object](#). Triples can be serialized different formats like [Turtle \(Terse RDF Triple Language\)](#), [N3 \(Notation 3\)](#), or [RDF/XML](#). See [managed triples](#) and [unmanaged triples](#), [RDF \(Resource Description Framework\)](#) and [graph](#). See also [inference](#).

triple store

Semantics. See [RDF Triple Store](#).

Turtle (Terse RDF Triple Language)

Semantics. A format for expressing data in the [RDF \(Resource Description Framework\)](#) data model with the syntax similar to [SPARQL](#). RDF represents information as a [triple](#) consisting of [Subject](#), [Predicate](#), and [Object](#). [RDF/XML](#) and [N3 \(Notation 3\)](#) are other serializations of RDF.

U**UDDI** (Universal Description, Discovery and Integration)

Web. UDDI is a platform-independent, XML-based registry to register and locate web service applications and businesses on the Internet. UDDI is an open industry initiative, for enabling businesses to publish service listings and discover each other.

UDF (User Defined Function)

MarkLogic. Aggregated user-defined functions or UDFs are functions that analyze values in lexicons and range indexes. Aggregate functions are best used for analyses that produce a small number of results, rather than analyses that produce results in proportion to the number of range index values or the number of documents processed. For more information, see [User-Defined Functions](#) in the *Application Developer's Guide*.

Universal Index

MarkLogic. One index maintained by [MarkLogic Server](#) for every database in order to rapidly search the text, structure, and combinations of the text and structure that are found within collections of XML documents. MarkLogic also has a [triple index](#), [collection lexicon](#) (an index), security indexes, and others. See [term](#).

unmanaged triples

MarkLogic. Triples that are embedded in a [document](#) and have an element root of `sem:triple` are “unmanaged” triples. You don’t need the outer element of `sem:triples` for an unmanaged triple, even if you have more than one `sem:triple`, but you do need the [Subject](#), [Predicate](#), and [Object](#) to be in `sem:triple` elements. Unmanaged triples may also be called [embedded triples](#). See also [triple](#) and [managed triples](#).

update statement

Database. A statement with the potential to perform updates (that is, it contains one or more update calls). A statement may be categorized as an update statement whether or not the statement performs an update at runtime. Update statements run with readers/writers locks, obtaining locks as needed for documents accessed in the statement.

update transaction

Database. A transaction performs updates (make changes to the database) like a transaction consisting of a single update statement in auto transaction mode, or any transaction created under update transaction mode. Update transactions run with readers/writers locks, obtaining locks as needed for documents accessed in the transaction.

URI (Uniform Resource Identifier)

Web. A URI is a string of a standardized form to uniquely identify resources. URIs are limited to a subset of the ASCII character set. See also [IRI \(Internationalized Resource Identifier\)](#), [URL \(Uniform Resource Locator\)](#), and [URN \(Uniform Resource Name\)](#).

URI privilege

MarkLogic. A URI Privilege provides the authority to create documents within a base URI. When a URI privilege exists for a base [URI \(Uniform Resource Identifier\)](#), only users assigned to roles that have the URI privilege can create documents with URIs starting with the base string. See also [execute privilege](#), [amp](#), [privilege](#), [permission](#), and [role](#). For details on URI privileges, see [Protecting Documents](#) in the *Understanding and Using Security Guide*.

URL (Uniform Resource Locator)

Web. A subset of URI that provides the access mechanism and network location of a resource on the World Wide Web. For example, <http://www.example.org/news>. See also [IRI \(Internationalized Resource Identifier\)](#), [URI \(Uniform Resource Identifier\)](#), and [URN \(Uniform Resource Name\)](#).

URN (Uniform Resource Name)

Web. A subtype of URI used for defining classes, properties, or individuals. For example, identifying books by their ISBN number. See also [IRI \(Internationalized Resource Identifier\)](#), [URI \(Uniform Resource Identifier\)](#), [URL \(Uniform Resource Locator\)](#).

user

MarkLogic. A user is a named entity used to authenticate a request to an HTTP, WebDAV, ODBC, or XDBC server. For details on users, see [Authenticating Users](#) in the *Understanding and Using Security Guide*.

V**valid time**

Bitemporal. Valid time marks when the information (captured in a document) was true in the real world. See [bitemporal](#) and [system time](#).

view

SQL. A representation of a SQL view. A view is implemented as an XML document in the schemas database and consists of a unique id, a name (which must be unique in the context of a particular schema), a view scope, and a sequence of column specifications. See [Schemas and Views](#) in the *SQL Data Modeling Guide*.

View

Database. The returned monitoring information about a resource. You can have different views of the same resource. A view can be for a single resource (known as an item view) or a number of resources (known as a “list view”).

view scope

Database. Used to constrain the subset of the database to which the view applies. A view scope can either limit rows in the view to documents with a specific element (localname + namespace) or to documents in a particular collection.

vocabularies

Semantics. A collection of specific terms used to classify concepts, relationships, and definitions. Vocabularies such as [foaf \(friend of a friend\)](#) and [dc \(Dublin Core\)](#) define concepts and relationships used to describe and represent facts. See [ontology](#).

W**workspace**

Query Console. A collection of queries. Use workspaces to organize your queries. You may create multiple workspaces, but only one is active at a time.

WSDL (Web Service Definition Language)

Web. An XML format for describing network services as a set of endpoints operating on messages containing either document-oriented or procedure-oriented information. The operations and messages are described abstractly, and then bound to a concrete network protocol and message format to define an endpoint.

X**XA**

Database. The XA open standard for distributed transaction processing describes the interface between the global transaction manager and the local resource manager.

XCC (XML Content Connector)

MarkLogic. XCC is an API used to communicate with MarkLogic Server from Java or .NET middleware applications. The MarkLogic XCC application is a Java-based connector for accessing content in the server.

XDBC

MarkLogic. (XML Database Connector) A MarkLogic protocol (analogous to ODBC) for accessing MarkLogic databases. Typically used with Java and .NET applications.

XDBC server

MarkLogic. XDBC Servers allow [XCC \(XML Content Connector\)](#) applications to communicate with [MarkLogic Server](#). XDBC is analogous to ODBC, a standard middleware protocol used for accessing relational databases, but XDBC is not used for relational data. See [XDBC Server Overview](#) in the *Administrator's Guide*.

XDM (XQuery and XPath Data Model)

XML. The data model shared by [XQuery](#), [XPath \(XML Path language\)](#), and [XSLT \(Extensible Stylesheet Language Transformations\)](#) programming languages.

xdmp:

MarkLogic. A MarkLogic built-in function.

XML (Extended Markup Language)

XML. A markup language defining a set of rules for encoding documents in human and machine-readable format. XML was designed to facilitate usability on the Web, to be simple to use, and easily generalized. See also [XPath \(XML Path language\)](#) and [XSLT \(Extensible Stylesheet Language Transformations\)](#).

XMLns (XML namespace)

XML. Used to provide uniquely named elements in a document and avoid naming collisions.

XPath (XML Path language)

XML. XPath is used for selecting nodes from an [XML \(Extended Markup Language\)](#) document. Based on a tree representation of the XML document, XPath can navigate around the tree, selecting nodes. It can also be used to compute values from the contents of an XML document.

XQuery

XML. Language for querying [XML \(Extended Markup Language\)](#) documents. XQuery is a functional programming language for searching and transforming collections of structured and unstructured data.

XQuery Program

XML. This is the XQuery main module fully expanded, with any XQuery library modules needed for its evaluation. An XQuery program is sometimes referred to as a query, a statement, or a request. For more details on this terminology, see [Understanding Transactions in MarkLogic Server](#) in the *Application Developer's Guide*.

XSD (XML Schema Definition)

XML. XSD specifies how to formally describe the elements in an [XML \(Extended Markup Language\)](#) document. It can be used to verify each piece of item content in a document, to check that the item adheres to the description of its element. XSD can be used to express a set of rules to which an XML document must conform in order to be considered 'valid' according to that schema.

XSLT (Extensible Stylesheet Language Transformations)

XML. A subset of [XPath \(XML Path language\)](#) used for transforming [XML \(Extended Markup Language\)](#) documents into other XML documents, or other objects like HTML web pages or plain text.

Y, Z

Zero-day Replication

Database. Replicating data from the Master database that existed before replication was configured.

2.0 Technical Support

MarkLogic provides technical support according to the terms detailed in your Software License Agreement or End User License Agreement.

We invite you to visit our support website at <http://help.marklogic.com> to access information on known and fixed issues, knowledge base articles, and more. For licensed customers with an active maintenance contract, see the [Support Handbook](#) for instructions on registering support contacts and on working with the MarkLogic Technical Support team.

Complete product documentation, the latest product release downloads, and other useful information is available for all developers at <http://developer.marklogic.com>. For general questions, join the [general discussion mailing list](#), open to all MarkLogic developers.

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