

Ecosystem Tools for Administrators

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About Matt

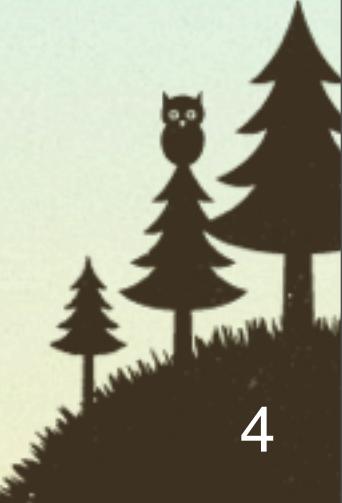
- Worked with Confluence for over 5 years
- Team lead, tech lead & developer
- Plugin areas of expertise:
 - Web items & resources
 - User management & security
 - Confluence-specific: macros, etc.





Who are you?

- You run a JIRA/Confluence/Bamboo/ FishEye server for your organisation
- You're responsible for keeping the system up
- You're responsible for keeping the data safe
- You need to get stuff done.





What you want in Atlassian products

- Easier upgrades
- More bulk operations
- Offline operations
- Easier administration



How we can help



1. Scripting & Remote APIs
2. Simple Plugin Points
3. Java Plugin Points
4. Tools for Management



Scripting & Remote APIs

a.k.a. Acronym Soup



Remote API: JIRA

REST

✓ Expanded in 4.4, 5.0
Please let us know what you need!

SOAP

✓ Most comprehensive
✗ No longer being expanded

JSON-RPC

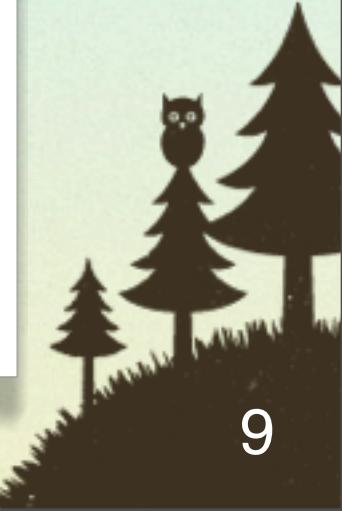
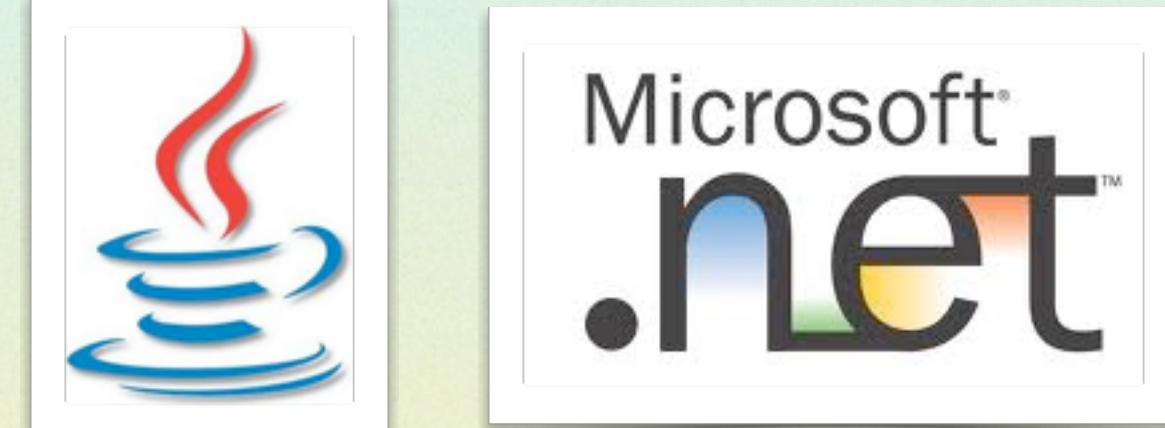
Expose SOAP API via JSON
✗ No longer being expanded

XML-RPC

Small number of methods
✗ No longer being expanded



Remote API: language agnostic





JIRA REST: Creating issues (5.0+)

```
var client = require('node-restclient');
var base = 'http://admin:admin@localhost:2990/jira/rest/api/latest';

var issue = {
  fields: {
    project: { id: "10000" }, // Test Project
    issuetype: { id: "1" }, // Bug
    summary: "GadgetException in the WidgetConnector",
    description: "I got an exception in the WidgetConnector: ...",
    priority: { name: "Minor" },
    reporter: { name: "admin" },
    assignee: { name: "admin" }
  }
};

client.post(base + '/issue', JSON.stringify(issue), function (result) {
  console.log("Issue created: " + result.key);
}, "json");
```





JIRA REST: source code

<https://bitbucket.org/mryall/atlascamp-scripts>

<https://github.com/mattryall/node-restclient>



JIRA REST: Resolving issues

```
var client = require('node-restclient');
var base = 'http://admin:admin@localhost:2990/jira/rest/api/latest';

var logIssue = function (issue) {
    console.log("Issue " + issue.key + " status: " + issue.fields.status.name);
};

var data = JSON.stringify({
    transition: '5', // Resolve
    fields: { resolution: "Won't Fix" }
});

client.post(base + '/issue/TST-1/transitions', data, function (result, status) {
    console.log("Transition result: " + status);
    client.get(base + '/issue/TST-1', logIssue, "json");
}, "json", { "Content-Type": "application/json" }));
```



JIRA REST: What can you do?

- Issue details, voting, watching (4.2)
- Transition workflows (4.2)
- Add attachment (4.3)
- Manage project roles, versions & components (4.4)
- Create, edit issue (coming in 5.0)

API docs: <http://bit.ly/jira-rest>



JIRA SOAP: Creating issues

```
from suds.client import Client
import datetime

client = Client('https://jira/rpc/soap/jirasoapservice-v2?wsdl')
token = client.service.login('username', 'password')
issue = {
    'project': 'TST',
    'summary': 'Test issue created from SOAP',
    'type': '3', # Task
    'description': 'Please ignore this issue',
    'duedate': datetime.datetime(2011, 10, 5),
    'affectsVersions': [{ 'id': '10331' }],
    'fixVersions': [{ 'id': '10331' }],
}
issue = client.service.createIssue(token, issue)

print 'New issue created: %s' % issue.key
```



JIRA SOAP: Resolving issues

```
from suds.client import Client

client = Client('https://jira/rpc/soap/jirasoapervice-v2?wsdl')
token = client.service.login('username', 'password')

action = '5' # Resolve
params = [{ 'id': 'resolution', 'values': [ '2' ] }] # Won't Fix
issue = client.service.progressWorkflowAction(token,
    'TST-29258', action, params)

print 'Issue %s updated, new status: %s' % (issue.key, issue.status)
```



JIRA SOAP: More stuff you can do

- Create projects
- Add, release and archive versions
- Create and manage permission schemes
- Add, edit and delete comments
- Search for issues with JQL
- ... much more!

API docs: <http://bit.ly/jira-soap>



Remote API: Confluence

SOAP XML-RPC	✓ Most comprehensive
JSON-RPC	✓ Exposes SOAP API via JSON
REST	Small number of methods ✗ Expanding only as needed



JSON-RPC: What is it?

- Provides JSON-based access to existing SOAP APIs in JIRA and Confluence
- Useful in front-end JavaScript code
- Why? To facilitate reuse of existing APIs.





JSON-RPC: How does it work?

- Install the JSON-RPC plugin
- Visit URL with the remote API method name:

`http://wiki/rpc/json-rpc/confluenceService-v2/addComment`

- Pass any parameters in body as JSON.

JSON-RPC plugin: <http://bit.ly/json-rpc>



JSON-RPC: Deleting spam comments

```
function jsonRpc(method, params, success, error) {
    jQuery.ajax("https://wiki/rpc/json-rpc/confluenceService-v2/" + method, {
        dataType: "json",
        type: "POST",
        contentType: "application/json",
        data: JSON.stringify(params),
        success: success,
        error: error
    });
}

jsonRpc("getComments", [ AJS.params.pageId ], function (comments) {
    jQuery.each(comments, function (i, comment) {
        if (comment.creator == "mquail") {
            jsonRpc("removeComment", [ comment.id ], function () {
                console.log("Comment removed: " + comment.id);
            });
        }
    });
} );
```



CLI

- If the remote APIs provide raw power, CLI is the engine that puts them to work
- CLI exposes majority of remote API methods via a simple command line interface
- Open source, maintained by Bob Swift
- Don't bother writing code, use a shell script





CLI

```
$ ./jira.sh
Usage:
jira [--help] (-a|--action) <action> [(-f|--file) <file>] [--encoding <encoding>] [--debug] [-v|--verbose] [--quiet] [--outputFormat <outputFormat>] [--sql <sql>] [--driver <driver>] [--url <url>] [--host <host>] [--port <port>] [--database <database>] [--dbUser <dbUser>] [--dbPassword <dbPassword>] [--propertyFile <propertyFile>] [--common <common>] [--continue] [--simulate] (-s|--server) <server> (-u|--user) <user> (-p|--password) <password> [--login <login>] [--service <service>] [-l|--loginFromStandardInput] [--project <project>] [--toProject <toProject>] [--name <name>] [--description <description>] [--lead <lead>] [--after <after>] [--issue <issue>] [--toIssue <toIssue>] [--parent <parent>] [--summary <summary>] [--priority <priority>] [--reporter <reporter>] [--assignee <assignee>] [--security <security>] [--environment <environment>] [--component <component>] [--toComponent <toComponent>] [--components <components>] [--version <version>] [--affectsVersions <affectsVersions>] [--fixVersions <fixVersions>] [--custom <custom>] [--field <field>] [--field2 <field2>] [-date <date>] [--dateFormat <dateFormat>] [--type <type>] [--resolution <resolution>] [--step <step>] [--comment <comment>] [--filter <filter>] [--search <search>] [--link <link>] [--values <values>] [--values2 <values2>] [--timeSpent <timeSpent>] [--propertyPrefix <propertyPrefix>] [--count <count>] [--api <api>] [--plugin <plugin>] [--role <role>] [--group <group>] [--defaultGroup <defaultGroup>] [--userId <userId>] [--userFullName <userFullName>] [--userEmail <userEmail>] [--userPassword <userPassword>] [--permissionScheme <permissionScheme>] [--notificationScheme <notificationScheme>] [--issueSecurityScheme <issueSecurityScheme>] [--findReplace <findReplace>] [--autoVersion] [--autoComponent] [--autoGroup] [--asVersion] [--asComponent] [--asCascadeSelect] [--append] [--appendText] [--copyLinks] [--copyAttachments] [--copyComments] [--copyWatchers] [--copySubtasks] [--copySubtaskEstimates] [--useParentVersions] [--cloneIssues] [--copyVersions] [--copyComponents] [--copyRoleActors] [--replace]
```

Provides capability to make requests to a remote server.

Required parameters: action, server, password.

Optional parameters: user (likely required for your installation).

Other required and optional parameters depending on action requested.

--help

Prints this help message.

(-a|--action) <action>

Requested operation to perform. Valid actions (not case sensitive) are:

login - Login to remote server. Returns login token.



CLI: MOTD

```
echo "You have \  
`./jira.sh -a getIssueList --search \  
'assignee = currentUser() and resolution is empty' | wc -l` \  
JIRA issues assigned to you."
```



JIRA: Jelly scripts

- Ugly, but workable

Not going away until there's a better alternative.



```
<JiraJelly xmlns:jira="jelly:com.atlassian.jira.jelly.enterprise.JiraTagLib"  
xmlns:core="jelly:core">  
  
    <core:invokeStatic className="com.opensymphony.user.UserManager"  
        method="getInstance" var="instance"/>  
  
    <core:invoke on="${instance}" method="getUsers" var="users"/>  
  
    <core:forEach var="user" items="${users}">  
        // do something with ${user}  
    </core:forEach>  
  
</JiraJelly>
```





JIRA: Script Runner plugin

- Runs scripts found on the file system
- Integrates into workflow validators and post-functions
- Supports several languages: Groovy, JavaScript



Confluence: Scripting macros

- Embed scripts in Confluence pages
- Ugly, but workable
- Supports Beanshell, Jython and more



Confluence: scripting example

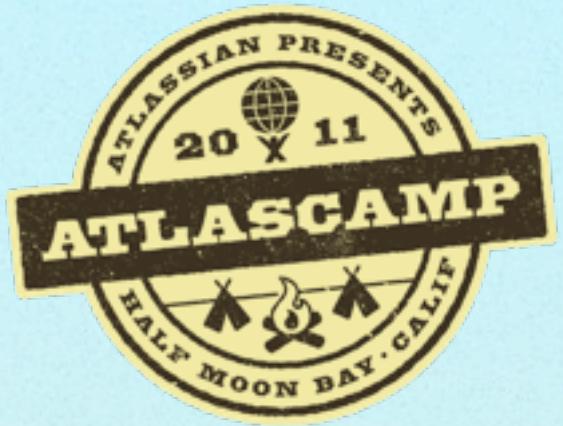
Priority	IRT/<Age>	Issue	Description	TZ	Assignee
C	00:45	CSP-666	Unassigned Critical Issue from my region...	GMT+1	
C	<12:34>	CSP-666	Unassigned Critical Issue outside my region...	GMT+12	
HE	<12:34>	CSP-666	Unassigned Escalated Issue from my region...	GMT-5	
ME	<12:34>	CSP-666	Unassigned Escalated Issue outside my region...	GMT+8	
HT _{SY}	00:45	CSP-666	Unassigned Transferred Issue from my region...	GMT+1	
MT _{AM}	00:15	CSP-666	Unassigned Transferred Issue outside of my region...	GMT+10	
H	00:15	CSP-666	Almost Breached Issue from my region...	GMT+1	
H	-00:45	CSP-666	Barely Breached Issue from my region...	GMT+1	
M	-12:15	CSP-666	Long Breached Issue from my region...	GMT+1	
L	-08:15	CSP-666	Breached Issue from my region...	GMT+1	
L	<03:15>	CSP-666	Unassigned Issue from my region...	GMT+1	
L	03:15	CSP-666	Waiting Issue from my region...	GMT+1	
H	<12:34>	CSP-666	Unassigned Issue outside my region...	GMT-8	
HE	<12:34>	CSP-666	Assigned Escalated Issue from my region...	GMT-5	Tony Atkins
C	00:45	CSP-666	Assigned Critical Issue from my region...	GMT+1	Tony Atkins
ME	<12:34>	CSP-666	Assigned Escalated Issue outside my region...	GMT+8	Tony Atkins

Matt's Scripts & Remote API Challenge

“ *Use your product’s scripting or remote APIs to automate one task in your workflow ... tomorrow!* ”

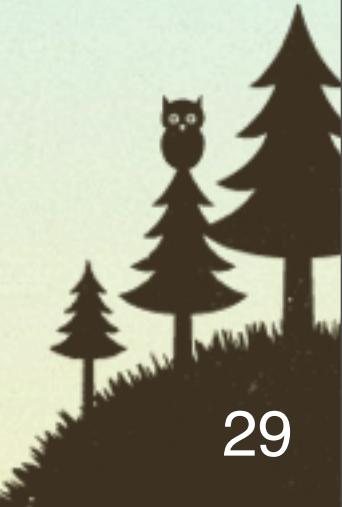
#atlascamp





Simple Plugin Points

No compilers allowed.





Plugin points: custom menu items

A screenshot of a web-based administration console. At the top, a dark blue header bar displays "Dashboard > Administration Console". Below this is a white header with a blue "X" icon and the text "Administration Console". The main content area has a light gray background. On the left, there is a vertical sidebar with two main sections: "Monitoring" and "Configuration". The "Monitoring" section contains links for "New Relic", "Pingdom", and "Google Analytics", each with a small colored icon. The "Configuration" section contains links for "General Configuration", "Backup Administration", "Manage Referrers", "Plugins", "Languages", "Shortcut Links", "External Gadgets", and "Global Templates".

Dashboard > Administration Console

Administration Console

Monitoring

- New Relic
- Pingdom
- Google Analytics

Configuration

- General Configuration
- Backup Administration
- Manage Referrers
- Plugins
- Languages
- Shortcut Links
- External Gadgets
- Global Templates

- Called “web-item” plugin modules
- Hook into navigation, menus, etc.
- Works in all products (locations vary)
- Example: add links for your own monitoring tools to admin console



Plugin points: custom menu items

- Step 1: create a web-item with a link to the site

```
<web-item key="new-relic" name="New Relic"
          section="system.admin/configuration" weight="5">
    <label>New Relic</label>
    <link>https://rpm.newrelic.com/accounts/9704/applications/293072</link>
</web-item>
```



Plugin points: custom menu items

- Step 1: create a web-item with a link to the site
- Step 2: drop it in the XML template

```
<atlassian-plugin key="com.example.plugins.sample" name="My Sample Plugin"
    plugins-version="2">
    <plugin-info>
        <version>1.0</version>
        <vendor>My Company</vendor>
    </plugin-info>

    <web-item key="new-relic" name="New Relic"
        section="system.admin/configuration" weight="5">
        <label>New Relic</label>
        <link>https://rpm.newrelic.com/accounts/9704/applications/293072</link>
    </web-item>

</atlassian-plugin>
```



Plugin points: custom menu items

- Step 1: create a web-item with a link to your site
- Step 2: drop it in the XML template
- Step 3: upload it into JIRA/Confluence/FishEye

Upload Plugin

Upload the .jar file for a custom or third-party plugin here.

From my computer

OR

From this URL



Plugin points: custom menu items

A screenshot of the Atlassian Administration interface. The title bar says "Administration". A sidebar on the left lists various configuration options. The "New Relic" option is highlighted with a mouse cursor, indicating it has been selected or is being demonstrated.

Holy smokes, that was easy!





Adding sections and icons

Dashboard > Administration Console

Administration Console

The Administration Console is a central hub for managing your application's configuration and monitoring. It provides access to various tools and services, such as New Relic, Pingdom, and Google Analytics, which help you monitor and tune your application's performance.

Monitoring

- New Relic
- Pingdom
- Google Analytics

Configuration

- General Configuration
- Backup Administration
- Manage Referrers
- Plugins
- Languages
- Shortcut Links
- External Gadgets
- Global Templates



Adding sections and icons

```
<atlassian-plugin key="com.example.plugins.custom-menu-item"
    name="Custom Menu Item Demo" plugins-version="2">
    <plugin-info>
        <vendor>Example Inc</vendor>
        <version>1.0</version>
    </plugin-info>

    <web-section key="monitoring" name="Monitoring Section"
        location="system.admin" weight="50">
        <label>Monitoring</label>
    </web-section>

    <web-item key="new-relic" name="New Relic"
        section="system.admin/monitoring" weight="10">
        <label>New Relic</label>
        <link>https://rpm.newrelic.com/accounts/9704/applications/293072</link>
        <icon height="13" width="16">
            <link>http://newrelic.com/images/avatar-newrelic.png</link>
        </icon>
    </web-item>

</atlassian-plugin>
```

Two red arrows have been hand-drawn on the slide to point to specific parts of the XML code. One arrow points to the 'monitoring' section in the second code block, and another arrow points to the 'new-relic' item in the third code block.



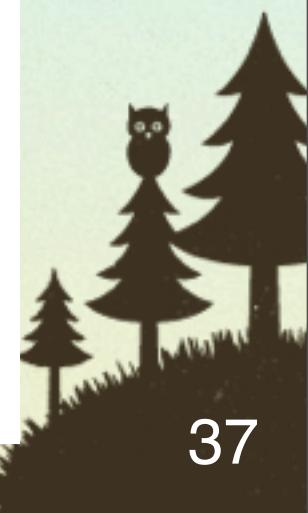
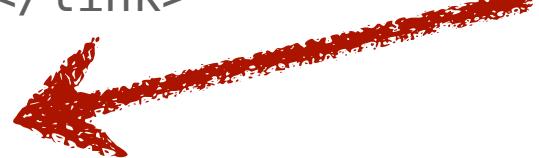
Adding sections and icons

```
<atlassian-plugin key="com.example.plugins.custom-menu-item"
    name="Custom Menu Item Demo" plugins-version="2">
    <plugin-info>
        <vendor>Example Inc</vendor>
        <version>1.0</version>
    </plugin-info>

    <web-section key="monitoring" name="Monitoring Section"
        location="system.admin" weight="50">
        <label>Monitoring</label>
    </web-section>

    <web-item key="new-relic" name="New Relic"
        section="system.admin/monitoring" weight="10">
        <label>New Relic</label>
        <link>https://rpm.newrelic.com/accounts/9704/applications/293072</link>
        <icon height="13" width="16">
            <link>http://newrelic.com/images/avatar-newrelic.png</link>
        </icon>
    </web-item>

</atlassian-plugin>
```





Adding sections and icons

Dashboard › Administration Console

Administration Console

The Administration Console is a central hub for managing your site's configuration and monitoring. It provides access to various tools and features, including monitoring services like New Relic, Pingdom, and Google Analytics, and configuration options for general settings, backups, and external gadgets.

Monitoring

- New Relic
- Pingdom
- Google Analytics

Configuration

- General Configuration
- Backup Administration
- Manage Referrers
- Plugins
- Languages
- Shortcut Links
- External Gadgets
- Global Templates

<https://bitbucket.org/mryall/atlascamp-scripts>



Plugin points: custom JavaScript

- Called “web-resource” plugin modules
- Run arbitrary code on every page
- Works in all products
- Example: override Confluence’s people directory

A screenshot of a web application's navigation bar. The top bar includes "Browse" and "Matt Ryall (Atlassian)". A dropdown menu is open, listing several options: "Pages", "Blog", "Labels", "Attachments", "Advanced", "Space Admin", "People Directory" (which is highlighted with a blue background), "Space Directory", "Feed Builder", "Keyboard Shortcuts", and "Confluence Gadgets".

Pages
Blog
Labels
Attachments
Advanced
Space Admin
People Directory
Space Directory
Feed Builder
Keyboard Shortcuts
Confluence Gadgets



Plugin points: custom JavaScript

- Step 1: Create a JS file which changes the URL

```
jQuery(function ($) {  
    $("#people-directory-link").attr("href", "http://example.com/staff-list");  
});
```

rewrite-links.js



Plugin points: custom JavaScript

- Step 1: Create a JS file which changes the URL
- Step 2: Use the XML template and add a web-resource

```
<atlassian-plugin key="com.example.plugins.customjs" name="Custom JavaScript Demo">
  <plugin-info>
    <vendor>Example Inc</vendor>
    <version>1.0</version>
  </plugin-info>

  <web-resource key="link-rewriter" name="Link Rewriter">
    <resource type="download" name="rewrite-link.js" location="rewrite-links.js"/>
    <context>atl.general</context>
  </web-resource>

</atlassian-plugin>
```

atlassian-plugin.xml



Plugin points: custom JavaScript

- Step 1: Create a JS file which changes the URL
- Step 2: Use the XML template and add a web-resource
- Step 3: Create a JAR file and upload it into the product

```
$ jar cf link-rewriter.jar atlassian-plugin.xml link-rewriter.js
```



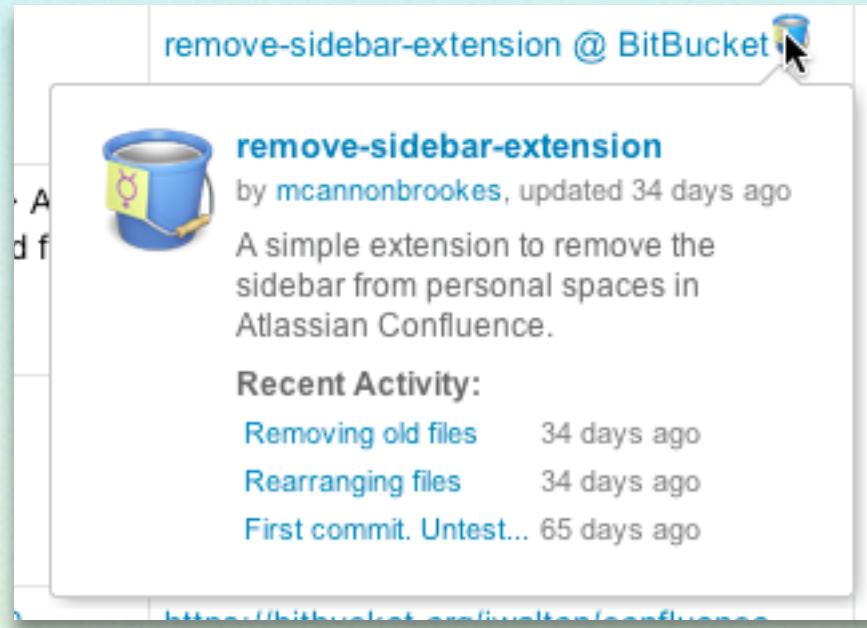
Plugin points: custom JavaScript

- It works!
- Demo code available on Bitbucket:
<https://bitbucket.org/mryall/atlascamp-scripts>

A screenshot of a Confluence sidebar menu. The menu items are: Browse ▾ (selected), Matt Ryall (Atlassian) ▾, Pages, Blog, Labels, Attachments, Advanced, Space Admin, People Directory (selected), Space Directory, Feed Builder, Keyboard Shortcuts, and Confluence Gadgets. A mouse cursor is hovering over the 'Space Directory' link.



Speakeasy Extensions



- Write simple plugins using web technologies: JavaScript, CSS
- Opt-in, per-user features
- Runs on every page
- Example: pop-up link information for Bitbucket repositories



Tying it all together

Site Search – Confluence

http://cbroadfoot:8080/connie/dosearchsite.action?query = Google

Dashboard > Search Browse ▾ A. D. Ministrator ▾ search

labelText:confluence

Showing 1-10 of 96 for labelText:confluence

build your own toolbar

Changing Usernames
Changing Usernames A username is the name used to login to **Confluence**, eg. jsmith. There is no support for changing a username via **Confluence** yet, but you can ...
Usernames Usernames can only be changed through direct update to the **Confluence** database. If you have a database administrator, request that they approve
[Temp DOC space for export](#) Jun 24, 2007

Add Confluence EAR-WAR to JIRA Standalone
Add **Confluence** EARWAR to JIRA Standalone This document will assist you in adding **Confluence** to your existing JIRA Standalone. Step 0 Consider alternatives ... users switch to running **Confluence** Standalone separately Installing **Confluence** Standalone. Before embarking on this process, consider whether you could
[Temp DOC space for export](#) Mar 16, 2007

Override properties in JIRA to Confluence Bridge
Override properties in JIRA to Confluence Bridge Overriding properties used in the JIRA

Where: All Spaces
What: All Content
When: Any date
Who:
Filter Clear Filter



Matt's Simple Plugin Points Challenge

“ Write a simple plugin or Speakeasy extension to add quick links for tasks you do all the time. ”

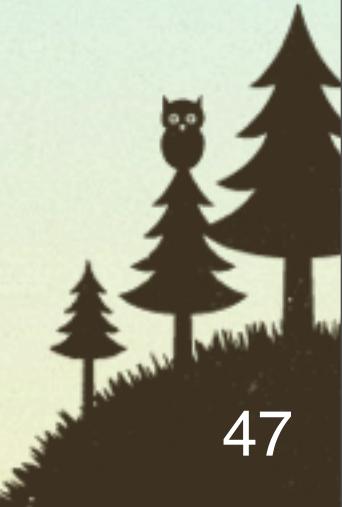
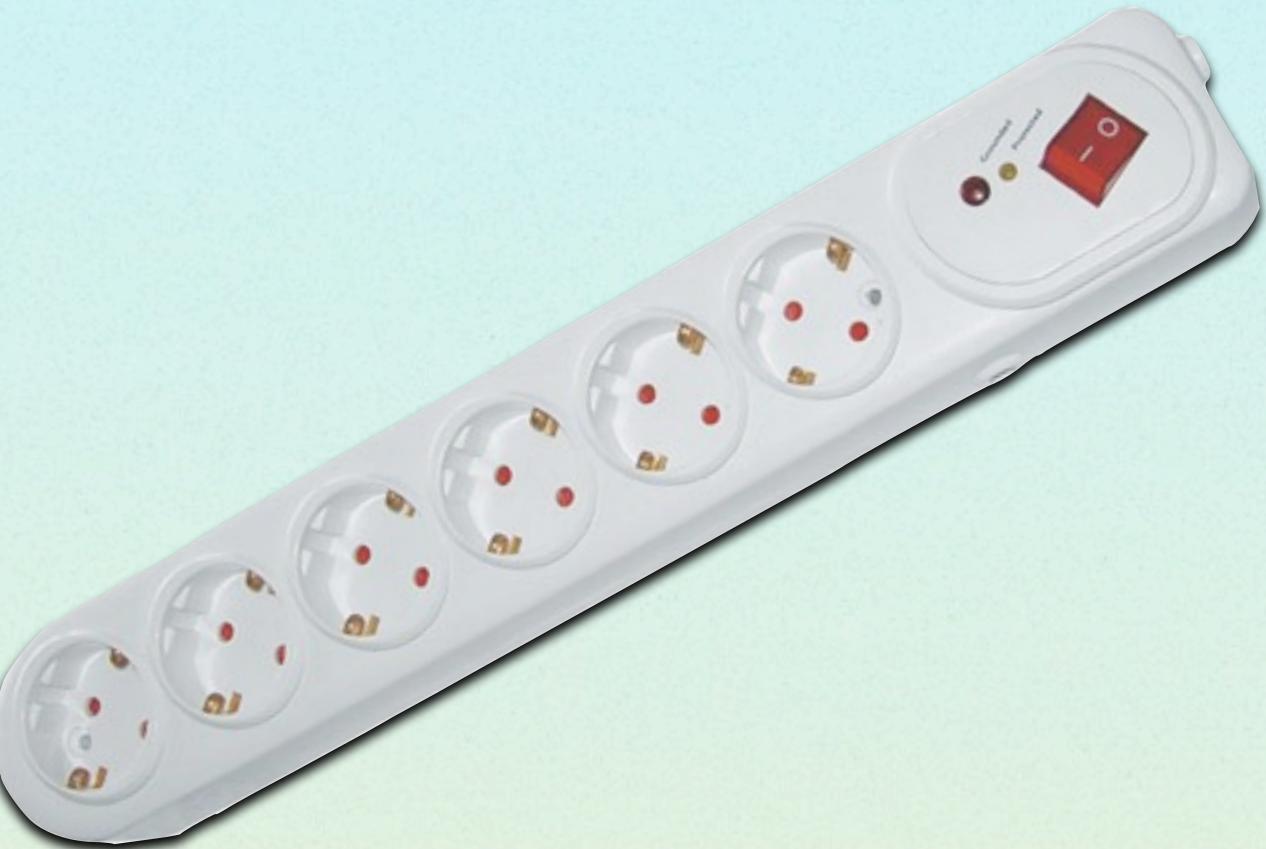
#atlascamp





Java Plugin Points

...which are useful for admins.





Event listener plugins

- Capture information about activity in the system
- Example events:
 - When a user logs in
 - When settings are changed
- Possibilities:
 - Audit logging
 - Trigger additional behaviour





Filter plugins

- Intercept requests hitting the system
- Example filters:
 - Match '/secure/admin/*' to intercept admin changes in JIRA
 - Match '/browsepeople.action' to intercept people directory in Confluence
- Possibilities:
 - Additional access control
 - Modify or record request parameters





Filter plugin example



[confluence] Admin change made by admin

1 message

matt@atlassian.com <matt@atlassian.com>
To: matt@atlassian.com

There was an administrative change on the Confluence server:

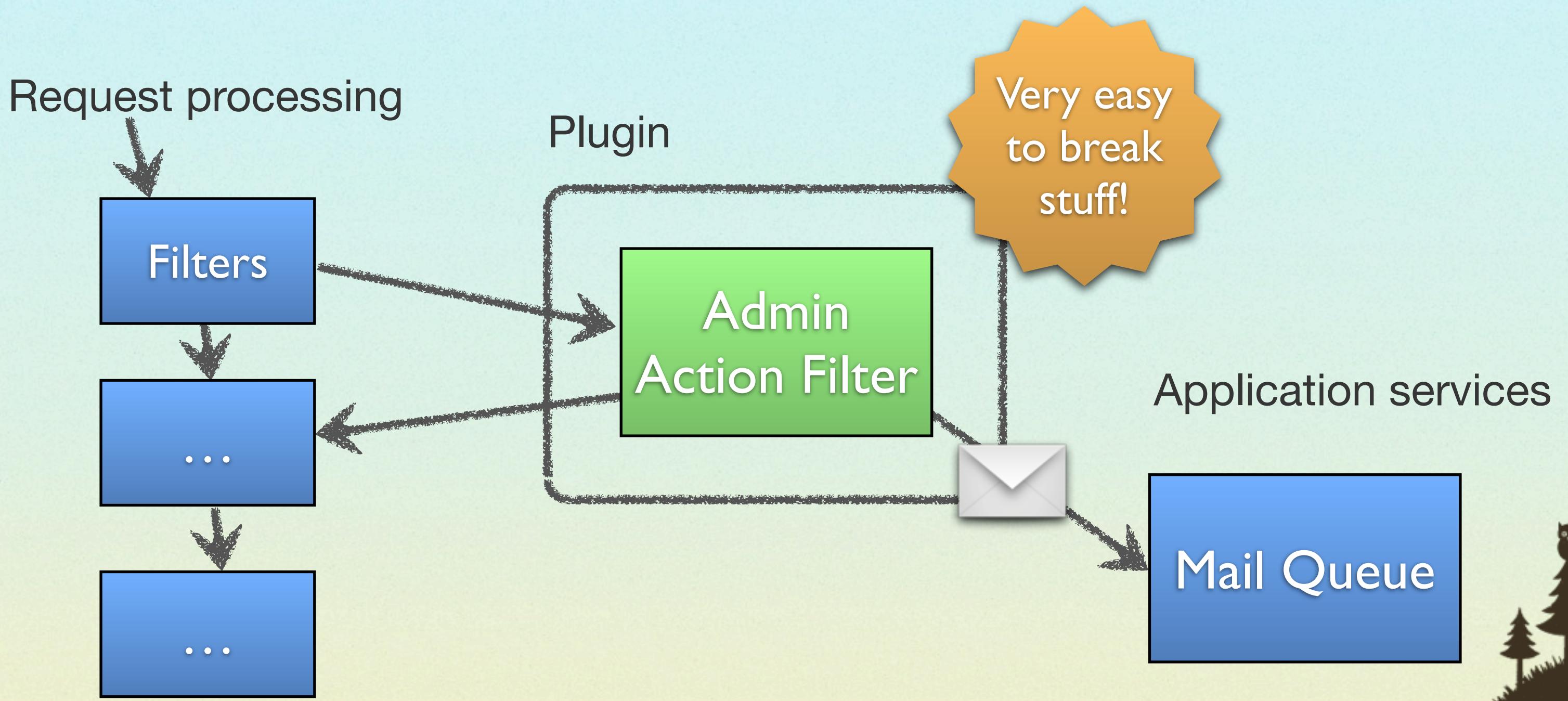
User: admin
Time: Tue Sep 27 19:12:37 PDT 2011

Request: <http://localhost:1990/confluence/admin/updateusermacro.action>

Parameters:

- * userMacro.bodyType = [none]
- * showInMacroBrowser = [true]
- * userMacro.iconLocation = []
- * userMacro.name = [foo]
- * userMacro.description = [New description 4]
- * userMacro.title = [Foo Macro]
- * atl_token = [663b499e54828974d84c6ca0b185c82fda8ebf28]
- * userMacro.categories = [confluence-content]
- * originalName = [foo]
- * userMacro.template = [## Macro title: My Macro

Filter plugin example





Filter plugin example

```
<atlassian-plugin key="com.example.plugins.sample" name="My Sample Plugin"
    plugins-version="2">
    <plugin-info>
        <version>1.0</version>
        <vendor>My Company</vendor>
    </plugin-info>

    <servlet-filter key="admin-action-filter" name="Admin Action Filter"
        class="com.atlassian.atlascamp.demo.AdminActionFilter"
        location="before-dispatch" weight="100">
        <url-pattern>/admin/*</url-pattern>
    </servlet-filter>

</atlassian-plugin>
```



Filter plugin example

```
public class AdminActionFilter extends AbstractHttpFilter {  
    private TaskQueue mailQueue;  
  
    public AdminActionFilter(MultiQueueTaskManager taskManager) {  
        mailQueue = taskManager.getTaskQueue("mail");  
    }  
  
    protected void doFilter(HttpServletRequest request, HttpServletResponse response,  
                           FilterChain chain) throws IOException, ServletException {  
  
        if (!request.getMethod().equals("GET")) {  
            String username = AuthenticatedUserThreadLocal.getUsername();  
            StringBuilder body = new StringBuilder();  
            body.append("There was an administrative change on Confluence:\n\n");  
            body.append("User: ").append(username).append("\n");  
            body.append("Request: ").append(request.getRequestURL()).append("\n");  
  
            MailQueueItem mail = new ConfluenceMailQueueItem("matt@atlassian.com",  
                                                               "Admin change made by " + username, body.toString(), "text/plain");  
            mailQueue.addTask(mail);  
        }  
  
        chain.doFilter(request, response);  
    }  
}
```





Filter plugin example



[confluence] Admin change made by admin

1 message

matt@atlassian.com <matt@atlassian.com>
To: matt@atlassian.com

There was an administrative change on the Confluence server:

User: admin
Time: Tue Sep 27 19:12:37 PDT 2011

Request: <http://localhost:1990/confluence/admin/updateusermacro.action>

Parameters:

- * userMacro.bodyType = [none]
- * showInMacroBrowser = [true]
- * userMacro.iconLocation = []
- * userMacro.name = [foo]
- * userMacro.description = [New description 4]
- * userMacro.title = [Foo Macro]
- * atl_token = [663b499e54828974d84c6ca0b185c82fda8ebf28]
- * userMacro.categories = [confluence-content]
- * originalName = [foo]
- * userMacro.template = [## Macro title: My Macro



Filter plugin: source code

<https://bitbucket.org/mryall/atlascamp-demo-plugin>



Scheduled job plugins

- Execute periodic background tasks
- Schedule routine tasks
- Possibilities:
 - Report: daily system status
 - Report: list of users with admin permissions
 - Process requests from JIRA: add new users, groups





Job plugin example



[confluence] Daily System Information Report

1 message

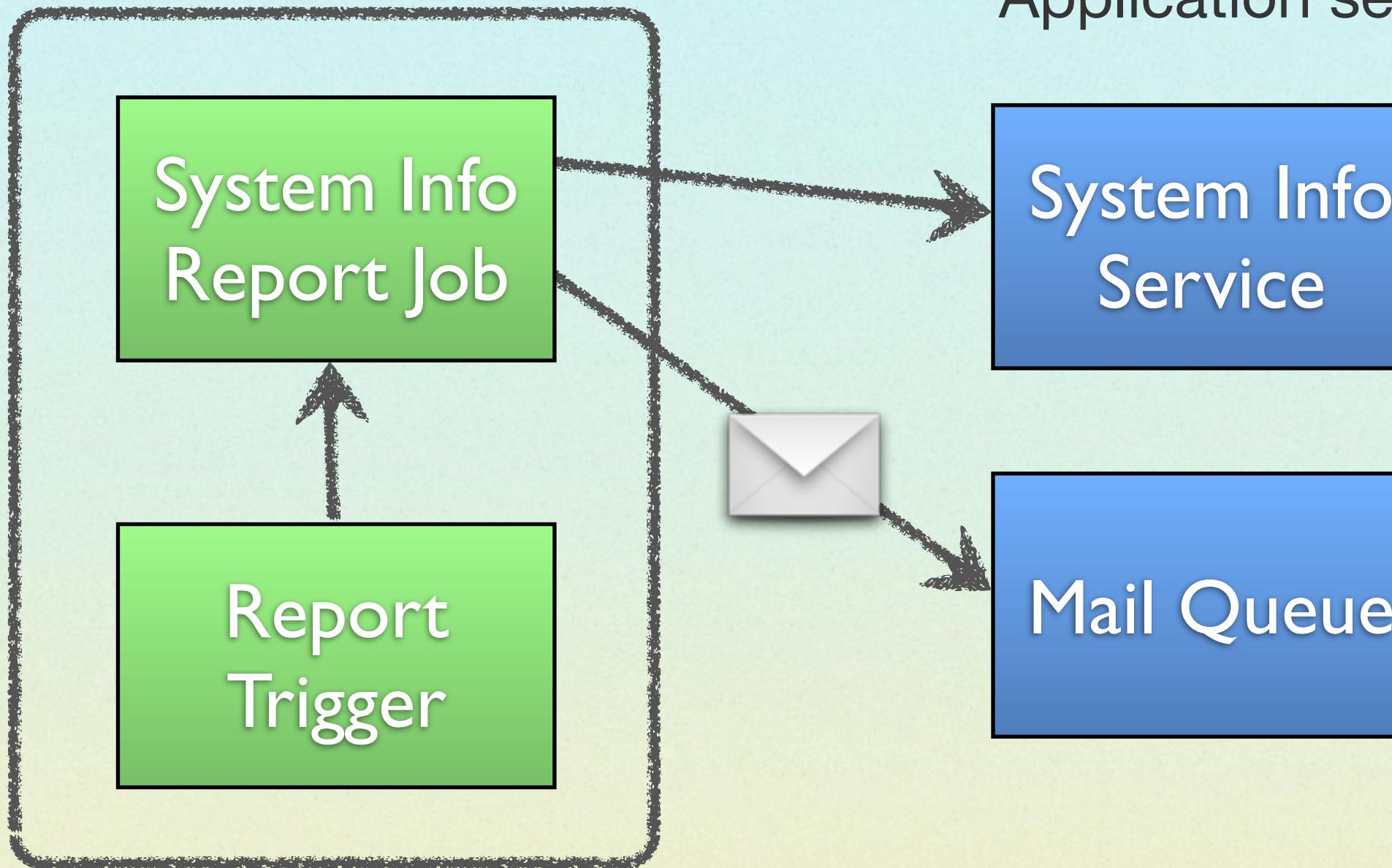
matt@atlassian.com <matt@atlassian.com>
To: matt@atlassian.com

System Information Report

Base URL	http://localhost:1990/confluence
Uptime	1 day, 3 hours, 19 minutes, 37 seconds
Used / Total Memory	237 / 283 MB
Database latency	0 ms

Job plugin example

Plugin



Application services





Job plugin example

```
<atlassian-plugin key="com.example.plugins.sample" name="My Sample Plugin"
    plugins-version="2">
    <plugin-info>
        <version>1.0</version>
        <vendor>My Company</vendor>
    </plugin-info>

    <component key="report-job" name="System Info Report Job"
        class="com.atlassian.atlascamp.demo.SystemInfoReportJobDetail"/>

    <trigger key="report-job-trigger" name="Report Job Trigger">
        <job key="report-job"/>
        <schedule cron-expression="0 0 6 * * ?"/><!-- 06:00 every day -->
    </trigger>

</atlassian-plugin>
```



Job plugin example

```
public class SystemInfoReportJob implements Job
{
    public void execute(JobExecutionContext jobExecutionContext)
    {
        JobDataMap jobData = jobExecutionContext.getMergedJobDataMap();
        TaskQueue mailQueue = (TaskQueue) jobData.get("mailQueue");

        String template = IOUtils.toString(
            getClass().getResourceAsStream("/sysinfo-report.vm"));

        Map<String, Object> context = ImmutableList.of(
            "systemInformationService", jobData.get("systemInformationService"));

        String content = VelocityUtils.getRenderedContent(template, context);
        MailQueueItem item = new ConfluenceMailQueueItem("matt@atlassian.com",
            "Daily System Information Report", content, "text/html");
        mailQueue.addTask(item);
    }
}
```



Job plugin example



[confluence] Daily System Information Report

1 message

matt@atlassian.com <matt@atlassian.com>
To: matt@atlassian.com

System Information Report

Base URL	http://localhost:1990/confluence
Uptime	1 day, 3 hours, 19 minutes, 37 seconds
Used / Total Memory	237 / 283 MB
Database latency	0 ms



Job plugin: source code

<https://bitbucket.org/mryall/atlascamp-demo-plugin>

Going further with scheduling

- Try out Bamboo
- It's like at or cron on steroids
- Use Task plugins to add functionality



<https://developer.atlassian.com/display/BAMBOODEV/Bamboo+Tasks+API>

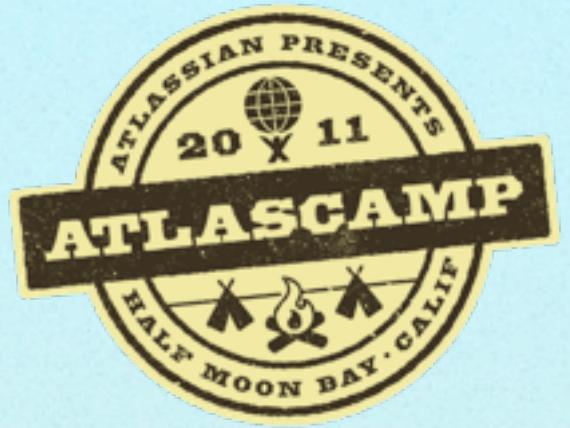


Matt's Java Plugin Points Challenge

“ Write a plugin that lets you know when something important changes on your system. ”

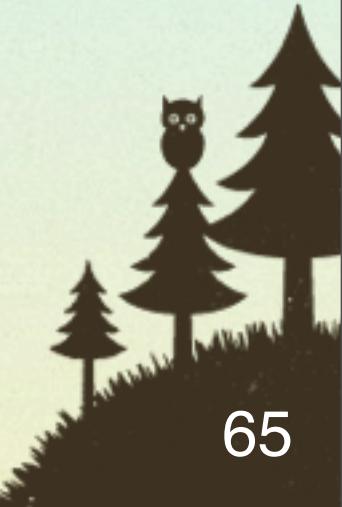
#atlascamp





Tools for Management

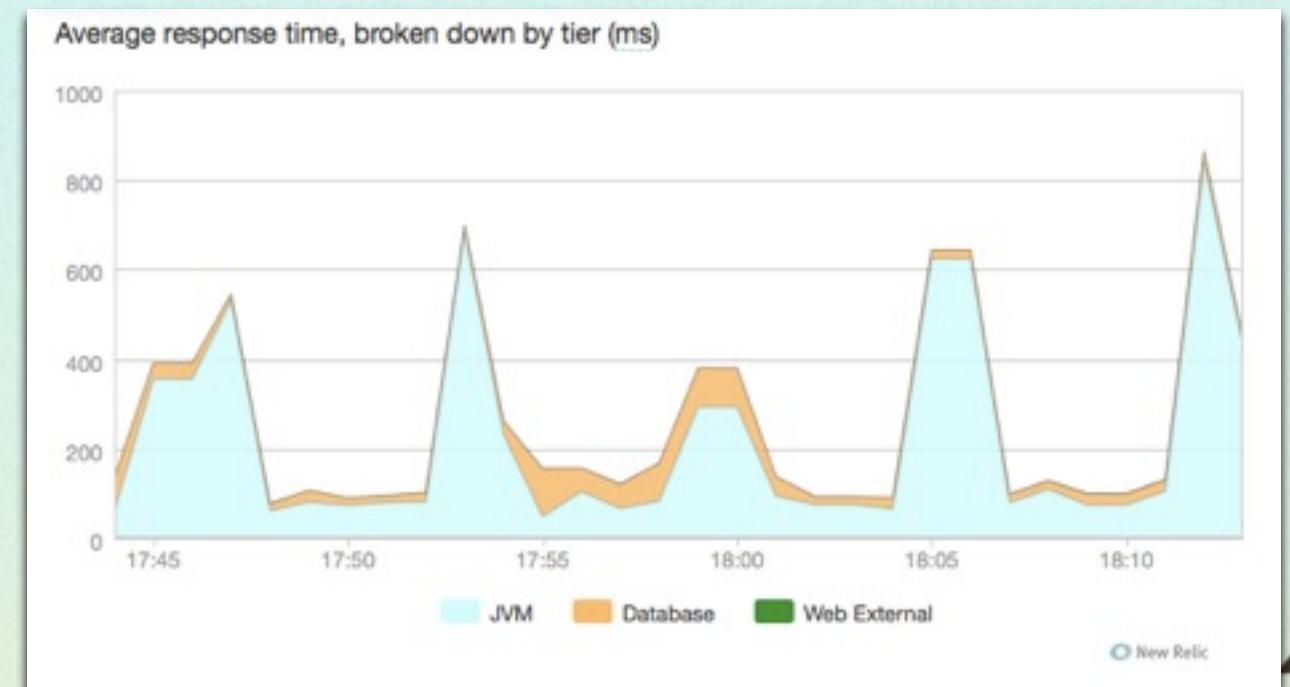
“Nothing a little percussive maintenance can’t fix.”





Tools for management: JMX

- Tomcat comes with a built-in JMX monitoring API
- Enabled through a system property
- Confluence provides additional metrics
- Metrics include:
 - Memory usage
 - Threads: active, blocked
 - Active requests, requests in last ten minutes





Tools for management: New Relic

- Commercial hosted monitoring service
- Uses a VM agent
- Masses of information about Java applications:
 - Slow requests
 - Slow database queries
 - Comparison between today/last week/last month
 - Custom metrics





Tools for management: New Relic

New Relic.

j2ee_confluence.atlassian.com ▾ Last 24 hours ▾
ending at 09/29 12:30

Volume annual My preferences Support Logout

APPLICATIONS End user New! App server Diagnostics Reports Settings

ALERTS

NOTES

EMBEDDED CHARTS

CUSTOM VIEWS

Overview Web transactions Database External services JVMs Background tasks

Average response time, broken down by tier (ms)

The chart shows the average response time in milliseconds for four application tiers over a 24-hour period. The Y-axis ranges from 0 to 300 ms. The X-axis shows time points from 09/28 16:00 to 09/29 12:00. The Database tier (orange) is the most volatile, with peaks reaching up to 280 ms. The JVM tier (light blue) follows, peaking around 200 ms. Memcache (dark blue) and Web External (green) show more stable performance, generally staying below 150 ms.

JVM Database Memcache Web External

Apdex score ? 0.97 [0.5]

Throughput (rpm)

This chart displays the throughput of the application in requests per minute (rpm) over a 24-hour period. The Y-axis ranges from 0 to 3000 rpm. The X-axis shows time points from 09/28 16:00 to 09/29 08:00. The throughput starts around 2000 rpm, dips slightly, and then fluctuates between 1500 and 2500 rpm throughout the day.

New Relic

Compare with yesterday and last week

Slow transactions →

	Resp. time
/display/* 12:29 — 1 minute ago	4,344 ms
/*.pdf 12:28 — 2 minutes ago	101,312 ms

Errors →

	Count
Invalid parameter encoding /400/*	87
Basic Authentication Failure - Reason : AUTHEN /401/*	25

Recent events

All

68

Tuesday 17:54

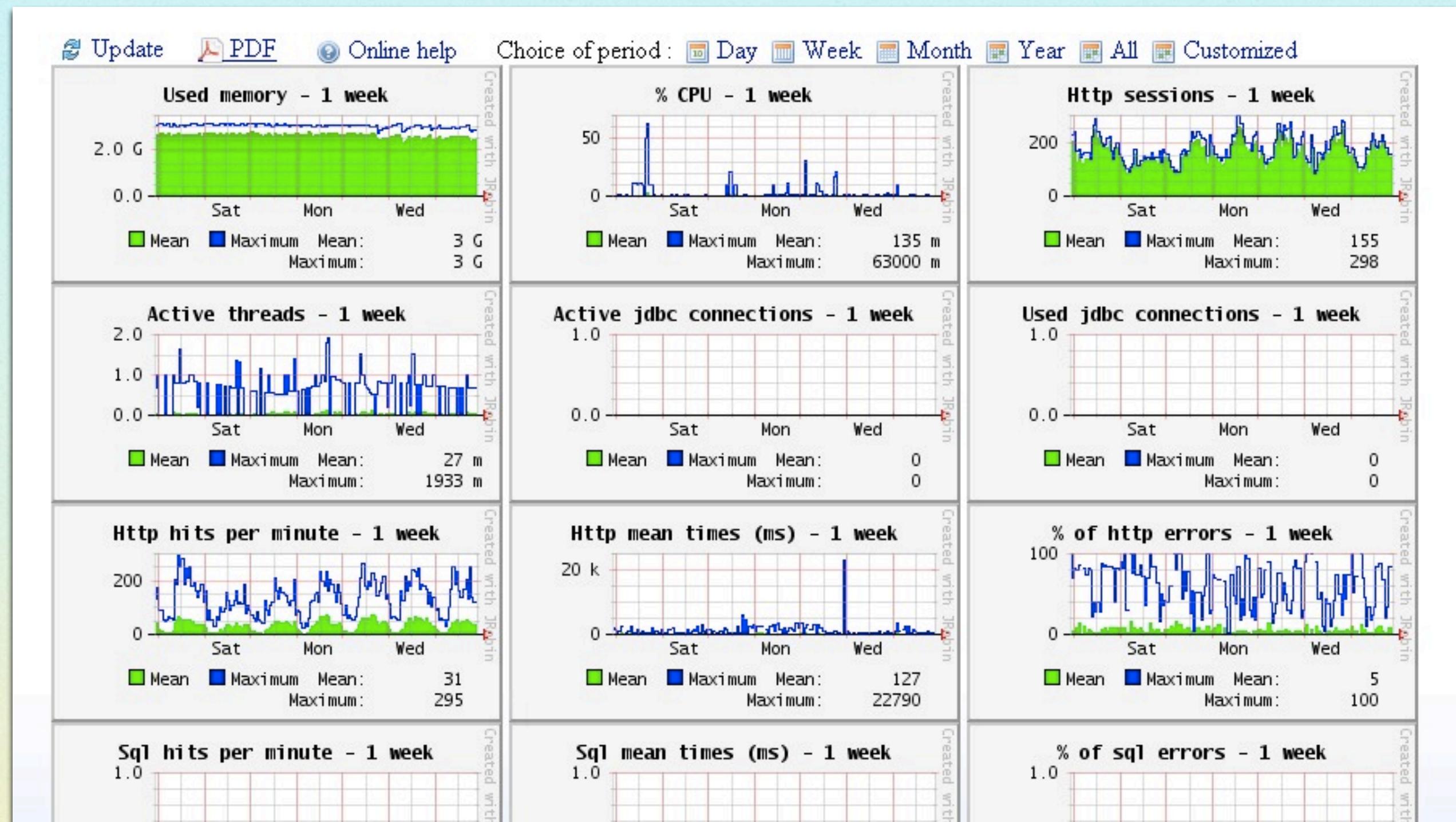


JavaMelody Monitoring plugin

- Open source Java monitoring package
- Free plugin for JIRA, Confluence, Bamboo
- Captures statistics inside the application
- <https://plugins.atlassian.com/plugin/details/20909>

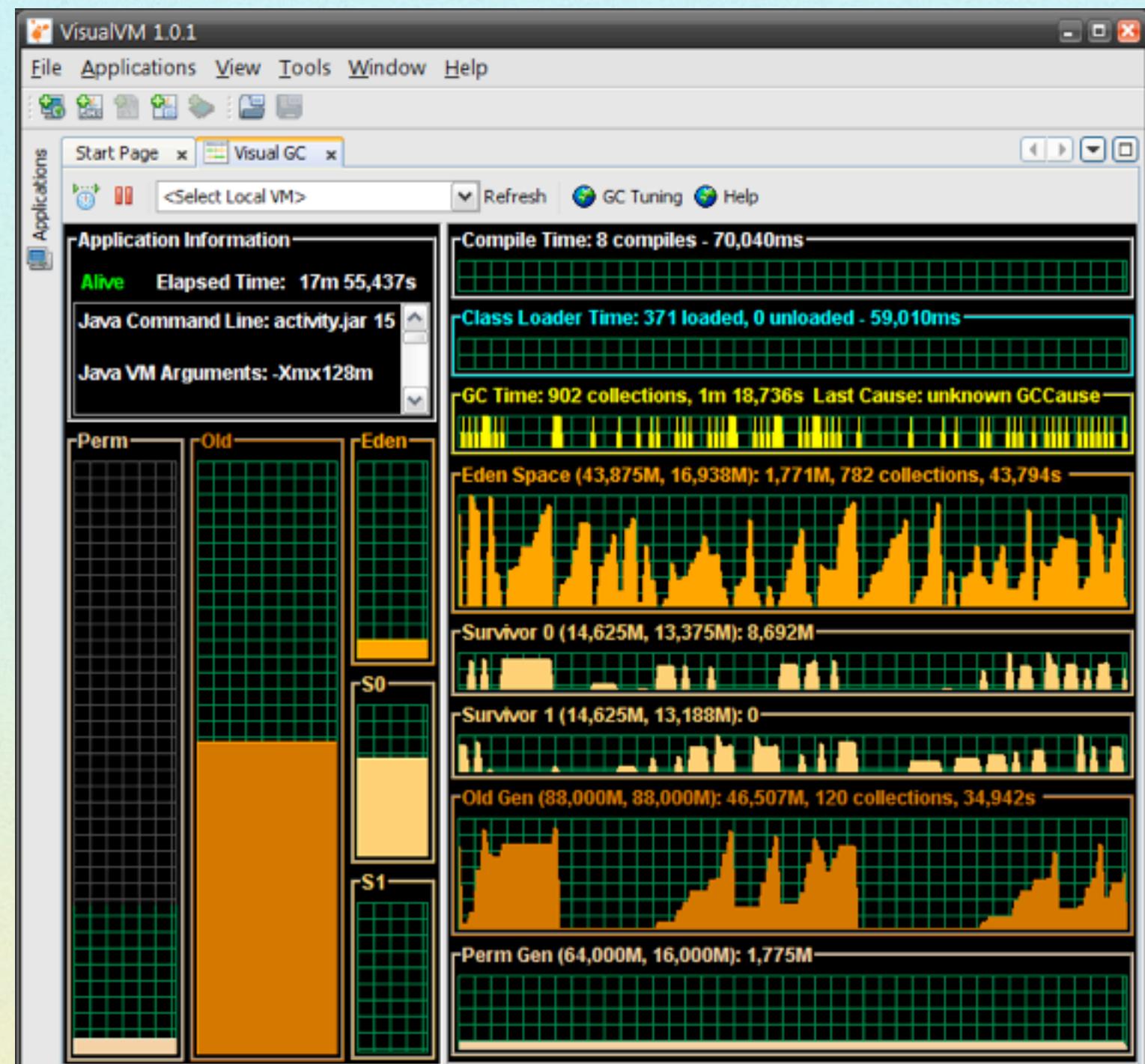


JavaMelody Monitoring plugin





VisualVM monitoring tool





Tools for management: access logging

- Application access logs provide user and memory information, in addition to request URL, time taken, etc.
- Can diagnose problems with certain requests or usage patterns
- Can provide audit trail for user actions
- To enable application access logging:
 - JIRA: in the UI, or in log4j.properties
 - Confluence: enable filter in web.xml



Tools for management: analytics

- Get some free, lightweight tracking for your site
- See what content is most frequently accessed
- Track browser and platform usage
- To add the analytics JavaScript code to the header:
 - JIRA: edit header.jsp to add it
 - Confluence: add via Custom HTML in UI





Tools for management: analytics

confluence.atlassian.com

My Analytics Accounts: Atlassian Marketing

Export Email Advanced Segments: All Visits

Dashboard

Visits

Mar 28 - Apr 2 May 1 - May 7 Jun 5 - Jun 11 Jul 10 - Jul 16

Site Usage

Metric	Value
Visits	4,335,351
Pageviews	13,614,041
Pages/Visit	3.14
Time on Site	00:04:08
New Visits	47.99%

None

Page	Pageviews
/dashboard.action	212,689
/display/DOC/Confluence+Documentation+Home	148,276
/display/JIRA/JIRA+Documentation	136,022
/display/JIRA043/JIRA+Documentation	121,573
/dologin.action	84,222
/display/DOC/Setting+the+JAVA_HOME+Varia...	83,838
/display/ALLODOC/Atlassian+Documentation	61,240
/display/JIRA/Installing+JIRA+Standalone	61,046
/display/JIRA/JIRA+User's+Guide	59,888
/display/DOC/Confluence+User's+Guide	51,233



Tools for management: Luke

The screenshot shows the Luke - Lucene Index Toolbox interface version 0.9.9 (2009-09-30). The main window has a menu bar with File, Tools, Settings, and Help. Below the menu is a toolbar with Overview, Documents, Search, Files, and Plugins. The main area has tabs for Analysis, QueryParser, Similarity, and Collector, with Analysis selected. A search expression "code" is entered in the search field. The analyzer dropdown is set to org.apache.lucene.analysis.SimpleAnalyzer and the default field is contentBody. The optional constructor argument field is empty. Below this, a query details panel shows "contentBody:code" with Parsed and Rewritten tabs, both of which are currently selected. The search results table lists 12 documents with scores from 0.0775 to 0.7754. The columns include e#, Score, Doc. Id, ancestors, attachment-n, attachment-o, authorContrib, change-docu, change-docu, classname, comment, confluence-d, content-d, and a footer column. The footer also includes a note about contracts and a link to the index name: /Users/mry...fluence/20110721-idea/index.

e#	Score	Doc. Id	ancestors	attachment-n	attachment-o	authorContrib	change-docu	change-docu	classname	comment	confluence-d	content-d
0	0.7754	642 65539 6559					null<>	13112				
1	0.7229	674 65547 6559					null<>	13112				
2	0.3102	644 65538 6559					null<>	13112				
3	0.9518	646 65537 6559					null<>	13112				
4	0.7714	678 65545 6559					null<>	13112				
5	0.7711	656 65554 6559					null<>	13112				
6	0.1551	560					null<>	13112				
7	0.9345	124 65591 6559					null<>	13112				
8	0.5153	156 65600 6559					null<>	13112				
9	0.76163	166 65549 6559					null<>	13112				
10	0.76163	546					null<>	13112				
11	0.0775	616 65551 6559	application/p com.atlassian									All contract e!

<http://code.google.com/p/luke/>



Tools for management: Caching

Confluence cache contents

Cache: com.atlassian.confluence.cluster.safety.DefaultClusterSafetyManager.safetyNumber (1 items)

Key	Value
safety-number (String)	1632879576 (Integer)

Cache selection

Select a cache from the list:

- com.atlass...DefaultPersistentDecoratorDao (41)
- com.atlass...BandanaPersister (25)
- com.atlass...ConfluenceVelocityResourceC... (23)
- com.atlass...ContentEntityObject (21)
- com.atlass...ScheduledJobStatus (14)
- net.sf.hib...StandardQueryCache (12)
- net.sf.hib...UpdateTimestampsCache (6)
- com.atlass...InternalUserAttribute (4)
- com.atlass...bodyContents (4)
- com.atlass...BodyContent (4)
- bucket.use...BucketPropertySetItem (3)
- com.atlass...AttachmentCache (2)
- com.atlass...Attachment (2)

- Cache sizes have a huge impact on Confluence performance
- Tweak the sizes via admin UI
- Inspect content in Confluence caches via '/admin/cachecontents.jsp'

Matt's Management Tools Challenge

“ *Use monitoring or analytics to improve your knowledge of what your system is doing.* ”

#atlascamp



Where we've been

1. Scripting & Remote APIs
2. Simple Plugin Points
3. Java Plugin Points
4. Tools for Management



TAKE-AWAYS

“ Use Atlassian’s remote APIs, scripting, plugins and management tools to improve your life as an administrator. ”

#atlascamp





Share your knowledge!

 **ATLASSIAN** Answers



Get in touch

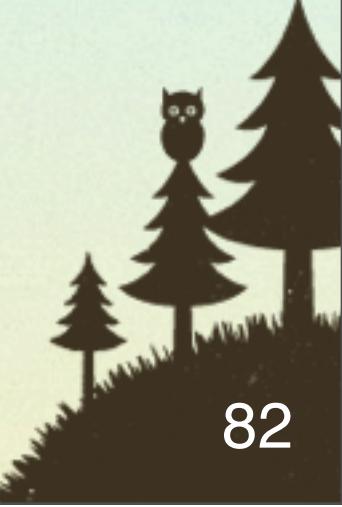
- @mryall
- matt@atlassian.com
- <http://mattriyall.net>
- <http://bitbucket.org/mryall>





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- Thumbs up
<http://www.flickr.com/photos/sarahreido/3120877348/>





Thank you!

