The current state of enterprise languages, frameworks, and platforms

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AGENDA

> TRENDS
> SOME DATA
> DRILL-DOWN
> JAVA
> JAVASCRIPT
TRENDS
SPEED = REVENUE
FUNDAMENTALLY DIFFERENT

ARCHITECTURE → PROCESS → PLATFORMS
TRENDS: SOFTWARE AS A DIFFERENTIATOR

- DEVELOPER PRODUCTIVITY
  - RIGHT TOOLS FOR THE JOB
  - FAST FEEDBACK
  - SMALL INCREMENTS
  - NO SPEEDBUMPS

- SPEED OF DELIVERY
  - MORE SECURE
  - MORE COMPETITIVE
  - BETTER QUALITY
  - CHANCE TO EXPERIMENT
TRENDS: MICROSERVICES

“... is an approach to developing a single application as a suite of small services, each running in its own process and communicating with lightweight mechanisms, often an HTTP resource API. These services are built around business capabilities and independently deployable by fully automated deployment machinery. There is a bare minimum of centralized management of these services, which may be written in different programming languages and use different data storage technologies.”

Martin Fowler

http://martinfowler.com/articles/microservices.html
TRENDS : REACTIVE PROGRAMMING

- ASYNCHRONOUS / NON-BLOCKING
- EVENT / MESSAGE DRIVEN
- HIGHLY CONCURRENT – SCALABLE
- REACTIVE EXTENSIONS, SCALA, CLOJURE, VERT.X, AKKA / PLAY, NODE.JS / BACON.JS
TRENDS: "SERVERLESS"

- "Function as a Service"
- "Ultimate expression of MSA"
- Reactive – event triggered
- Someone else’s server (aka cloud)
- No application server, middleware
- Just your code
- Disruptive pricing
TRENDS: HETEROGENEITY

- Huge choice of languages (all open source)
- Generalization > specialization
- Generation Y – first internet generation, fast adoption of technology
- Generation Z – unaware of the technology – just the way to do stuff
- Open standard protocols / interoperability
- Necessity – mobile (Native, JavaScript), server (Java, .NET, Python, PHP)
TRENDS: DOGS AND CATS SLEEPING TOGETHER!
API

asynchronous  
event-driven  
anti-fragile

scalable  
reactive  
velocity

deployable  
polyglot  
agile

micro-services
APIs @ Red Hat

Market-leading, full-stack API management platform

Comprehensive coverage of API Economy use cases from API development through management

API governance for mobile channels with Red Hat Mobile Application Platform

OpenShift integration brings API management to containerized applications and microservices architectures

Proven combination with Red Hat customers
The 3scale Platform

**Control**
- Security
- Key Management
- Rate Limiting
- Policy Enforcement
- App & User Management
- Provisioning

**Flexibility**
- Distributed
- Multi-Department
- Multi-Environment
- Highly Scalable
- Powerful APIs
- Webhooks

**Visibility**
- Analytics
- App Tracking
- User Tracking
- Traffic Alerts
- Engagement
- Developer Support

#redhat #rhsummit
SOME DATA : POPULARITY

Sources : Tiobe Index, June 2016 - http://www.tiobe.com/tiobe_index
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SOME DATA : POPULARITY

1 JavaScript
2 Java
3 PHP
4 Python
5 C#
6 C++
7 Ruby
8 CSS
9 C
10 Objective-C

Source : Redmonk, January 2016 http://redmonk.com/sogrady/category/programming-languages/
SOME DATA : WORK IN PROGRESS

- PYTHON WEB CRAWLER COLLECTED DATA FROM EMPLOYER WEB-SITES
- ANALYZED USING R
- BREAKDOWNS BY INDUSTRY / GEOGRAPHY
- CLUSTER ANALYSIS
- INTEND TO PUBLISH TO DEVELOPERS.RED.COM
SOME DATA : EARLY INDICATORS

- #1 Java
- #2 Big Data
- Java / Web Services largest cluster
- Java and Ruby / Web Services largest cluster in Retail
- Clusters of node.js and Go
- Scheme big in Financial Services
- Very long tail ...
THE STATE OF JAVA
I'll tell you what's wrong with it, my lad. 'E's dead, that's what's wrong with it ...
Look, matey, I know a dead parrot when I see one, and I'm looking at one right now ...

- Huge ecosystem
- Choice – tools, run-times, training, ...
- 7-10 million developers worldwide
- The standard for Business / Enterprise
- Huge presence in mobile (Android)
- Huge opportunity in the Internet of Things
- Languages and platforms change slowly - no replacement on the horizon

Sources: Tiobe Index, IDC, IEEE Spectrum, RedMonk, Red Hat
The plumage don't enter into it. It's stone dead ...
THE VALUE OF JAVA EE

• An open standard platform that enables vendors to compete on implementation, price, or business model

• A collaborative standard and process that is driven by many vendors and individual developers rather than a single vendor

• Consistent and holistic vision for all architectural tiers of the application

• A strong focus on adherence to the standard and compatibility between vendor implementations and versions of the specifications
MicroProfile

MicroProfile.io
Optimizing Enterprise Java for a microservices architecture

• Announced at DevNation on Monday
• Collaboration between Red Hat, IBM, Tomitribe, Payara and the Java EE community
• Focussed on a minimal standard profile for Java microservices
• Starting with existing JSRs
• Working towards implementations by Java One 2016
• WildFly Swarm will be Red Hat’s implementation
• Working implementations first, standard spec. second
THE STATE OF JAVASCRIPT
The Rise of JavaScript

Why JavaScript?
- Familiar language constructs
- Functions are first class citizens
- Closures
- Callbacks
- Promises
- Functions vs Methods

Why node.js?
- Popularity of JavaScript
- JSON APIs – Isomorphic JavaScript
- Non-blocking / Event Loop
- NPM
- Building fast scalable network applications
  Non-CPU intensive tasks
By many measures, Node.js is the fastest growing and most significant development platform right now. With 4 million users and an annual growth rate of 100%, Node.js is truly everywhere.
The node.js Foundation
QUESTIONS ?
POWER UP and PARTY DOWN with Red Hat Mobile, Middleware and OpenShift.

Wednesday evening 9PM – 12AM

Pick up your invitation for the party that beats all parties at: Mobile, Middleware or OpenShift demo pods in the Red Hat Booth, Partner Pavilion
LEARN. NETWORK. EXPERIENCE OPEN SOURCE.