**Apache Ignite**

**Abstract**

Apache Ignite is an open-source distributed database, caching and processing platform designed to store and compute on large volumes of data across a cluster of nodes. It is memory-centric distributed **database, caching**, and **processing** platform.

History

Ignite was open-sourced by GridGain Systems in late 2014 and accepted in the Apache Incubator program that same year. The Ignite project graduated on September 18, 2015. Apache Ignite's database utilizes RAM as the default storage and processing tier, thus, belonging to the class of in-memory computing platforms.

Clustering

Apache Ignite clustering component is based on the shared nothing architecture. The nodes are divided into two main categories - server and client. Server nodes are storage and computational units of the cluster that hold both data and indexes and process incoming requests along with computations. Server nodes are also known as data nodes.

Client nodes are connection points from applications and services to the distributed database represented as a cluster of server nodes. Client nodes are usually embedded in the application code written in Java, C# or C++ that have special libraries developed.

Memory Management

The memory architecture in Apache Ignite consists of two storage tiers and is called "durable memory". Internally, it uses paging for memory space management and data reference,similar to the virtual memory of systems like Unix.

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