



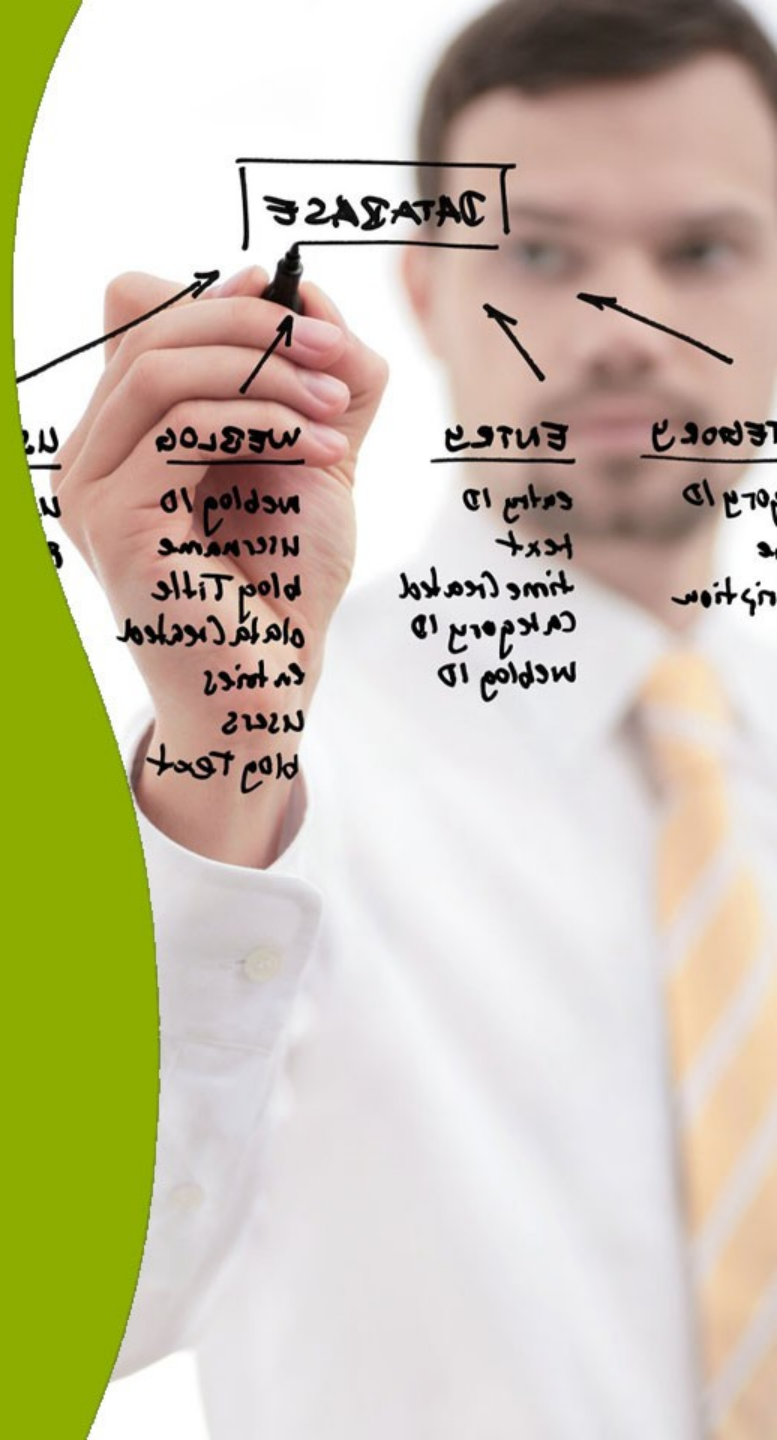
Java Update 2008 JAVA+YOU

テクノロジーでお腹一杯に

サン・マイクロシステムズ株式会社
新規ビジネス開発本部

Technology Market&Community Development
統括部長

藤井 彰人 <http://blogs.sun.com/akihito>
akihito.fujii@sun.com



Topics to cover today

- Java の最新動向
 - > JavaOne 2008/CommunityOne 2008
 - > RIA
 - > JavaFX
 - > JavaSE
 - > JavaEE
 - > JRuby
 - > SOA
 - > Cloud/Concurrent Computing
 - > Social Application
 - > Mashup
- 最後に

世界最大級の ソフトウェア 開発者会議

今年で 13 回目

4 日間で
11 トラック
300 セッション



5/6 より 4 日間
米国サンフランシスコ
モスコーンセンターにて開催

1 日で
12 トラック
70 セッション

communityOne

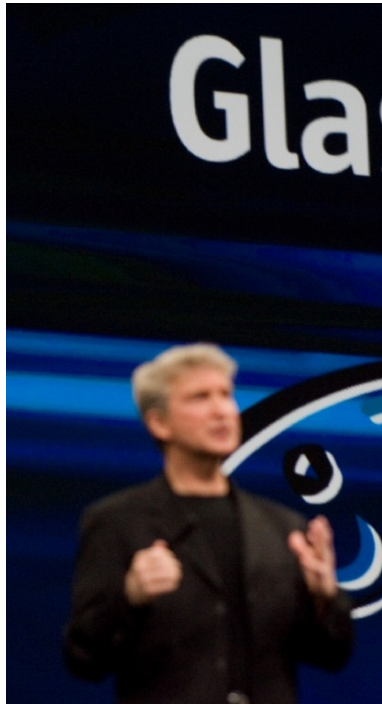
OpenSPARC から
Web アプリケーション
のオープンソースプロジェクト
をカバー

AMA + YOU



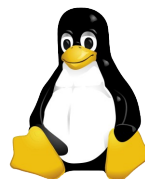
JavaOne 2008

JavaFX Applets

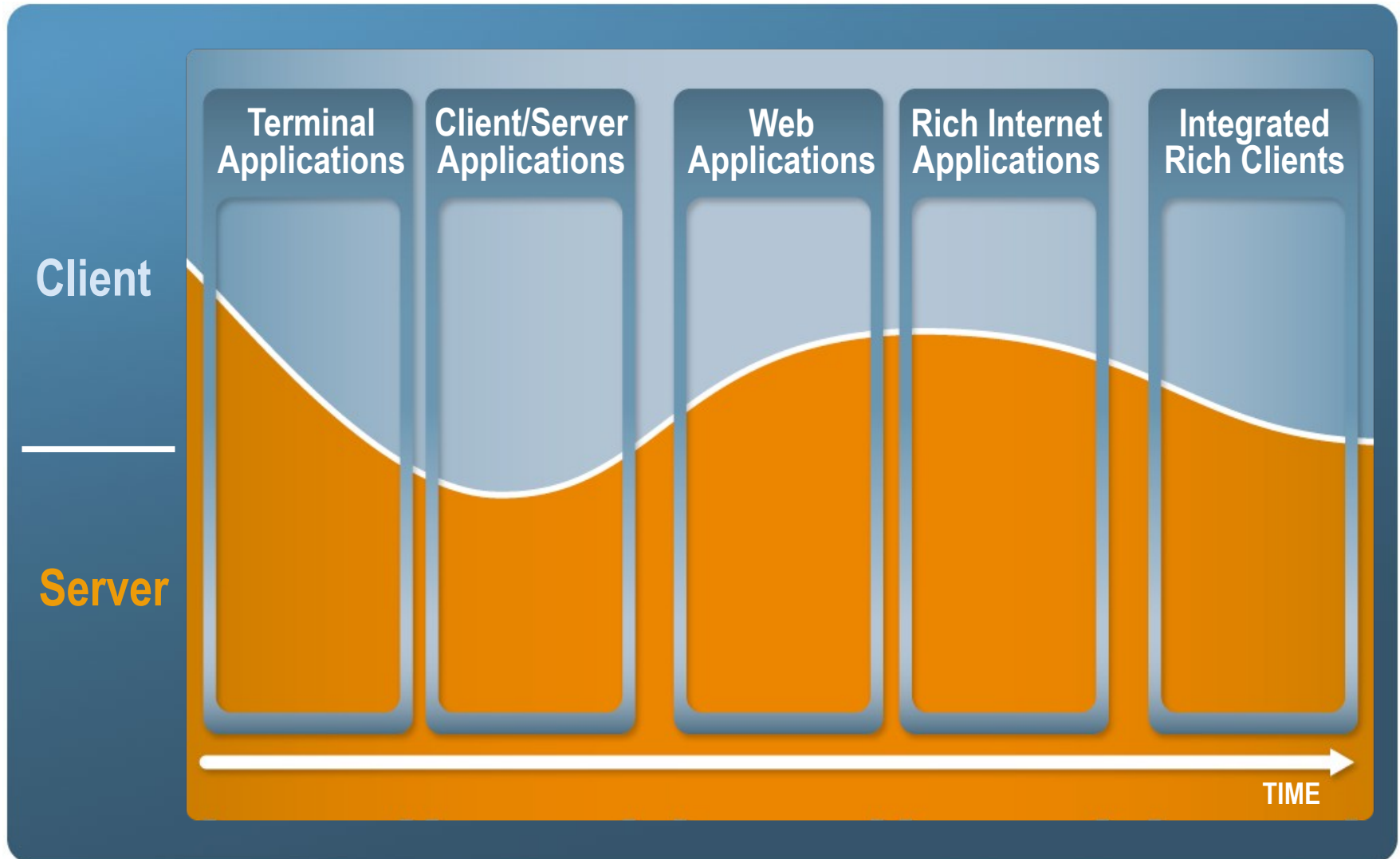


Java の普及

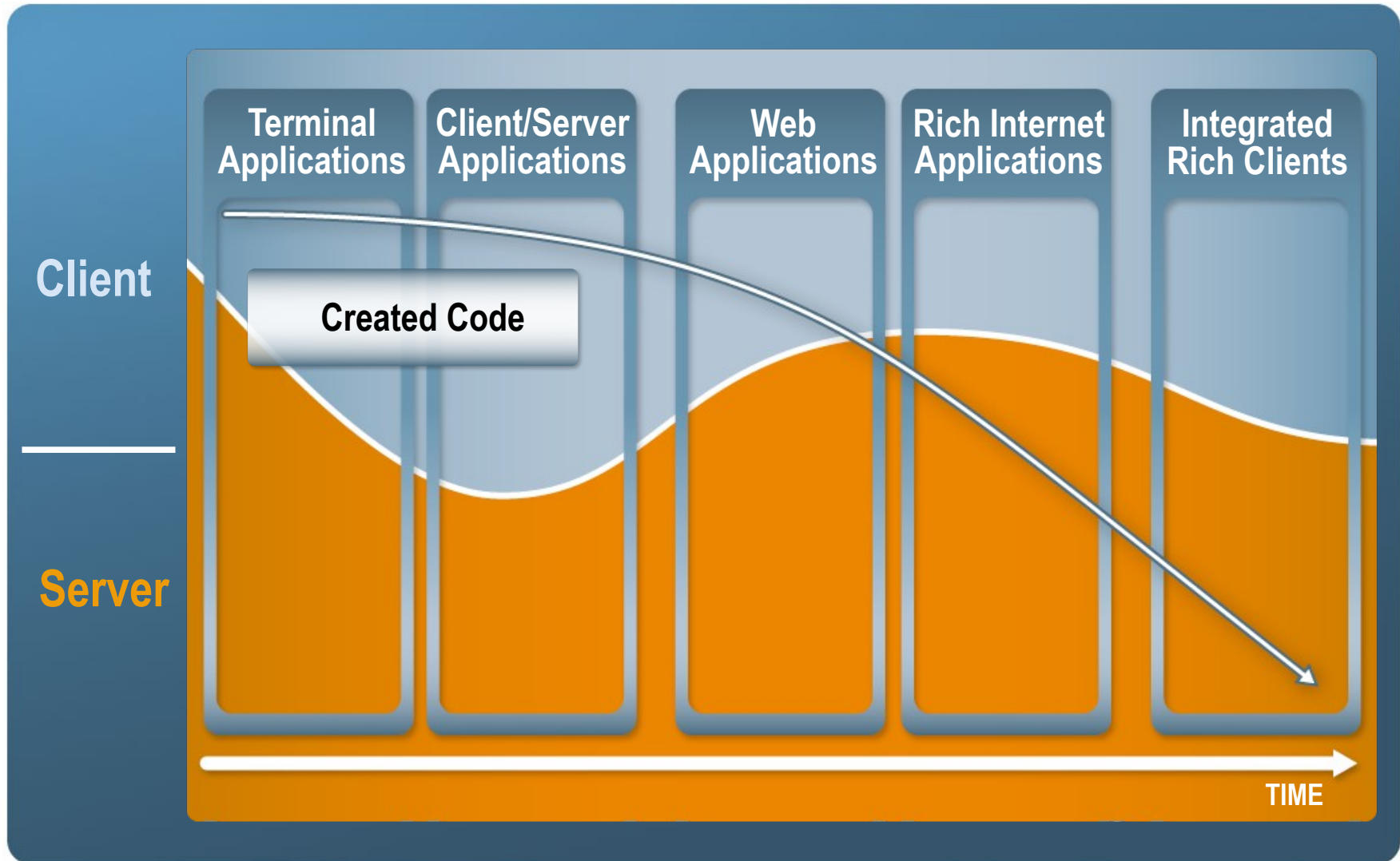
- 普及の勢いはさらに加速している
 - > NetBeans
 - 44%+ Y/Y Active Users
 - > JRE
 - 91% Desktop
 - 85% Mobile Phone
 - 100% Blu-ray ビデオプレーヤとゲーム機
 - 60 億の Java 搭載機器が世界中に普及
 - > ubuntu / Red Hat にバンドル
 - > MySQL
 - 65,000 ダウンロード / 日



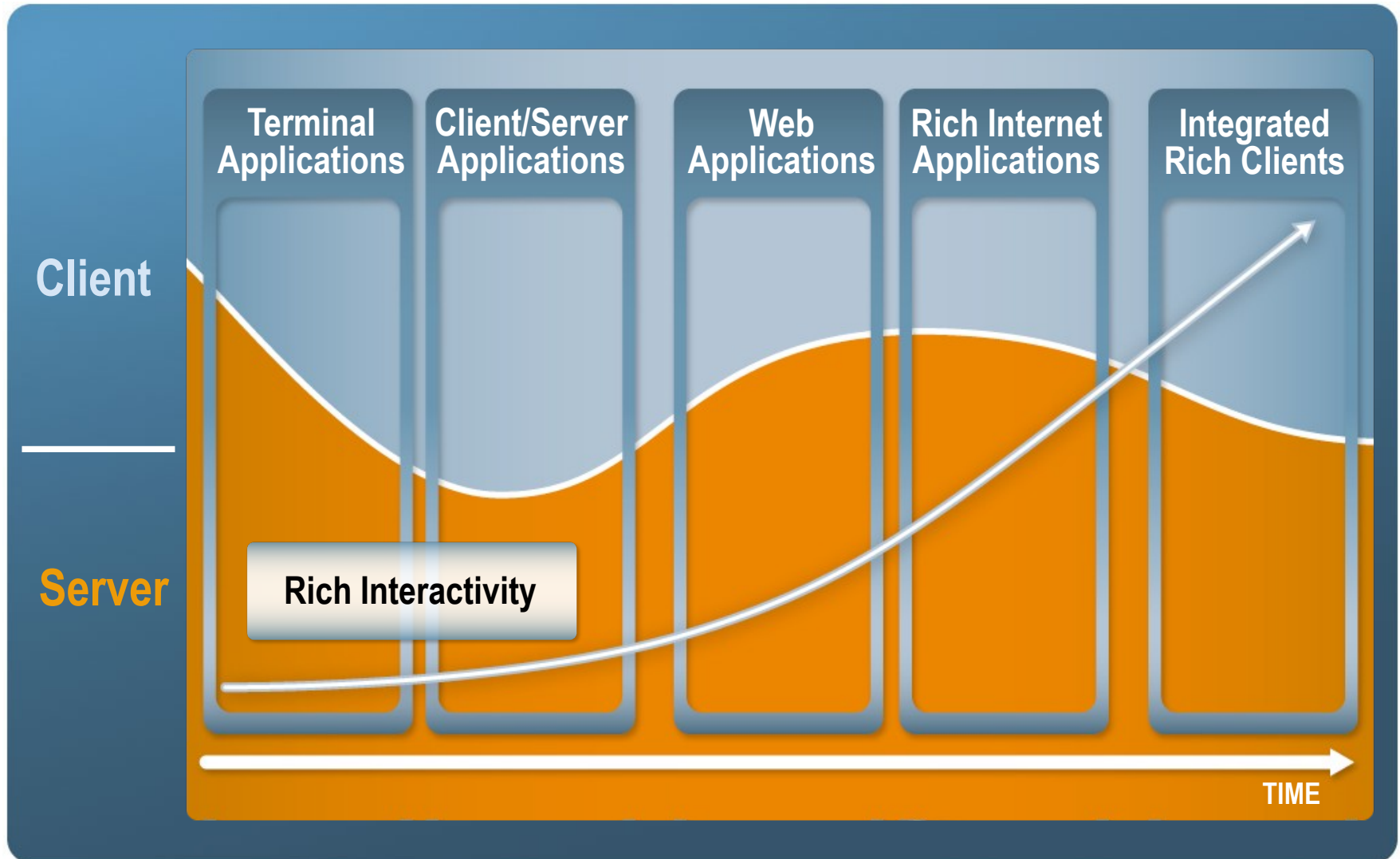
Evolution or Revolution?



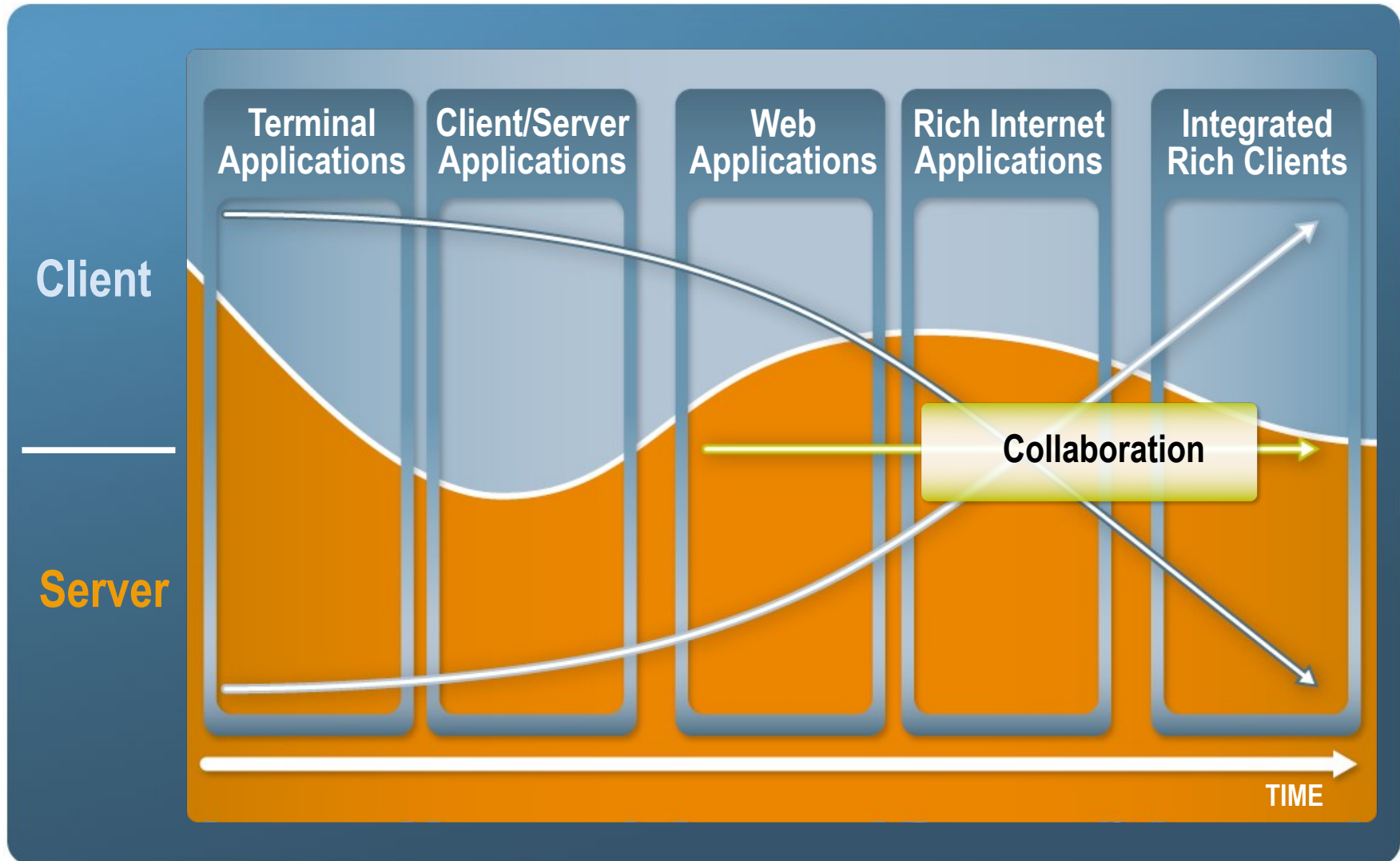
Re-use – Assembly vs. Creation



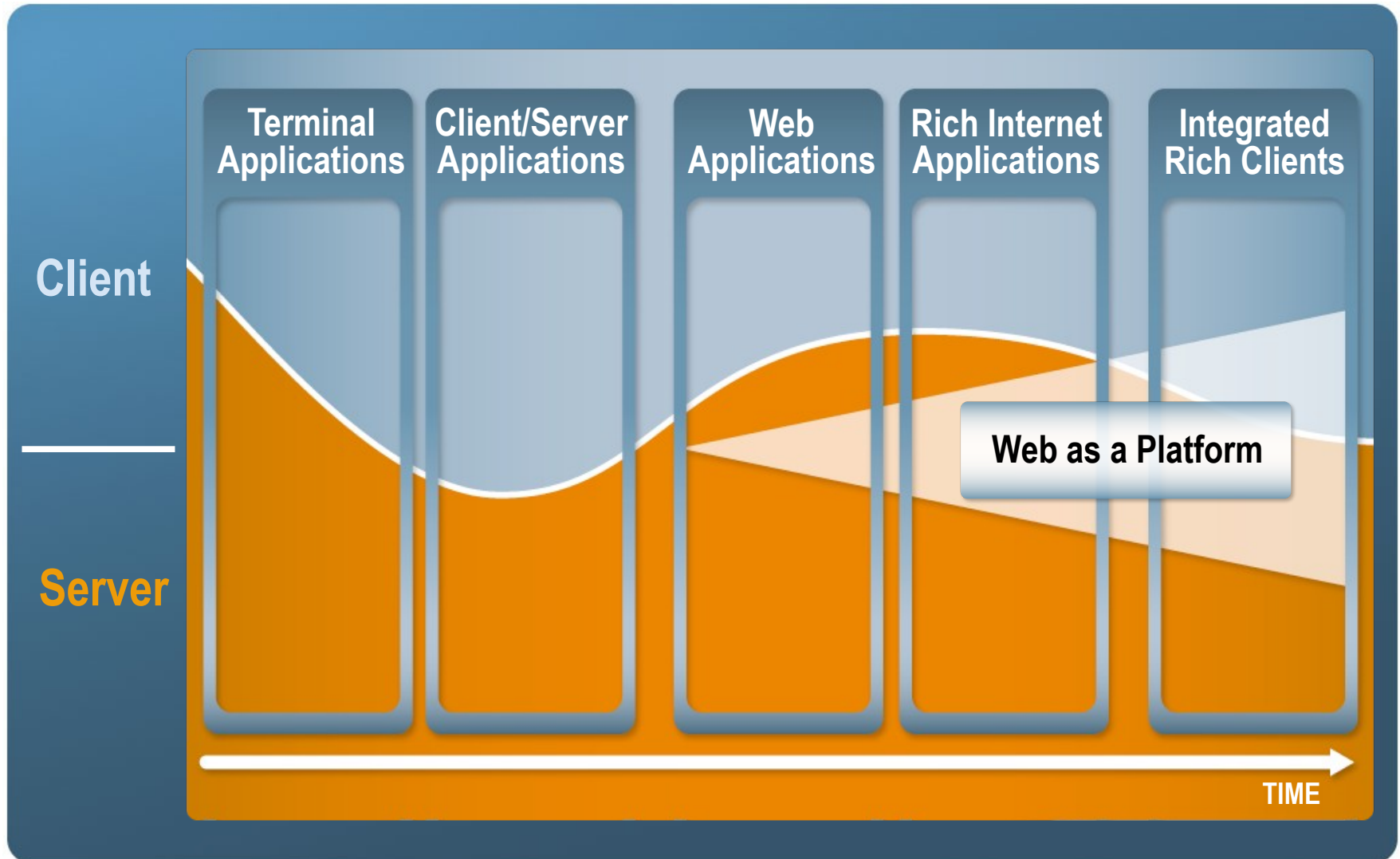
The Need for Rich Media and Content



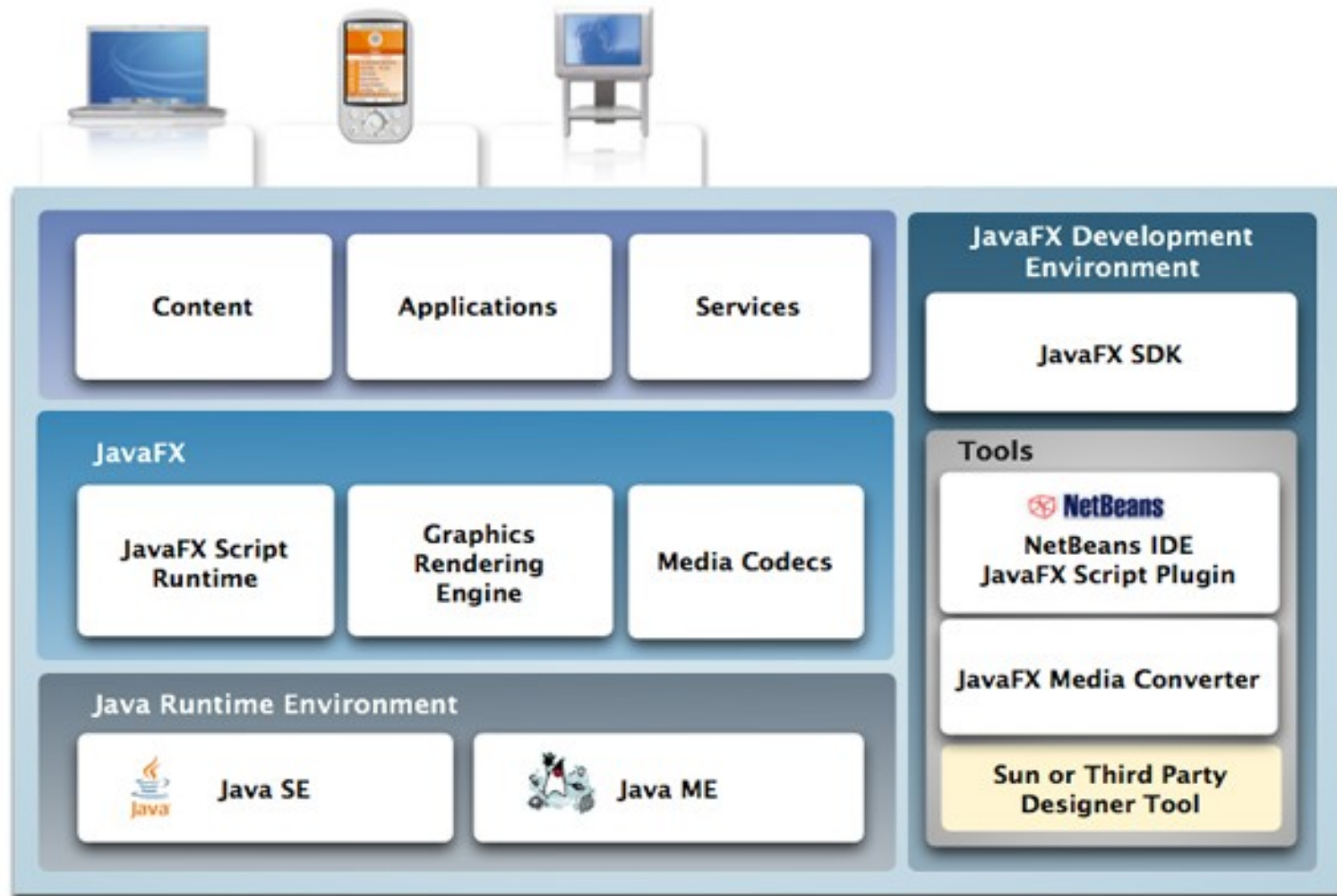
Collaboration and Interactivity



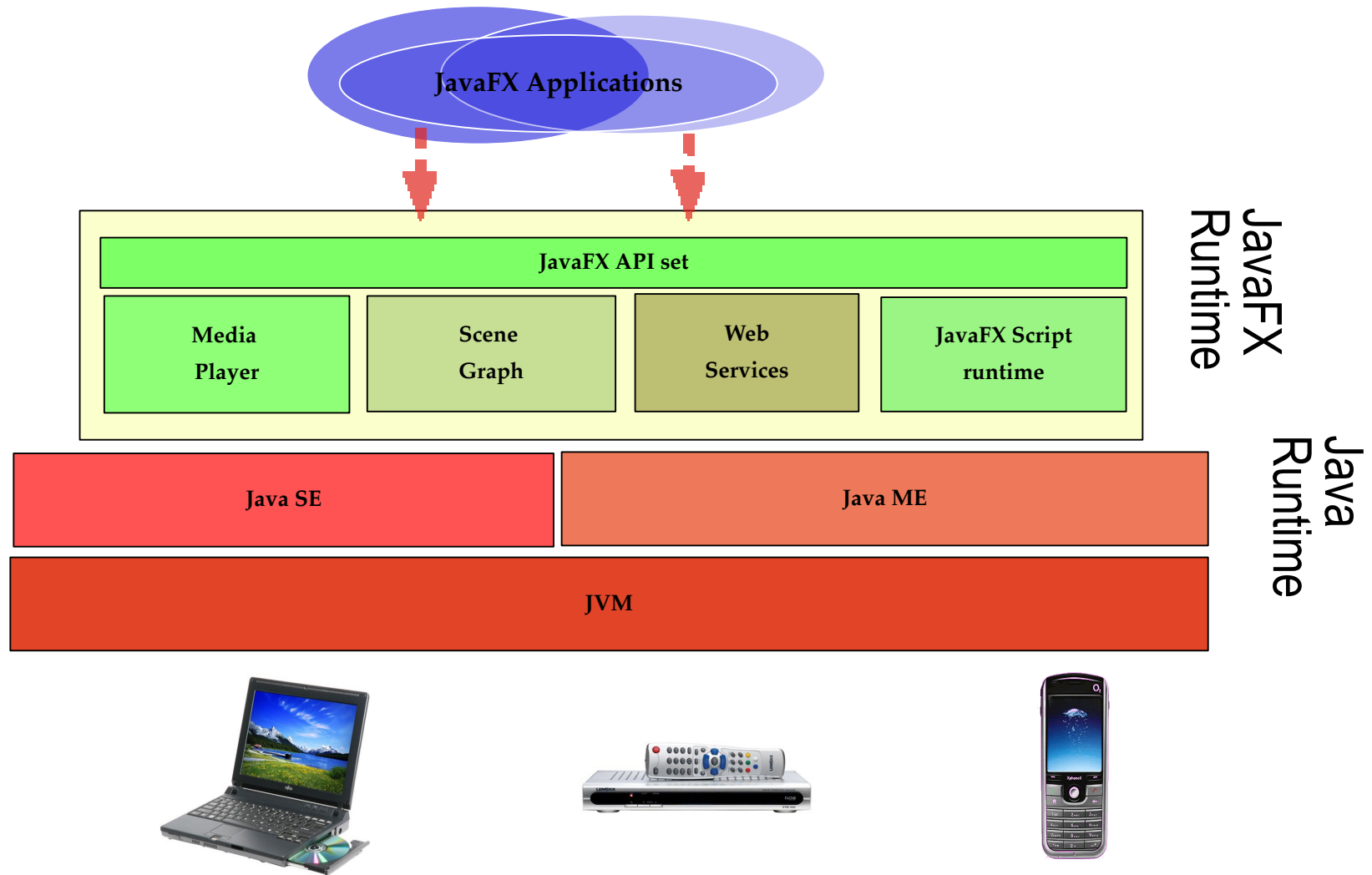
The Integrated/Interactive Experience



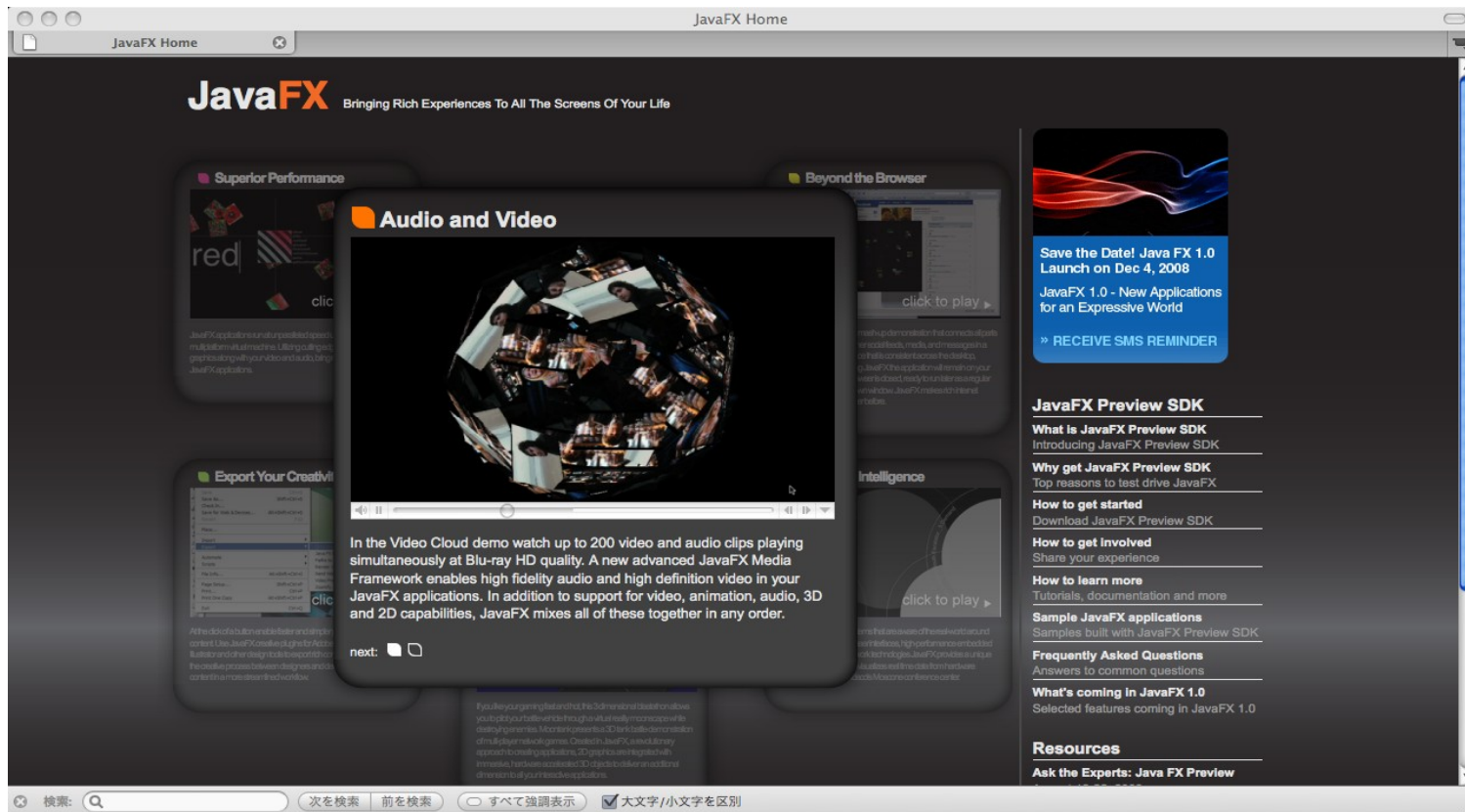
JavaFX



JavaFX Runtime



JavaFX.com



<http://javafx.com/> 12/4 JavaFX 1.0 release

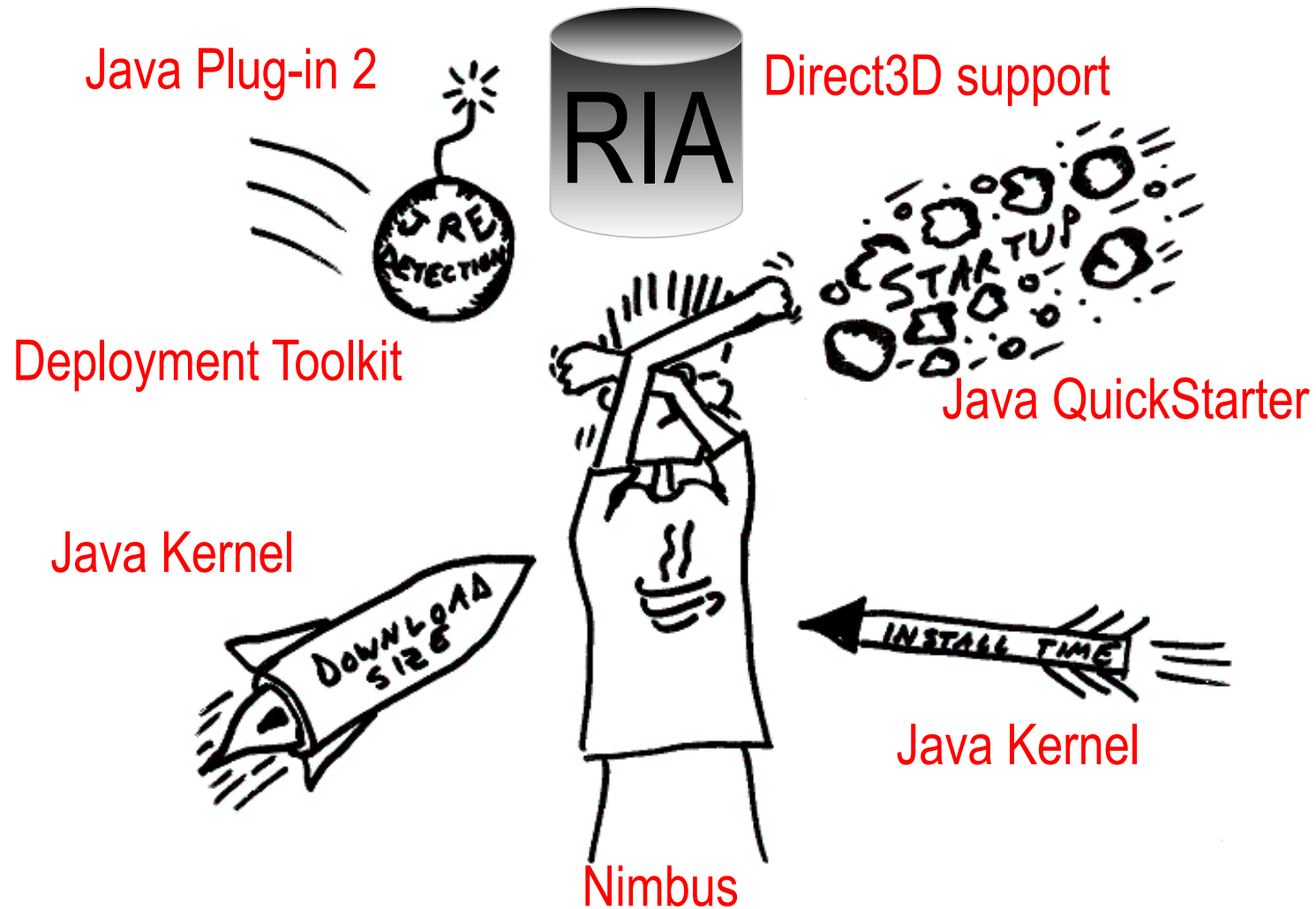
Java SE 6 Update 10

- Java SE 6 のアップデートリリース
 - > 新しい製品ラインなどではありません
- 通常の Update にはない、多くの改善、機能
 - > クライアント Java を主眼に置く



java.com

Update 10 新機能 |||



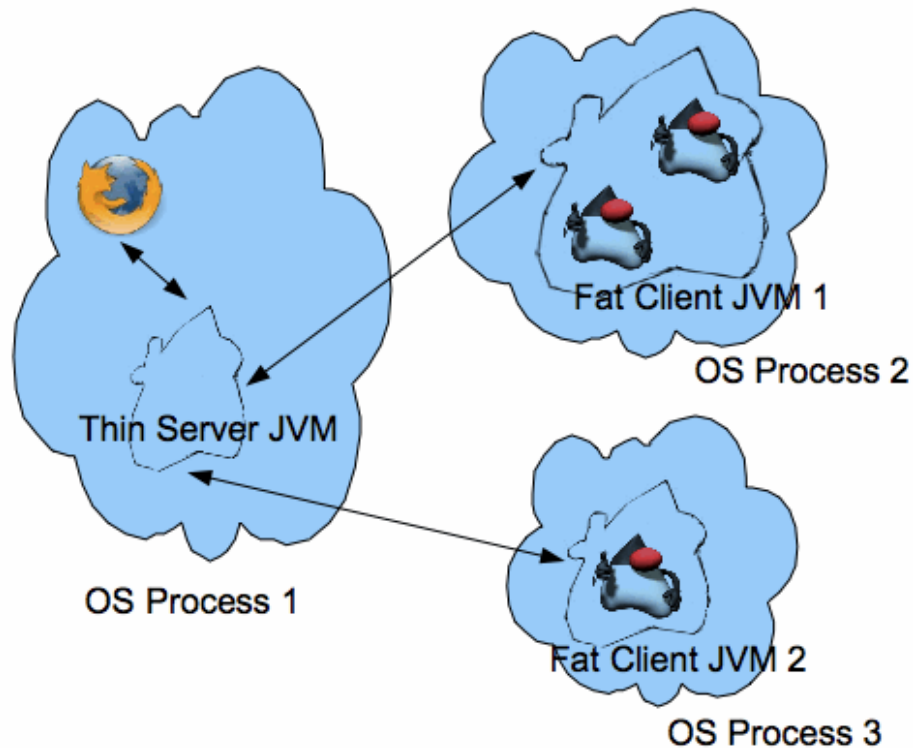
<https://jdk6.dev.java.net/6uNea.html>

新 Java Plug-in アーキテクチャ



JavaOne

Architectural Overview

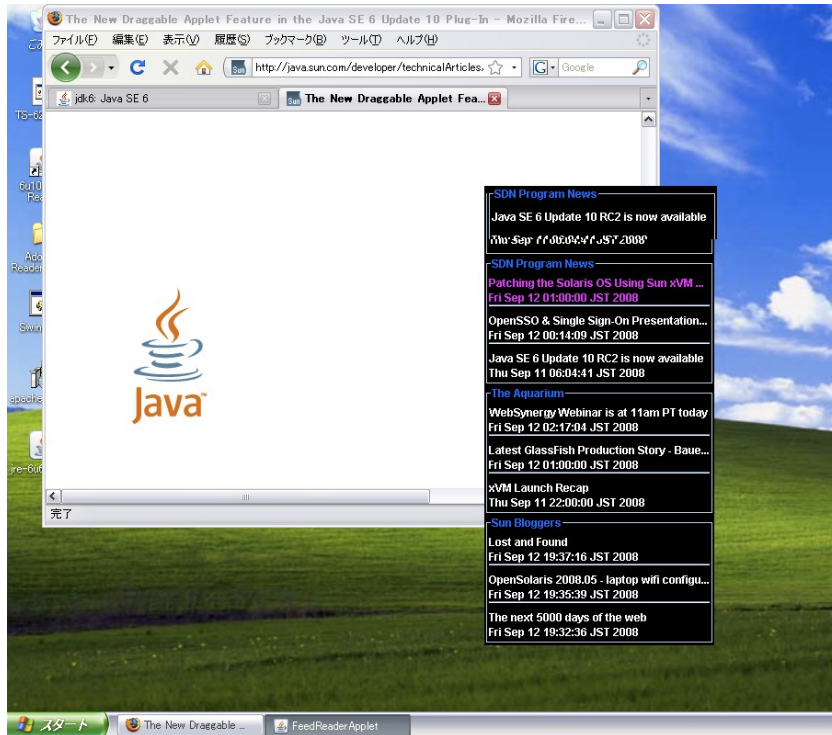


新 Java Plug-in - 利点 -

•利点は

- > 信頼性向上 -- 仮に JVM がクラッシュしてもブラウザに影響しない
- > アプレット毎に -Xmx などの VM コマンドラインオプションを指定可能
- > 複数アプレットを複数バージョン JRE 上で同時実行可能
- > ヒープサイズを大きくとれる
- > 署名されたアプレットが Vista 上で完全な権限で実行されない問題を解決
- > Java Web Start と一貫性のあるアプリケーション開発など

新 Java Plug-in - ドラッグ & ドロップ



- アプレット自体をデスクトップに移動可能
- アプリケーション配備の新しいパラダイム
- まだ実験的な機能。

```
<param name="draggable" value="true">
```

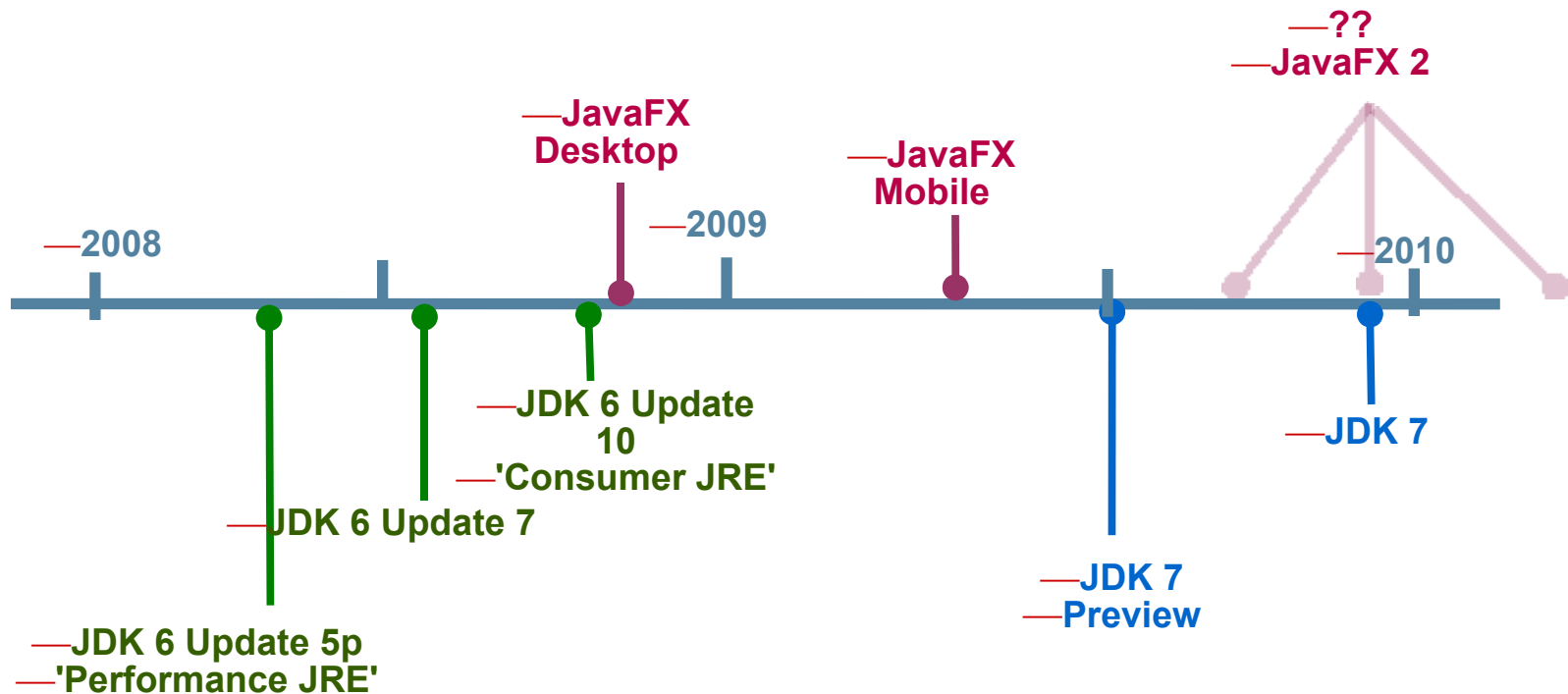
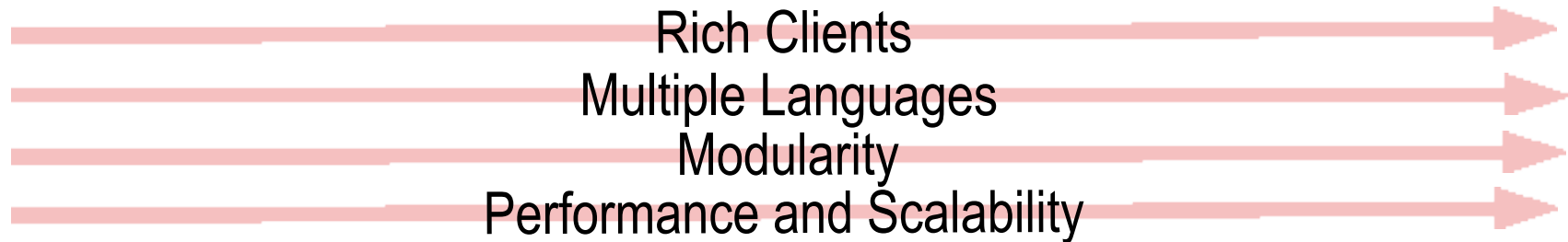
Java SE 7

- 2009 年夏
- モジュール化
 - > openjdk.java.net/projects/modules
- 複数言語
 - > Project DaVinci
- Rich Client
 - > Applet is back!
 - > Java FX Script
- OSGi



OpenJDK

Java SE, JavaFX Roadmap



The Java Real-Time System

- スループットより予測可能性が重要な場合
- 通常の Java SE API と言語
- Task ベースのプライオリティ付けのための API 拡張
- Real-time GC
- リアルタイム OS (Solaris/Linux)
- ハードの拡張でスループットを拡張

java.sun.com/realtime

Java EE 6

- テーマ

- > Rightsizing
 - Flexibility
 - Focus
 - Simplification

- 機能

- > Profiles
- > Pruning
- > Extensibility
- > More EoD
 - Annotation Across Web APIs
 - No Editing of Web.xml
 - Self-registering Third Party Libraries
 - Restful Web Services
 - Scripting as an Extension
- > Packaging
 - Class -> war

GlassFish v3

- モジュール設計、拡張性
 - > アドインモジュール HTTP Listener
- OSGi-based
- 小さいサイズ，高速な起動
- マルチコンテナ対応
- 複数のスクリプト言語対応



Multiple Languages: JDK 7

- Broadening the JVM to accelerate runtimes
- Bytecode for dynamic invocation
 - > Anonymous classloading
 - > Lightweight method handles
 - > Optimized dynamic invocation
 - > Continuations and tail call optimizations
- DaVinci Project: openjdk.java.net/projects/mlvm
 - > Draft specification & prototype available
 - > JRuby is the pioneer
 - > Sept 2008: <http://jvmlangsummit.com>

JRuby

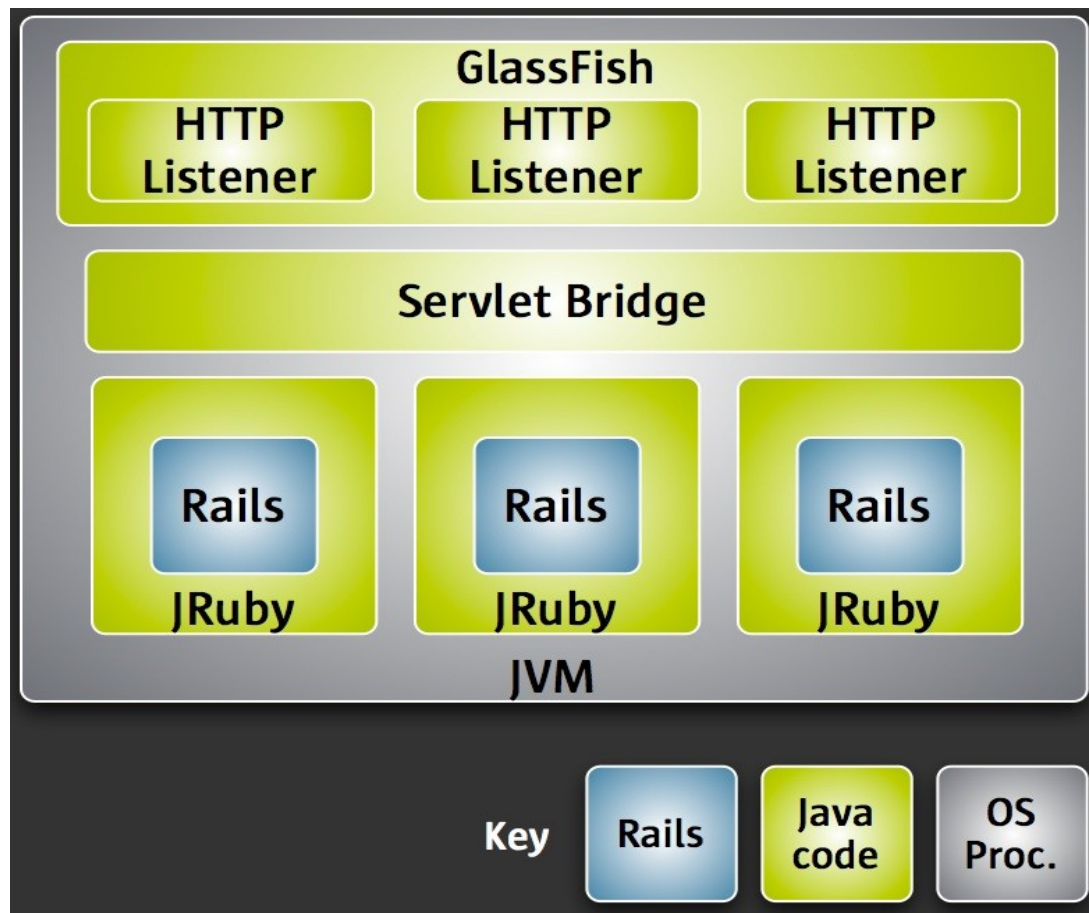


- JRuby を使いませんか？
 - > Download JRuby 1.1.5 and run your applications
 - > JRuby is Ruby
 - > JRuby is Java
 - > NetBeans
 - > GlassFish



JRuby on Rails

- 1つの Application Server 上で Listener を実行

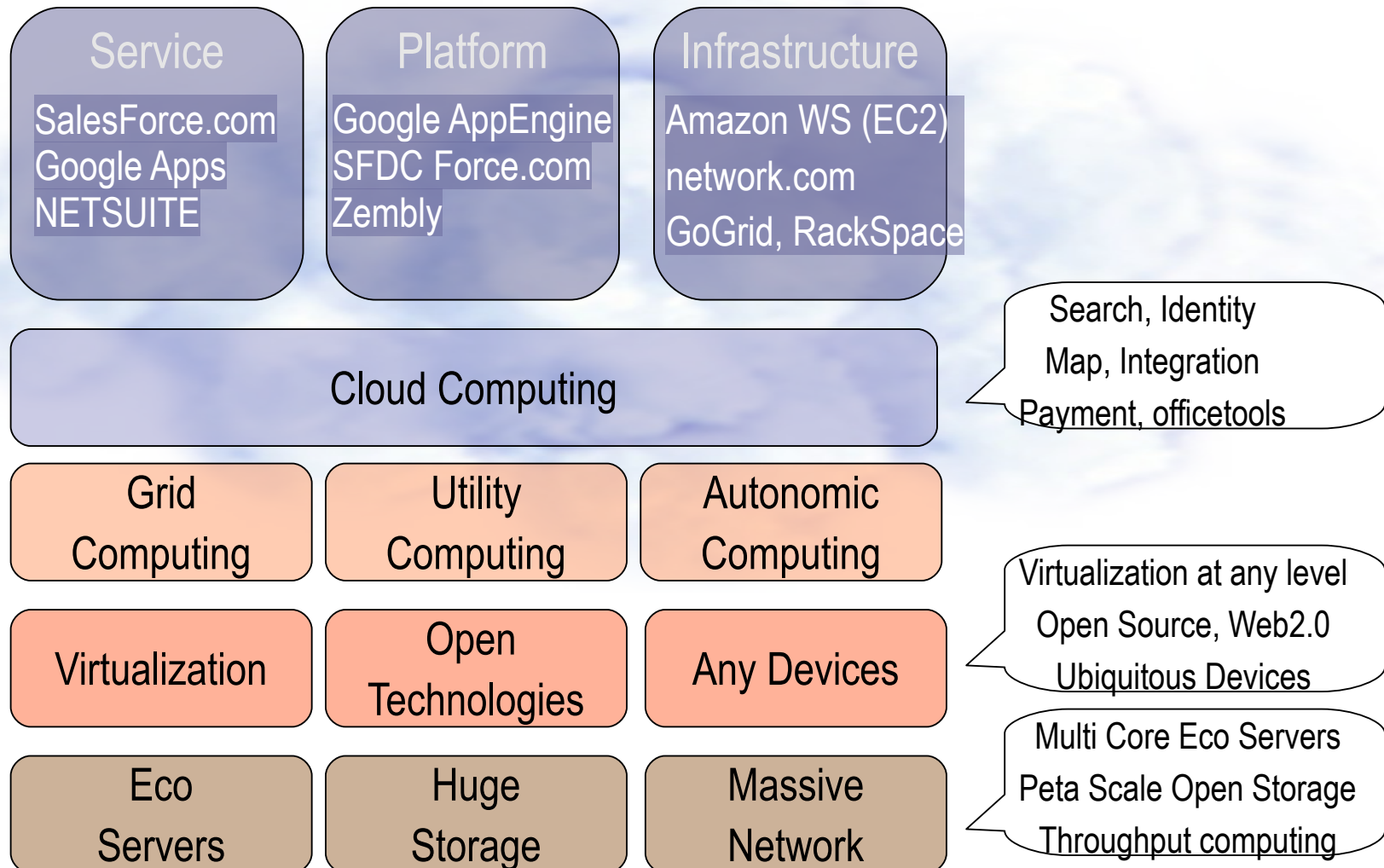


JRuby and Swing!

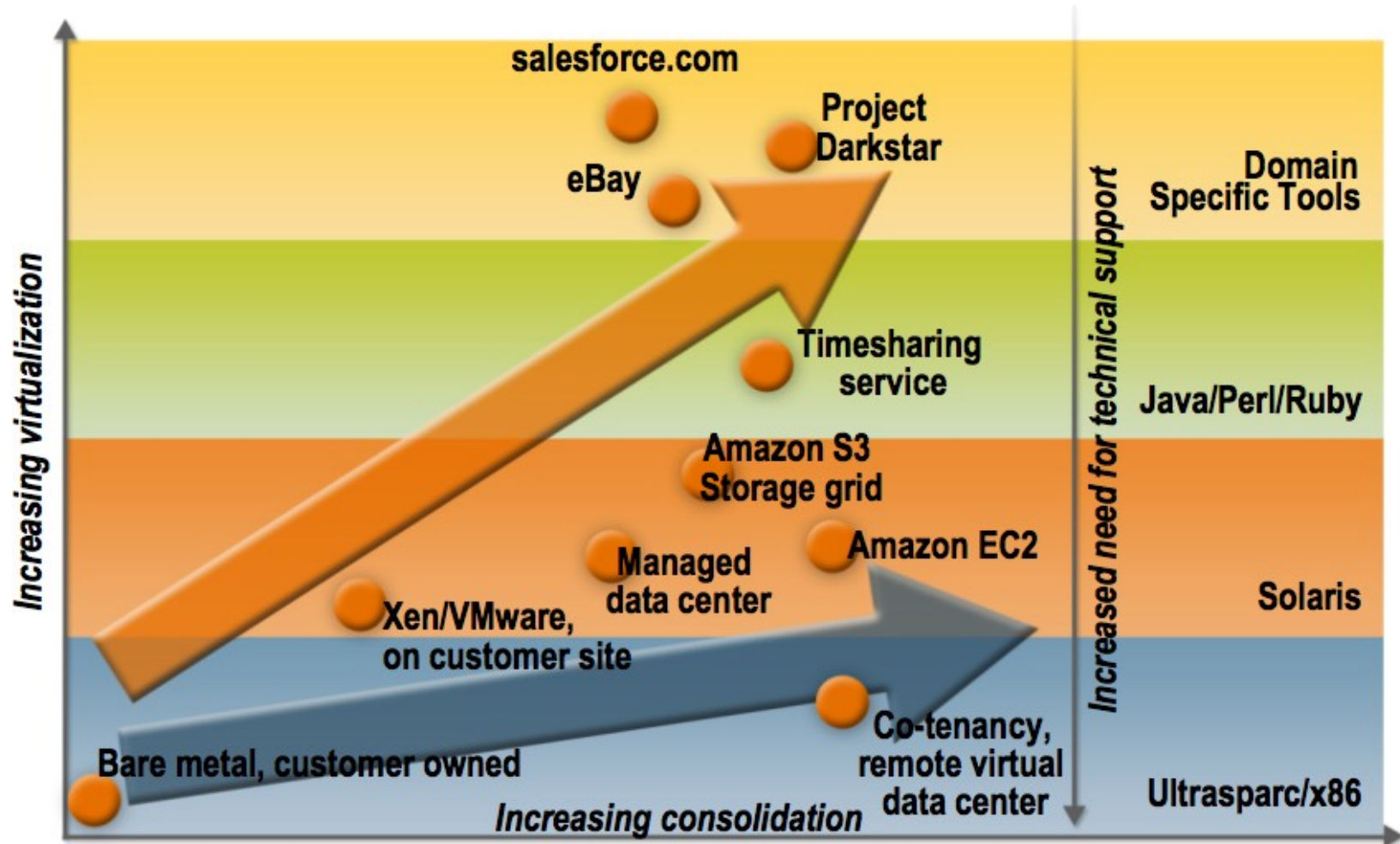
- Rubyists が JRuby を使って Swing libraries を利用
 - > Cheri, Profligacy, Rubeus, Monkeybars, Swiby, Limelight
- 利点
 - > No OS library dependency
 - > Cross-platform on all OS's
 - > Swing is a full-featured framework
- それぞれの理由から
 - > Different styles
 - RAD-based (Matisse GUI builder), Builder/DSL-based, Cleanup Swing syntax in Ruby



Cloud Computing – The Network is the Computer



背景：集約・統合と仮想化



開発者の視点

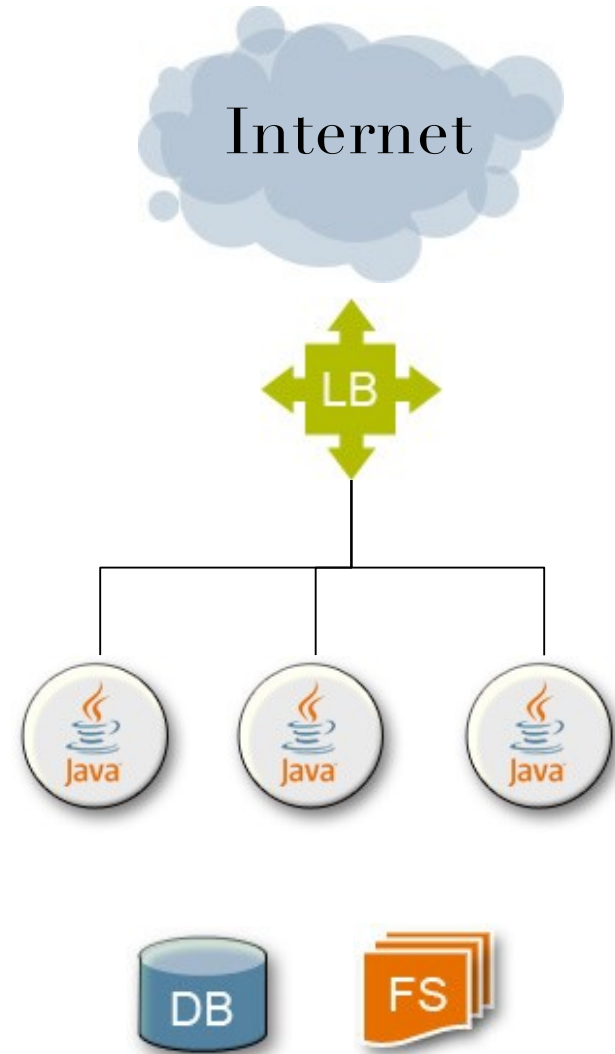
プラットフォーム
のリソース



サービスを実装する
コード

LB プロセスと
バックエンドの
DB への接続を
使った起動サー
ビス

実行時の要求に
応じた
柔軟なプロセス



プラットフォームのリソース

- プロセス (Java, Perl, Python)
- ZFS ファイルシステム (NFS, WebDAV 経由)
- PostgreSQL DB
- Network (VLAN)
- IP アドレス (プライベート、インターネット)
- インターネット接続 (LB, NAT, VPN)
- DNS レコード (ホスト名 ↔ IP アドレス)
- ...

Java Concurrency Utilities

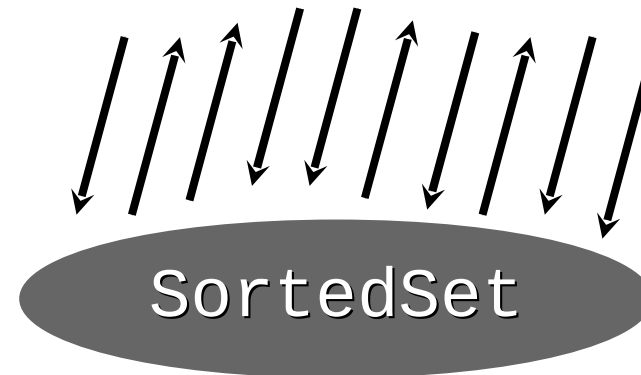
- `java.util.concurrent` パッケージ
 - Executors: 非同期なタスク実行のためのフレームワーク
 - Concurrent Collections: 並列実行可能なコレクションデータ型
 - BlockingQueues: 状態に応じてブロックされるキューデータ型
 - Synchronizers: スレッド間の同期のためのライブラリ
- `java.util.concurrent.locks` パッケージ
 - ロックと条件変数
 - より柔軟な同期制御
- `java.util.concurrent.atomic` パッケージ
 - 各種のアトミック変数
 - ロックを使用しない処理を実現

円周率を計算する

- 40000 桁 ステルマー (Stoermer) の公式を使う
- 3.141592653589793238462 ... 52473837651
- Intel Core2 Duo, 1.8GHz
 - 3 タスクに分割して実行 - 24.971 秒
 - 31 (15 + 9 + 7) タスクに分割して実行 - 35.214 秒
- SPARC T1, 1.4GHz
 - 3 タスクに分割して実行 - 24.962 秒
 - 31 (15 + 9 + 7) タスクに分割して実行 - 6.996 秒

集合の同時更新の例

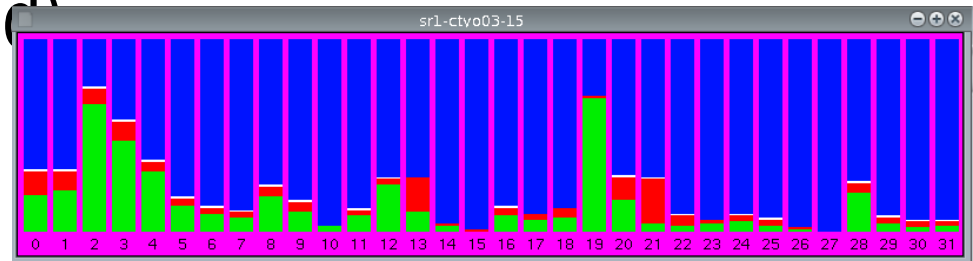
- > タスク: ひとつの集合(セット)を更新
 - 10000 以下の数をランダムに選び集合に追加(10000 回繰り返す)
 - 10000 以下の数をランダムに選び集合から削除(10000 回繰り返す)
- > タスクを実行するスレッド数: 100
- > 使用するスレッドプールのサイズ: 30
- > 使用する集合の実装クラス(SortedSet を実装している)
 - TreeSet
 - TreeSet (synchronized)
 - ConcurrentSkipListSet



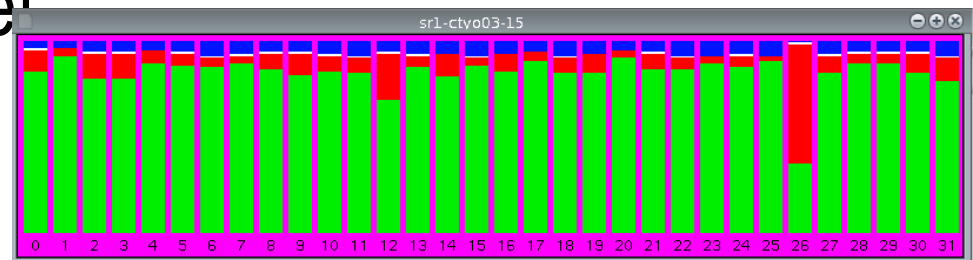
実行結果

- TreeSet
 - => NullPointerException

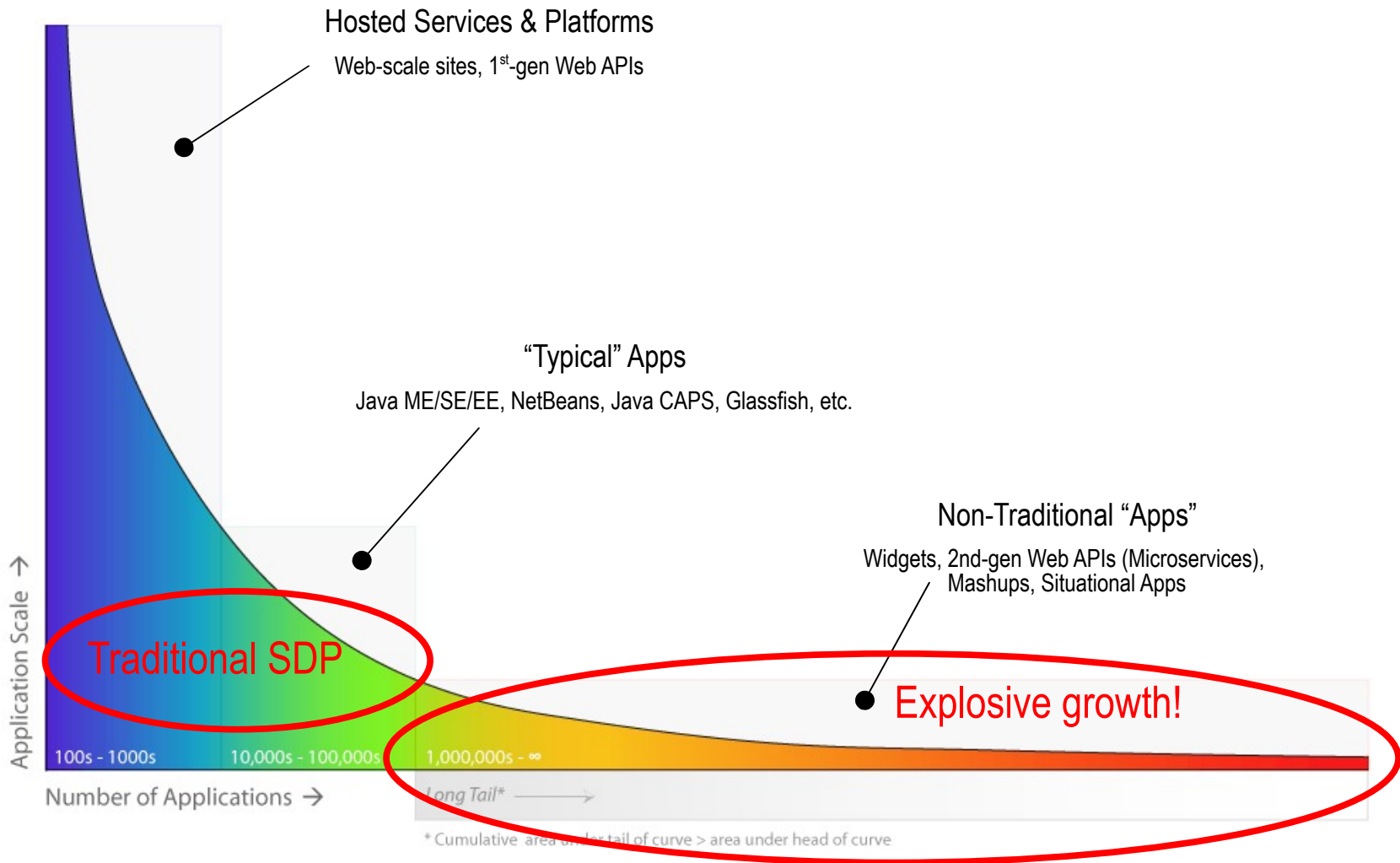
- TreeSet (synchronized)
 - 6,957 msec



- ConcurrentSkipListSet
 - 2,275 msec



The Application Spectrum



What You Do on zembly

Your profile



Your profile tells others about you.

[Edit your profile](#) | [View your profile](#)

Your Recent Activity

This timeline shows what you've been doing in events as a list instead.



cwolves [x]



psivadasan [x]



holy [x]



pegooli [x]



girix [x]



daydreamer



- Your profile
- Your work
- Your contacts
- Sharing
- Voting

Work in progress

You've been editing these things recently, but them yet.

Sort by: [name](#) | [last modification](#) | [creation](#) | [only](#)

Widget [NewWidget](#) (Version 0 - Tuesday, May 2)

Service [NewService](#) (Version 0 - Tuesday, May 2)

Widget [ColorMyOrb](#) (Version 2 - Thursday, Apr)

score **44.0** 6  

working, fast, awesome rate ▼

Rate this thing

☒ working	☐ fast
☐ quirky	☒ awesome
☐ pretty	☐ useful
☒ interesting	☐ incomplete
☐ inflexible	☐ buggy

[Save](#) [Cancel](#)

```

4 if ((Parameters.name != null) && (
5     var result=
6         Things.chris.flickrInteres
7     return result;
8 } else {
9     return defaultPhotoList;
10 }
    
```

A Place to Build the Web

- “Always Live” Development Environment for authoring ...

- Services

- > カスタムロジックを javascript で
- > RESTful サービスを公開

- Widgets



- > browser-based UI components を開発
- > データは配信のためのサービスコンテナを開発

- Social Network Applications



Calling Amazon S3: 比較

• Java – 134 lines

```
import java.net.URLConnection;
import java.security.InvalidKeyException;
import java.security.NoSuchAlgorithmException;
import java.util.Iterator;
import java.util.List;
import java.util.SortedMap;
import java.util.TreeMap;

import javax.crypto.Mac;
import javax.crypto.spec.SecretKeySpec;

final String AMAZON_HEADER_PREFIX = "x-amz-";
final String ALTERNATIVE_DATE_HEADER = "x-amz-date";

URLConnection connection = ...
String resource = "[my-bucket]/[my-key]"

StringBuffer canonical_buffer = new StringBuffer();
canonicalBuffer.append(connection.getRequestMethod() + "\n");

// Add all interesting headers to a list, then sort them. "Interesting"
// is defined as Content-MD5, Content-Type, Date, and x-amz-
SortedMap interestingHeaders = new TreeMap();
if (headers != null) {
    for (Iterator i = headers.keySet().iterator(); i.hasNext(); ) {
        String key = (String)i.next();
        if (key == null) continue;
        String lk = key.toLowerCase();

        // Ignore any headers that are not particularly interesting.
        if (!lk.equals("content-type") || !lk.equals("content-md5") || !lk.equals("date") ||
            !lk.startsWith(AMAZON_HEADER_PREFIX))
        {
            List s = (List)headers.get(key);
            interestingHeaders.put(lk, concatenateList(s));
        }
    }
}

if (interestingHeaders.containsKey(ALTERNATIVE_DATE_HEADER)) {
    interestingHeaders.put("date", "");
}

// these headers require that we still put a new line in after them,
// even if they don't exist.
if (!interestingHeaders.containsKey("content-type")) {
    interestingHeaders.put("content-type", "");
}
if (!interestingHeaders.containsKey("content-md5")) {
    interestingHeaders.put("content-md5", "");
}

// Finally, add all the interesting headers (i.e.: all that start with
// x-amz- :)
for (Iterator i = interestingHeaders.keySet().iterator(); i.hasNext(); ) {
    String key = (String)i.next();
    if (key.startsWith(AMAZON_HEADER_PREFIX)) {
        canonicalBuffer.append(key).append(";").append(interestingHeaders.get(key));
    } else {
        canonicalBuffer.append(interestingHeaders.get(key));
    }
    canonicalBuffer.append("\n");
}

// don't include the query parameters...
int queryIndex = resource.indexOf("?");
if (queryIndex == -1) {
    canonicalBuffer.append(resource);
} else {
    canonicalBuffer.append(resource.substring(0, queryIndex));
}
```

• Zembly – 1 line

Services.amazon.s3.PutObject(
"s3key", "s3secret", "bucket", "key", "content");

- 100 倍の生産性
- コンパイルなし
- 配備なし
- すぐに動作

```
// .. unless there is an acl or torrent parameter
if (resource.matches("(.*?acl=|.*?torrent=)")) {
    canonicalBuffer.append("acl");
} else if (resource.matches("(.*?torrent=)")) {
    canonicalBuffer.append("torrent");
}

// Acquire an HMAC/SHA1 from the raw key bytes.
SecretKeySpec signingKey =
    new SecretKeySpec("aws-secret-access-key".getBytes(),
        HMAC_SHA1_ALGORITHM);

// Acquire the MAC instance and initialize with the signing key.
Mac mac = null;
try {
    mac = Mac.getInstance(HMAC_SHA1_ALGORITHM);
} catch (NoSuchAlgorithmException e) {
    // should not happen
    throw new RuntimeException("Could not find sha1 algorithm", e);
}
try {
    mac.init(signingKey);
} catch (InvalidKeyException e) {
    // also should not happen
    throw new RuntimeException("Could not initialize the MAC algorithm", e);
}

// Compute the HMAC on the digest, and set it.
String canonicalString = canonicalBuffer.toString();
String headerSignature = new BASE64Encoder().encode(
    mac.doFinal(canonicalString.getBytes()));

// set the Authorization header with the value we've just calculated.
connection.setRequestProperty("Authorization", "AWS " +
    awsAccessKey + ":" + headerSignature);

// helper function for dealing with headers
private String concatenateList(List values) {
    StringBuffer buf = new StringBuffer();
    for (int i = 0, size = values.size(); i < size; ++i) {
        buf.append((String)values.get(i).replaceAll("\n", "").trim());
        if (i != (size - 1)) {
            buf.append(", ");
        }
    }
    return buf.toString();
}

// simple object put
S3Object simpleObject = new S3Object("this is a test".getBytes(), null);
Response response = conn.put("bucket-name", "key-name", simpleObject, null);

// put a more complex object with some metadata and http headers.
Map metadata = new TreeMap();
metadata.put("title", Arrays.asList(new String[] { "my title" }));
S3Object titledObject =
    new S3Object("this object has a title".getBytes(), metadata);

Map headers = new TreeMap();
headers.put("Content-Type", Arrays.asList(new String[] { "text/plain" }));

response = conn.put("bucket-name", "key-name", titledObject, headers);
```

What zembly Runs On

- Network.com, Sun's cloud computing infrastructure 上で動作
- 拡張性を確保
- Sun の最新のハード、ソフト上に構築
- Instant time to market (time to profit)

• And it's free!





Signed in as [bkaponig](#) | [Sign Out](#)

[create something](#)

[you](#) [samples](#) [search](#) [blog](#) [forum](#)

bkaponig, this is your home page

From here, you can access and edit your profile, keychain and other information related to your account, get to all the things you own or have been working on, and view and modify your list of friends.

Your profile



Your profile tells others about you.

[Edit your profile](#) | [View your profile](#)

Your Keychain

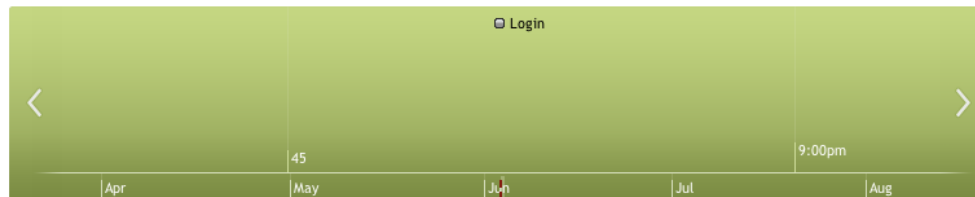


Your keychain stores keys for accessing other web services.

[Manage your keychain](#)

Your Recent Activity

This timeline shows what you've been doing lately. Click on an event to see more details about it, or view events as a list instead.



Work in progress

You've been editing these things recently, but haven't published them yet.

Sort by: [name](#) | [last modification](#) | [creation](#) | [online status](#)

 [Widget ShowLocationOnMap](#) (Version 1 - Tue Jun 3 11:34:43 2008)

Things You Own

You created these things.

Sort by: [name](#) | [last modification](#) | [creation](#) | [online status](#)

 Application [CloneOfBuddyMugs](#) (online; created 4 hours ago)

 Application [FacebookApp](#) (online; created 3 hours ago)

Your Favorites

You haven't marked anything as a favorite. To mark something as a favorite, click on 'Add to Favorites' from the widget or service page.

Your Keychain

Your keychain is a convenient, centralized place to securely store keys (sometimes called "API keys" or "service keys") that you use to access other Web services on the Internet. Keys are often required by Web service providers so that they can tell who is calling them, to calculate usage charges or enforce quotas, and to ensure some level of security for their services.

Keys stored in your keychain are secure and private, so only you can view and use them. In addition, the keychain provides a simple and secure way to use your keys in the widgets and services you write. It also ensures that other services that you call from your widgets and services don't have direct access to your keys (and so cannot be stolen), and that the keys are used only for contacting the service provider they are intended for.

To obtain keys for a service provider, you must generally register with them through a Web page and provide some basic information. Normally, this takes just a few minutes and is usually free of charge. Once you have a key for a provider, you can add it to your keychain below and then easily use it from your widgets and services.

Are you a Web service API provider? [Find out more about helping users call your service.](#)

Service Providers



Amazon AWS

Need a key?
[Register with Amazon AWS](#)



[Add key](#)

Amazon Web Services give you direct access to Amazon's technology platform. Amazon provides both free services, such as the E-commerce service that exposes the product catalog, and services that cost money, like the Amazon S3 (Simple Storage Service), as well as services that can make you money, like the E-commerce service. The service supported here is the E-Commerce Service (ECS).

[Check out the services offered by Amazon AWS.](#)



Delicious

Need a key?
[Register with Delicious](#)



[Add key](#)

Del.icio.us is a social bookmarking site that lets users display and tag lists of bookmarks and share them with other users. A user's application can use the Delicious API to access general data and to both access and update the user's own data in HTML or JSON format.

[Check out the services offered by Delicious.](#)



Facebook

The Facebook Platform is a web service with an extensive set of methods that enable your application to access and write Facebook data. You can integrate your application into the Facebook Profile, the News Feed, and other Facebook features, and you get the advantage of Facebook's millions of users to virally market your applications. You get a key by creating a new application at the page <http://www.facebook.com/developers/editapp.php?new>. You have to log in to use this page. To see your existing Facebook keys, go to <http://www.facebook.com/developers/apps.php>.

[Check out the services offered by Facebook.](#)

This is your latest draft. Once you are done editing, you should [publish](#) it to make it available for others to use.

```

1 var map;
2
3 /*Initializes google map*/
4 function load() {
5     if (GBrowserIsCompatible()) {
6         map = new GMap2(document.getElementById("map"));
7         map.addControl(new GSmallMapControl());
8         map.addControl(new GMapTypeControl());
9
10        Things.callService("bkaponig.GetGeoCoordinates",
11        {
12            address: Parameters.address
13        },
14        {
15            onSuccess: function(data) {
16                var longitude = data.coordinates[0];
17                var latitude = data.coordinates[1];
18
19                var point = new GLatLng(latitude, longitude);
20                map.setCenter(point, 13);
21                var marker = new GMarker(point, {title: Parameters
22                map.addOverlay(marker);
23

```

1:1 Code completion: Ctrl + Space

People Helping Out

Widget - Preview



Signed in as [bkaponig](#) | [Sign Out](#)

create something

you samples search blog forum

ShowLocationOnMap

You are looking at draft 7 based on version 1

score 0.0 | 0 | 0

(X)HTML | CSS | JavaScript

This is your latest draft. Once you are done editing, you should [publish](#) it to make it available for others to use.

```
1 var map;
2
3 /*Initializes google map*/
4 function load() {
5     if (GBrowserIsCompatible()) {
6         map = new GMap2(document.getElementById("map"));
7         map.addControl(new GSmallMapControl());
8         map.addControl(new GMapTypeControl());
9
10        Things.callService("bkaponig.GetGeoCoordinates",
11        {
12            address: Parameters.address
13        },
14        {
15            onSuccess: function(data) {
16                var longitude = data.coordinates[0];
17                var latitude = data.coordinates[1];
18
19                var point = new GLatLng(latitude, longitude);
20                map.setCenter(point, 13);
21                var marker = new GMarker(point, {title: Parameters
22                map.addOverlay(marker);
23            }
24        }
25    }
26 }
```

1:1 | Code completion: Ctrl + Space

Preview | Find & Use | Resources

Parameters | Preview now

Preview Value

address

label

+ Add a new parameter

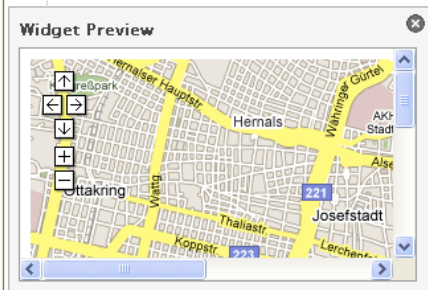
☐ Preview in a new window

☒ Enable logging

You may also open the widget in a [new window](#).

Embed

Editing History



close

Description

This is a widget that can be embedded in webpages, on Facebook, and many other places. The widget is hosted on our server and can be edited right here in your browser, if you have edit permission.

There is no description.

Widget Preview

Who Owns This Thing?



[bkaponig](#)

People Helping Out

Facebook Application



Parts

Configuration

☐ BKMyHome
Change application icon

Provide description

This application is on Facebook at:
<http://apps.facebook.com/bkmyhome> (change)

You may [edit application's about page](#) at Facebook.com.

The application is in developer mode. Make it public and [go viral](#)

Widgets and Services

Show Profile page after users add this application

Point application's sidebar navigation entry to [Home](#)

By default, show profile box in [wide](#) column

[create something](#)

- ☐ Profile Box
- ☐ Help  
- ☐ Terms of Service  
- ☐ Privacy Settings  
- ☐ Application Removed 
- ☐ UpdateProfileBox 
- ☐ Home  

close

[Add Application](#) to your Facebook profile

Widgets and Services

Who Owns This Thing?



bkaponig

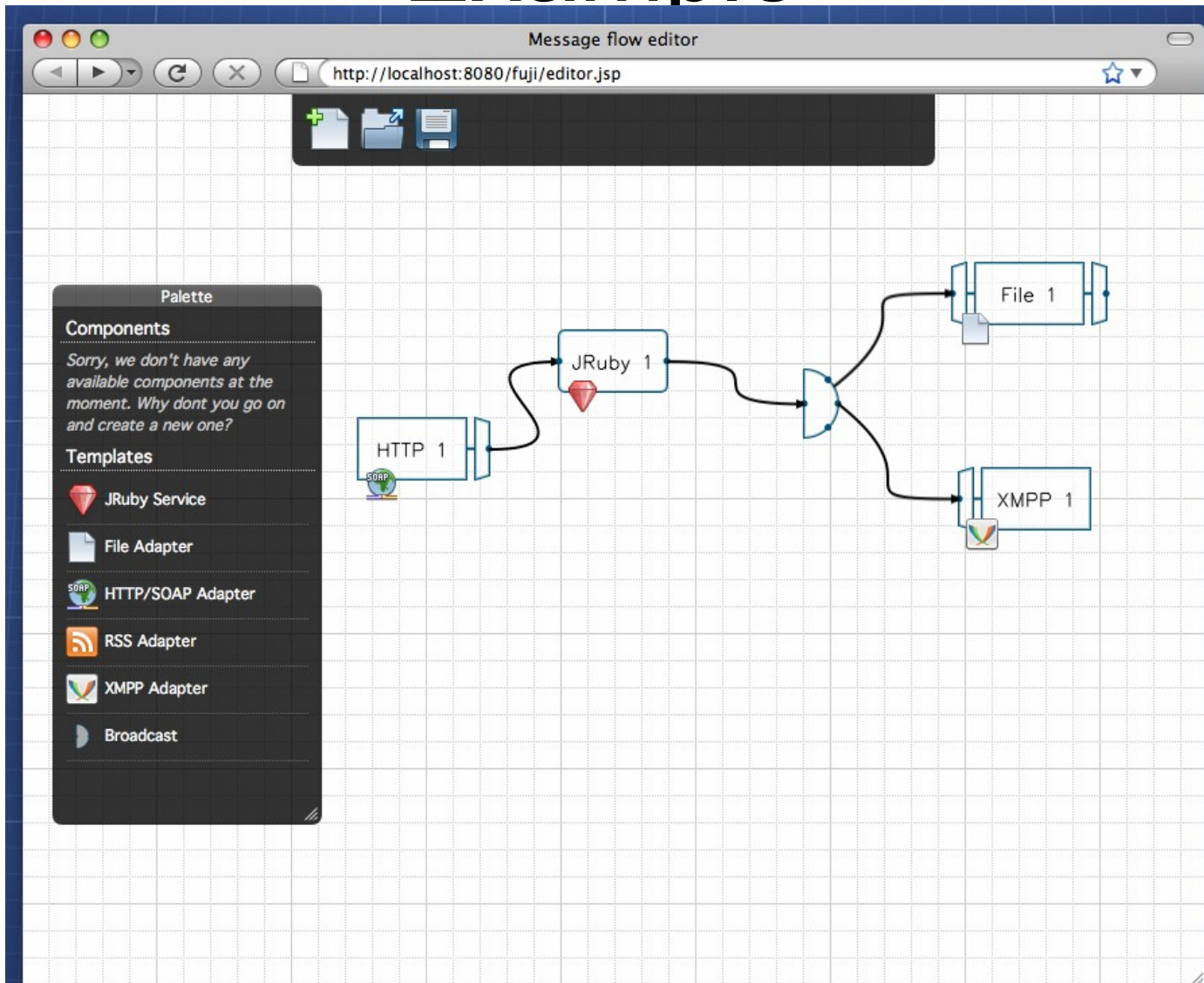
Faces of Fuji – The Revolutionary

- Open ESB v3 のコア
 - GlassFish v3
- Lightweight でモジュール化された実装
 - > OSGi
- 全ての層で効率化
 - > アプリ開発のためのワークフローとツール
- 新たなコミュニティに向けて
 - > Scripting, Spring, OSGi, POJO developers ...
 - > Web 2.0 build-out
 - > Web Oriented Architecture (WOA / ROA)
 - > Cloud computing, Appliances

<https://fuji.dev.java.net/>



Web-based Composition Example



Mashup Awards 4



- <http://mashupaward.jp/>
- 参加者総数 747 名、応募作品数 259 作品
- 最優秀賞は「Chamap (チャマップ)」 kentaro(福井在住)

Open Source University Meetup



Open Source University Meetup (OSUM)
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MySQL NetBeans OpenSPARC Java opensolaris™ OpenOffice.org

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All countries All Schools Return to my OSUM

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メモ

Download Open Source Software Here
Gary Serdaさんが Oct 31, 2008 at 4:58pm に作成。最終更新：Nov 22, 更新者：Gary Serdaさん

Get Trained - Get Certified
Gary Serdaさんが Sep 9, 2008 at 5:28pm に作成。最終更新：Oct 30, 更新者：Gary Serdaさん

Akihito Fujiiさん、Open Source University Meetup にようこそ！
ここでは、以下の操作を実行できます。

友達を招待 写真を追加 ビデオを追加 ディスカッションプロフィールを開始 アイテムを追加

Welcome to the Open Source University Meetup (OSUM) Community

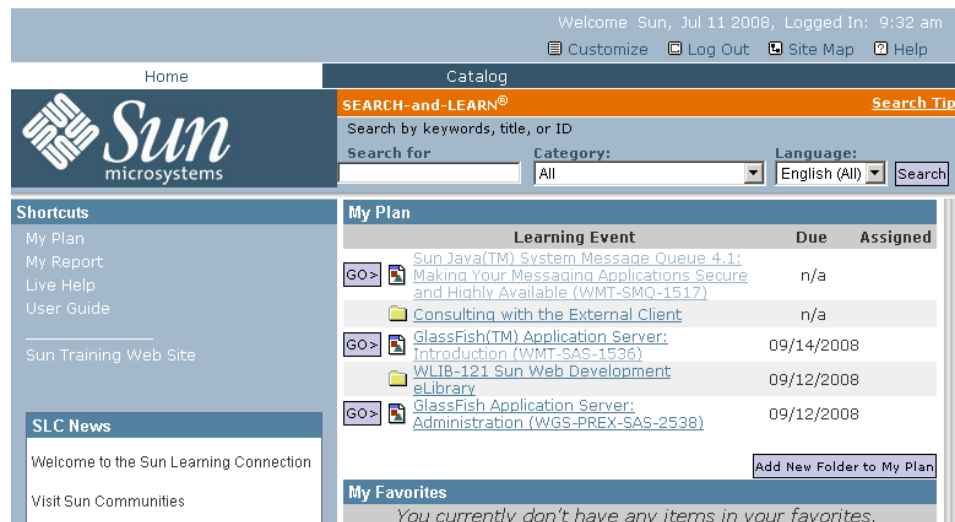
Akihito Fujii
サインアウト
受信トレイ
Alerts
マイ フレンド - 招待
設定
アイテムを追加

Membri

<http://osum.sun.com>

SAI (Sun Accademic Initiative)

- 学生向け E-Learning プログラム
- Java や Solaris などのさまざまな Sun テクノロジを学習可能



Welcome Sun, Jul 11 2008, Logged In: 9:32 am
Customize Log Out Site Map Help

Home Catalog

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- My Plan
- My Report
- Live Help
- User Guide

Sun Training Web Site

SLC News

Welcome to the Sun Learning Connection

Visit Sun Communities

My Plan

	Learning Event	Due	Assigned
GO>	 Sun Java(TM) System Message Queue 4.1: Making Your Messaging Applications Secure and Highly Available (WMT-SMQ-1517)	n/a	
	 Consulting with the External Client	n/a	
GO>	 GlassFish(TM) Application Server: Introduction (WMT-SAS-1536)	09/14/2008	
	 WLTB-121 Sun Web Development eLibrary	09/12/2008	
GO>	 GlassFish Application Server: Administration (WGS-PREX-SAS-2538)	09/12/2008	

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<http://jp.sun.com/solutions/education/sai/>

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 - 今後のシステム開発に必要なこと
 - 今後の開発エンジニアに必要なこと
 - 今後のあなたに必要なこと
-
- ゆでがえる
 - ネットからの衝撃
 - 自ら理解できるはず
 - 英語、英語、英語

CommunityOne/JavaOne 2008 参考情報

- CommunityOne
 - > <http://developers.sun.com/events/communityone/>
- JavaOne
 - > <http://java.sun.com/javaone/sf/index.jsp>
- JavaOne 基調講演ストリーミング
 - > <http://java.sun.com/javaone/sf/sessions/general/index.jsp>
- JavaOne セッション PDF
 - > <http://developers.sun.com/learning/javaoneonline/>

ご清聴
ありがとうございました。

