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JBoss Enterprise Application Platform at Intuit

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Staff Software Engineer, Intuit

June 22, 2010

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Introduction to Intuit

Intuit Inc. is a leading provider of business and financial management solutions for small and mid-sized businesses; financial institutions, including banks and credit unions; consumers and accounting professionals. Our flagship products and services, including QuickBooks, Quicken and TurboTax software, simplify small business management and payroll processing, personal finance, and tax preparation and filing.

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JBoss at Intuit?

Doesn't Intuit just build desktop software like
TurboTax and QuickBooks?

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Not Anymore!

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Intuit Software Background

Back in 2002, most developers were relatively new to Java & server side development.

Older online applications were built before application servers such as JBoss were widely available

Company-wide shift to web-based applications and services in last two years. As a result...

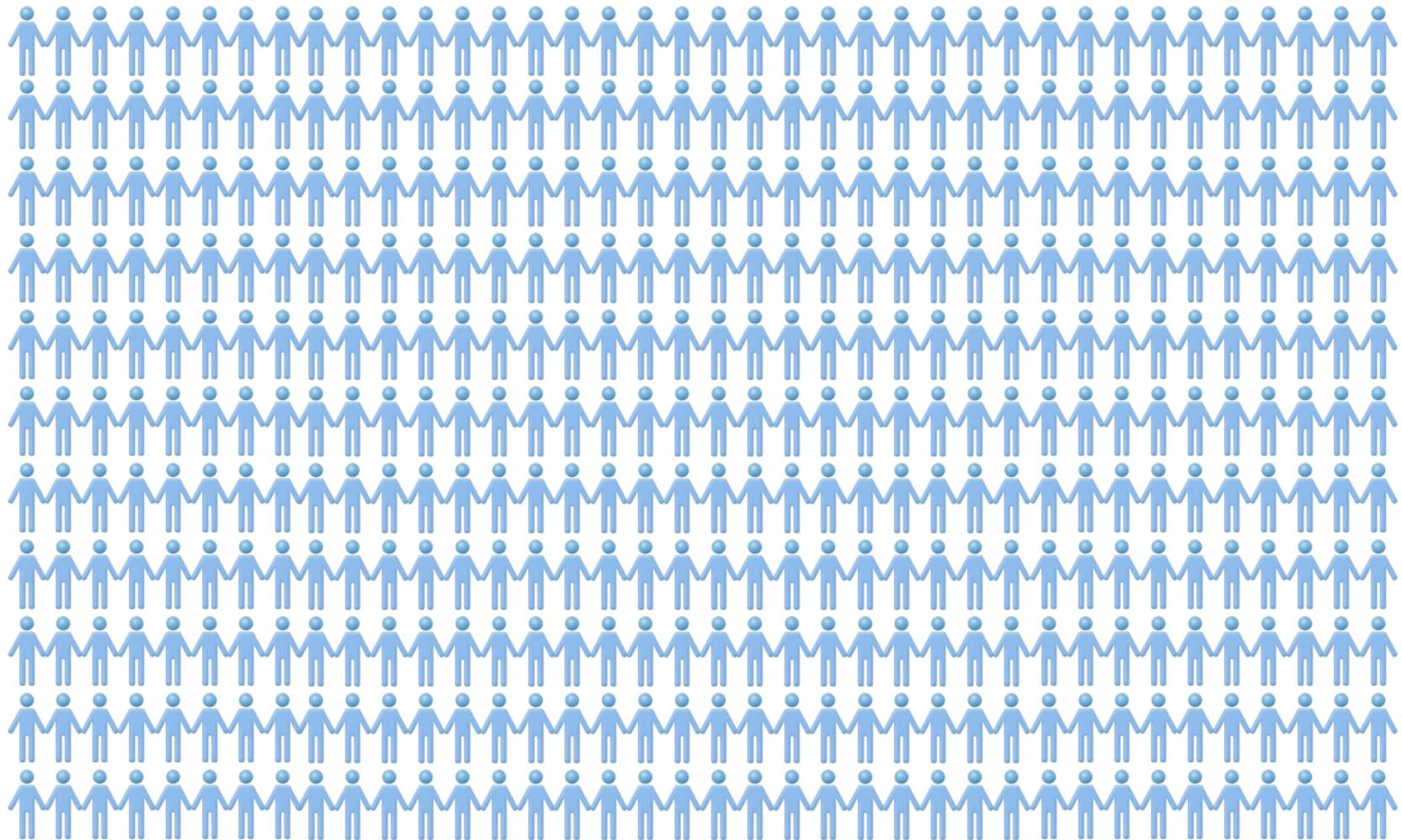
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Of the 20M who prepared their taxes using TurboTax..



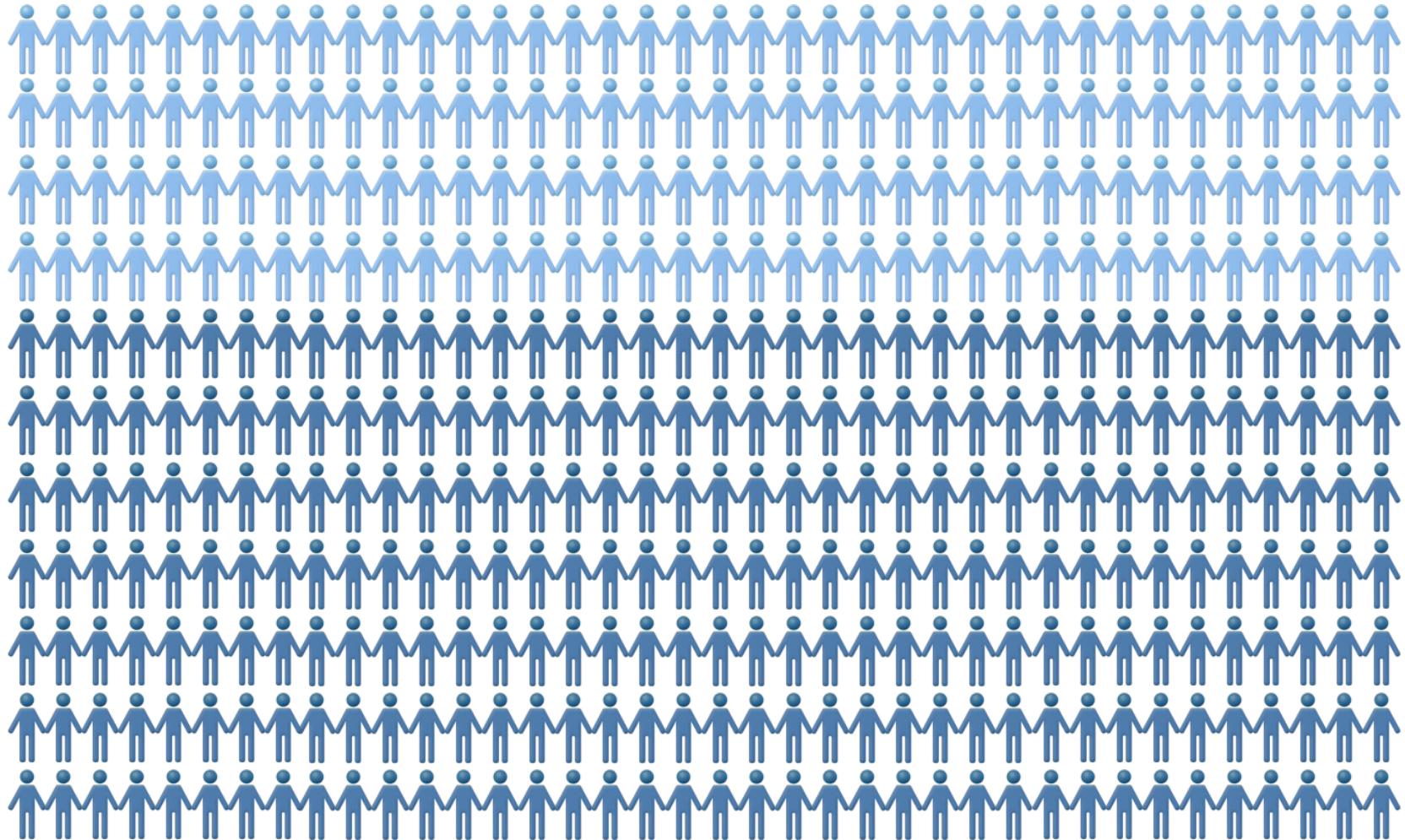
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Two thirds used TurboTax Online



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More than 7M small business customers using a variety of software and services



Intuit Websites

Intuit® QuickBooks®
Merchant Service

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Power online banking for 9.2M people through 1,900 banks & credit unions

Intuit. Financial Services

Customer Central Bank

FinanceWorks[®]
powered by Quicken[®]

Home Accounts Transactions Trends Goals Business NEW

Take a Tour Settings Sign Out Support

Accounts

- Add accounts you have at other Financial Institutions
- Checking \$3,839
My Checking \$3,839 Customer Central Bank
- Credit Card -\$2,463
My Credit Card -\$2,333 Chase Credit Card
- My Line of Credit -\$128 ⚠ Customer Central Bank
- Savings \$128
My Savings \$128 ⚠ Customer Central Bank
- Total \$1,504

Reminders

- PAYROLL is due on Feb 13 TODAY
- Creditline Debit 44 is due on Feb 20

Your Spending Money Spend Wisely!

How much can I spend? **\$608**
Until next paycheck in 14 days!

VIEW OUTLOOK ➤

Today, Feb 13

View Chart grid

My Checking Balance as of Today, Feb 13	\$3,840
Transactions Not Yet Cleared	-\$31
Upcoming Bills	-\$3,201
How much can I spend?	=\$608

Until next paycheck on Feb 27

Where is my money going?
Dec 31 2008 - Feb 13 2009
Total: \$5,506

VIEW ALL SPENDING ➤

Household	\$1,633
Auto	\$972
Dining	\$689
My Kids	\$554
Clothing	\$452
Uncategorized	\$209
All Others	\$1,000

Have a business? View All Goals ➤

Am I making my goals?
February 2009

Dining	REMAINING \$546
Auto	REMAINING \$21
Groceries	REMAINING \$330



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This year's estimated revenue

\$1 B SaaS

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JBoss at Intuit

JBossAS user since 2002

Adoption of EAP December 2007

JBoss customer since June 2005

JBossAS versions 3.2.3, 4.0.2, 4.0.3, 4.0.4, 4.0.5

EAP versions 4.2, 4.3, 5.0

EJB3, Cache, AOP, WS, Web/Tomcat, Hibernate

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Introduction to Web & Hosting Platform (WHP)

Provides

“Intuit” customized JBossAS/EAP

“Intuit” custom modules

 Authentication Module – JAAS integration with our authentication system, valves to handle OAuth based authentication

 Activity Logging Module – Servlet Filters, WS Interceptors, EJB Interceptors to do generic trace/message logging

 Wily and Splunk integration Module

Internal JBoss support

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JBoss @ Intuit History

Enterprise Application Platform vs. Community

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Enterprise Application Platform vs. Community

1.6 release: JBossAS 4.0.4 with the following patches/add-ons:

EJB 3.0_RC7-FD

JBossAOP 1.3.6

JBossWS 1.0.0.GA

JBWS-1001, JBWS-943

1.7 release: JBossAS 4.0.5 with the following patches/add-ons:

JBossWS 1.2.1.ga.cp01.jbpapp-415

JBossWS Core 1.2.0SP1.200704161459

EJB 3.0_RC9_Patch_1

JBossAOP 1.5.2.GA

JBossTS 4.2.2.GA

JBWS-1001, JBWS-1204, JBWS-943

JBoss-xml-binding-1.0.1.TEST

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Enterprise Application Platform vs. Community

1.8 release: JBossAS 4.0.5 with the following patches/add-ons:

EJB 3.0_RC9_Patch_3

JBossWS Core 12.0SP1.200705061341

JBossAOP 1.5.2.GA

JBossTS 4.2.2.GA

JBWS-1001, JBWS-1204, JBWS-943

JBoss-xml-binding-1.0.1.TEST

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Enterprise Application Platform vs. Community

2.0 release: EAP 4.2.0CP01

No additional patches/add-ons

2.1 release: EAP 4.2.0CP02

No additional patches/add-ons

4.0 release: EAP 4.2.0CP02

No additional patches/add-ons

5.0 release: EAP 4.3.0CP02

No additional patches/add-ons

5.1 used: EAP 4.3.0CP02 with the following patches/add-ons

[jbossws-native-2.0.1.SP2_CP03](#)

A patched jboss-ejb3.jar (unknown version)

A patched jboss-aop-jdk50.jar (unknown version)

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Enterprise Application Platform vs. Community

5.3 release: EAP 4.3.0CP04 with the following patches/add-ons

jbossws-native-2.0.1.SP2_CP05_JBPAPP-1937

A patched jbosssx.jar (unknown version)

6.1 release:

EAP 4.3.0.CP06

No additional patches/add-ons

EAP 5.0 with the following patches/add-ons

JBPAPP-4045

SECURITY-490

JBPAPP-3082

JBPAPP-3759

JBPAPP-3879

JBPAPP-3812

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Community Patch (In)Stability

JBWS-1001

“OK, I have verified that these failures are due to tests against a newer version of JBossXB, as well as a test run problem that expects an ejb3 client jar that does not exist in 4.0.4 So IMO we are ok to release.”

JBWS-1204

“I have a problem invoking an RPC style service. It used to work on jbossws-1.0.2.GA but now fails on 1.0.3.GA”



Community Patch (In)Stability

JBossAOP 1.3.6

Upgrade jboss-aop to 1.3.6 to cope with incompatibilities in javassist 3.2.0CR1

JBossAOP 1.5.2

“Is it possible there is an incompatibility with AOP dated 9-22-2006 currently bundled with JBoss 4.0.5.GA?”

“You will probably need to run the installer and pick the EJB 3.0 option to see the issue.”

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Support Ticket EAP vs. Community

Community

June 2005 – August 2008

304 JBossAS tickets, ~8/month

22 Severity 1 (Urgent) or 2 (High) tickets

EAP

August 2008 – November 2009

117 tickets, ~7 /month

71 Severity 1 (Urgent) or 2 (High) tickets

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Intuit Cloud Packaging, Provisioning

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Intuit Cloud - Packaging

Standardized on RPM packages

Ability to install, upgrade, uninstall individual modules

Web interface to track installations via RPM queries

Provides ability to notify customers of critical patches, upgrades, and issues

Yum groups for commonly used components (e.g. custom modules)

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Intuit Cloud - Provisioning

Web-based

RHEL 5 VMs

WHP provisions both JBossAS and EAP

Apache Web Server

Oracle DB

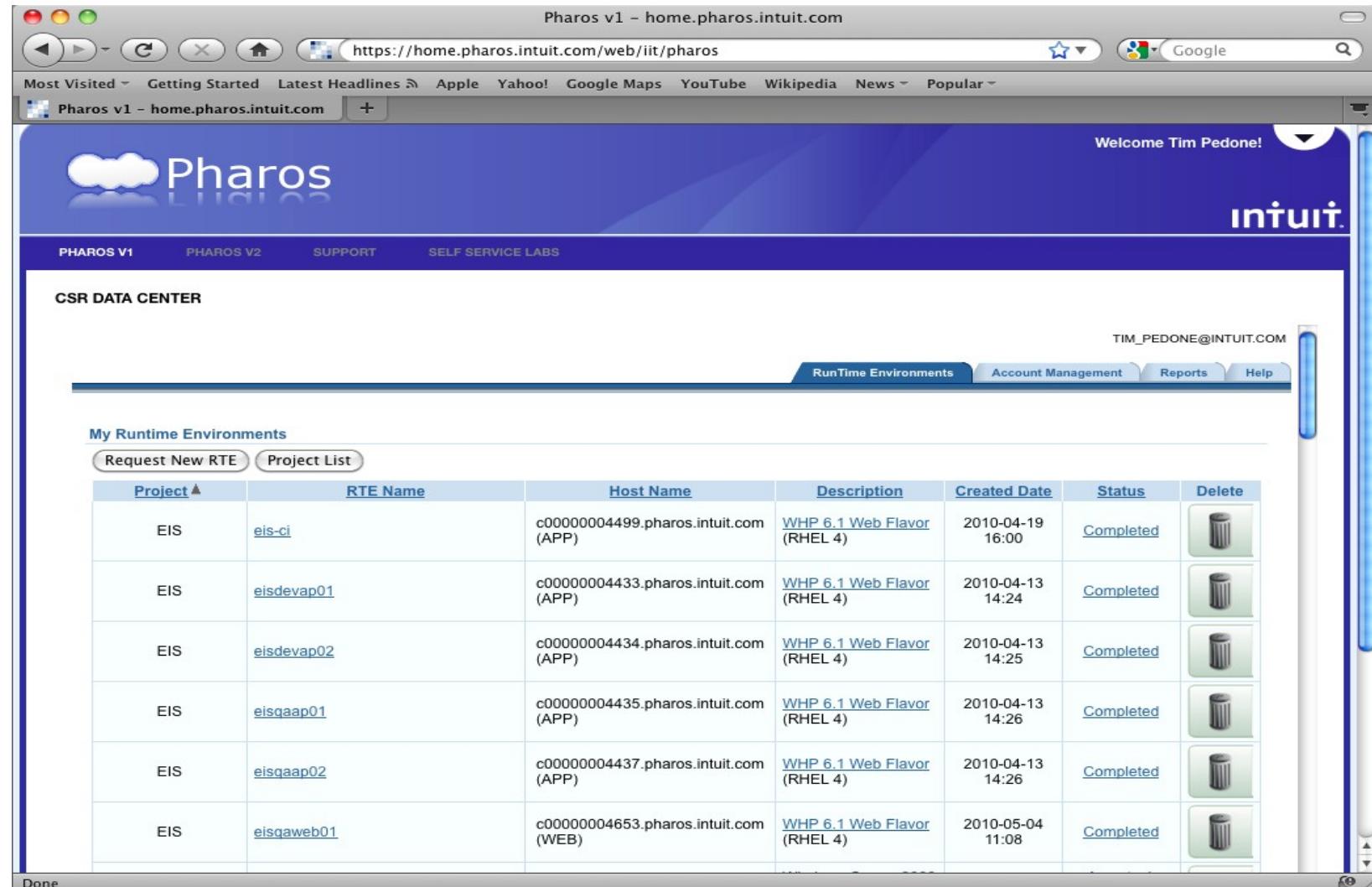
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Project VM Instances



Pharos v1 – home.pharos.intuit.com

https://home.pharos.intuit.com/web/iit/pharos

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Pharos v1 – home.pharos.intuit.com

Welcome Tim Pedone!

CSR DATA CENTER

TIM_PEDONE@INTUIT.COM

RunTime Environments Account Management Reports Help

My Runtime Environments

Request New RTE Project List

Project	RTE Name	Host Name	Description	Created Date	Status	Delete
EIS	eis-ci	c00000004499.pharos.intuit.com (APP)	WHP 6.1 Web Flavor (RHEL 4)	2010-04-19 16:00	Completed	
EIS	eisdevap01	c00000004433.pharos.intuit.com (APP)	WHP 6.1 Web Flavor (RHEL 4)	2010-04-13 14:24	Completed	
EIS	eisdevap02	c00000004434.pharos.intuit.com (APP)	WHP 6.1 Web Flavor (RHEL 4)	2010-04-13 14:25	Completed	
EIS	eisqaap01	c00000004435.pharos.intuit.com (APP)	WHP 6.1 Web Flavor (RHEL 4)	2010-04-13 14:26	Completed	
EIS	eisqaap02	c00000004437.pharos.intuit.com (APP)	WHP 6.1 Web Flavor (RHEL 4)	2010-04-13 14:26	Completed	
EIS	eisqaweb01	c00000004653.pharos.intuit.com (WEB)	WHP 6.1 Web Flavor (RHEL 4)	2010-05-04 11:08	Completed	

Done

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Provisioning

Pharos v1 – home.pharos.intuit.com

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Pharos v1 – home.pharos.intuit.com

Welcome Tim Pedone!

CSR DATA CENTER

TIM_PEDONE@INTUIT.COM

RunTime Environments Account Management Reports Help

Request New RTE

Project: SPC

Cloud Type: Intuit Cloud

RTE Topology: 1 Web + 1 App + 1 DB

RTE Template: WHP 6.1 (Mar 2010): whp-ws Flavor (RHEL 4)

Flexible Configuration

Apache JBoss Oracle DB

RTE Details

RTE Name: MyTestVM

Notification Email Address: tim_pedone@intuit.com

Extended sudo privilege: No

My Usage

BU Name	Project Name	Quota Type	Limit	Usage	Available
SPC	EIS	1+1+1	0	0	0
SPC	EIS	All-in-one	15	6	9
SPC	EIS	External	0	0	0
PDIT	Personal	All-in-one	200	190	10
PDIT	Personal	Windows	100	81	19
SPC	SPC	1+1+1	5	0	5
SPC	SPC	All-in-one	66	62	4
CTO	MacPilotDevelopers	Windows	25	4	21
CTO	MacPilotDevelopers	1+1+1	0	0	0
CTO	MacPilotDevelopers	All-in-one	20	0	20
CTO	MacPilotDevelopers	External	0	0	0

1 vm Per Developer (You can choose either a Linux VM or Windows VM)

VM Pool	Limit	Usage	Available
Windows	100	81	19
Linux VM Pool	200	190	10

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VM Details

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https://home.pharos.intuit.com/web/iit/pharos

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Pharos v1 – home.pharos.intuit.com +

Pharos intuit

CSR DATA CENTER

Edit	RTE Name	Description	Topology	Job#	Env ID	Status	Delete
Edit	eis-ci	WHP 6.1 Web Flavor (RHEL 4)	All-in-one	13126	4178	ONLINE	

Configuration Details

Code	Details
Env Type	Dev

Container Details

Node Name	Code	Value
c00000004499.pharos.intuit.com	Instance Size	Small
c00000004499.pharos.intuit.com	Security Zone	Default

Associated Template

Name	Description	Version	Owned By
WHP 6.1 (Mar 2010): whp-web Flavor	WHP 6.1 Web Flavor	6.1	PDIT

Software Deployed To Container

Container Name	Component
c00000004499.pharos.intuit.com	apache-ant-whp Intuit 1.0.0.0 INTUiptadm Intuit CIO ECS CPM Team 1.3.0 whp-jboss-web-4.3 Intuit SPC WHP 6.0.2.0 whp-auth Intuit SPC WHP 6.1.0.0 View All Installed Software
c00000004499.pharos.intuit.com	spc-jboss-6.1-whp-web

WARNING!

You are requesting additional sudo privileges. These privileges could damage your environments as well as others who are using Pharos. In order to prevent the damage we are strongly recommending that you

1. Do not install large files in the root file system. All data (files, code, etc.) should be stored in /pharos/env/\$env_id (where \$env_id is something like env_278).
2. Do not reboot machine. Send your reboot request by logging a ticket in [HDRequest](#).
3. Do not change the root password.

Done

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Provisioning Lessons Learned

Stay as “stock” as possible

Pushback on modifications to base JBoss

Customizations incorrectly blamed for issues (e.g. Cargo interoperability)

Modularity

No “big bang” releases

Adds complexity, but allows upgrades to individual components

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