

GridGain
CLOUD COMPUTING



Cloud Computing with Scala and GridGain

June 2010
www.gridgain.com

Agenda 50/50

- > **Talking** 50%
 - > What is Grid & Cloud Computing?
 - > GridGain in a Glance
 - > Scala in a Glance
- > **Live Coding** 50%
 - > Demo: Scala{r} + GridGain
- > **Q&A**

What is Grid & Cloud Computing?

- > Cloud computing is the provision of dynamically scalable and often virtualized resources as a services over the Internet^(*) on a utility^(*) basis src. wikipedia
 - > *Huh?*
- > **Grid:** Two or more computers working in parallel
- > **Grid Computing:** Compute Grids + Data Grids
- > **Cloud:** Data Center Virtualization
- > **Cloud Computing:** Cloud + Grid Computing

Why Grid & Cloud Computing?

- > **Ask** Google, Yahoo, eBay, Amazon, Twitter, Facebook, LinkedIn, Flickr, YouTube, ...
 - > Amazon: 100ms latency cost 1% of sales
 - > Google: 500ms latency drops traffic 20%
 - > Financial: \$4M/ms lose if 5ms behind
- > Solves problems often **unsolvable** otherwise
 - > Google has ~1,000,000 nodes in its grid
- > **Unified** programming model
 - > Scales from Android to 1000s nodes on EC2

GridGain™ In A Glance

- > *GridGain = Compute + Data + Cloud*
 - > **Compute Grid**
 - > **Data Grid**
 - > **Cloud Scalability**
- > JVM-Based, Community + Enterprise editions
 - > Java and Scala - major focus
- > Statistics:
 - > Project started in 2005, first release in 2007
 - > Over 1,000,000 starts in the last 24 months and counting
 - > Over 100,000 downloads
 - > Starts every 20 seconds around the globe

Scala In A Glance

- > Started in 2004 by Martin Odersky at EPFL
- > Author of `javac` and Java Generics
- > Scala is **Post-Functional** language
- > Combines functional and object-oriented approaches
- > Fully inter-compatible with Java
 - > Runs on JVM
 - > Bi-directional Java integration
- > Statically typed
 - > Unique and powerful type system

Why Scala for DSL?

- > At **GridGain** the reasons were:
 - > Scalable language
 - > Post-Functional language
 - > Performance equal to Java
 - > Statically typed
 - > Fully compatible with Java

Scalar In A Glance

- > **Scalar** - Scala-based cloud computing DSL
 - > Based on Scala
 - > Based on GridGain 3.0
 - > Language-level cloud computing constructs
- > **DSL - Domain Specific Language**
 - > Provides simple cloud computing model
 - > Draws on functional features of Scala
 - > Dramatically simplifies cloud computing applications

Live Coding Demo

- > Cloud application in minutes
- > No pre-built code snippets
- > No custom configurations
- > Every line of code, every character

Q&A

Thank You For Your Time!

Nikita Ivanov: nivanov@gridgain.com

GridGain: www.gridgain.com