Infinispan Overview
Community Project

Infinispan* is an open source data grid platform, presenting a distributed in-memory data structure that spans multiple cluster nodes. Infinispan is self-discovering and self-healing, so nodes can be added to and removed from the cluster without stopping the operation of the overall tier, as the data tier can then be scaled out and back in again, on demand.

Infinispan exposes a simple API - a JSR-107 compliant Cache interface, which extends Map - and stores data in simple key/value pairs. As such, it can be considered a key/value NoSQL store, with all the benefits of elasticity and resilience that are inherent in data grids, combined with the low-latency and performance of an in-memory data structure.

Infinispan also offers two primary modes of interaction:

1. in-VM, where embedded Infinispan instances are started up within your application and neighboring nodes are discovered and a cluster is formed
2. Client/server, where a dedicated data grid tier is set up and applications interact with this data grid tier via one of three main endpoints:
   - REST. This endpoint allows clients to connect to and communicate with an Infinispan tier over a RESTful protocol.
   - Memcached. This endpoint makes use of the memcached wire protocol, allowing Java and non-Java clients to connect to the Infinispan tier, making use of one of many memcached client libraries available.
   - Hot Rod. This powerful, custom protocol has been designed for Infinispan with failover, load balancing and smart-routing in mind. Currently Infinispan ships with a Java implementation client for the Hot Rod protocol, and we expect more client libraries to be written for Hot Rod, for other platforms.

Infinispan offers a very wide array of features, including:

- Advanced internal data structures highly tuned for multi-core CPU architectures
- Powerful eviction algorithms that add minimal overhead to most operations.
- Expirable entries
- Write-through and write-behind to disk and other configured cache stores.
- JTA andXA transaction compatibility
- Querying and indexing
- Management via JMX
- Management GUI via JOPR
- Configuration migration tools to help you migrate JBoss Cache, EHCache and Coherence configurations to Infinispan

Infinispan’s been gaining a lot of attention in the Java community lately. So just why is Infinispan sexy?

- Transparent horizontal scalability - elastic in both directions.
- Fast, low-latency data access.
- Ability to address very large heaps.
- Cloud-ready data store.
- Not just for Java.
- Open source, backed by a very active community of users and developers.

Find out more at http://www.jboss.org/infinispan, or join #infinispan on irc.freenode.net

* Infinispan is currently available in the JBoss community - it is not yet a JBoss Enterprise Middleware product.