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JIRA Administration Best Practices


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Assumptions

- Working knowledge of JIRA
- Understanding of JIRA administration tasks
- Working to JIRA v6 or later.

Clearvision Gaming Inc.



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1. Workflows
 2. Scaling
 3. Searching/Reporting
 4. Troubleshooting

Workflows - Agenda

More hands on time

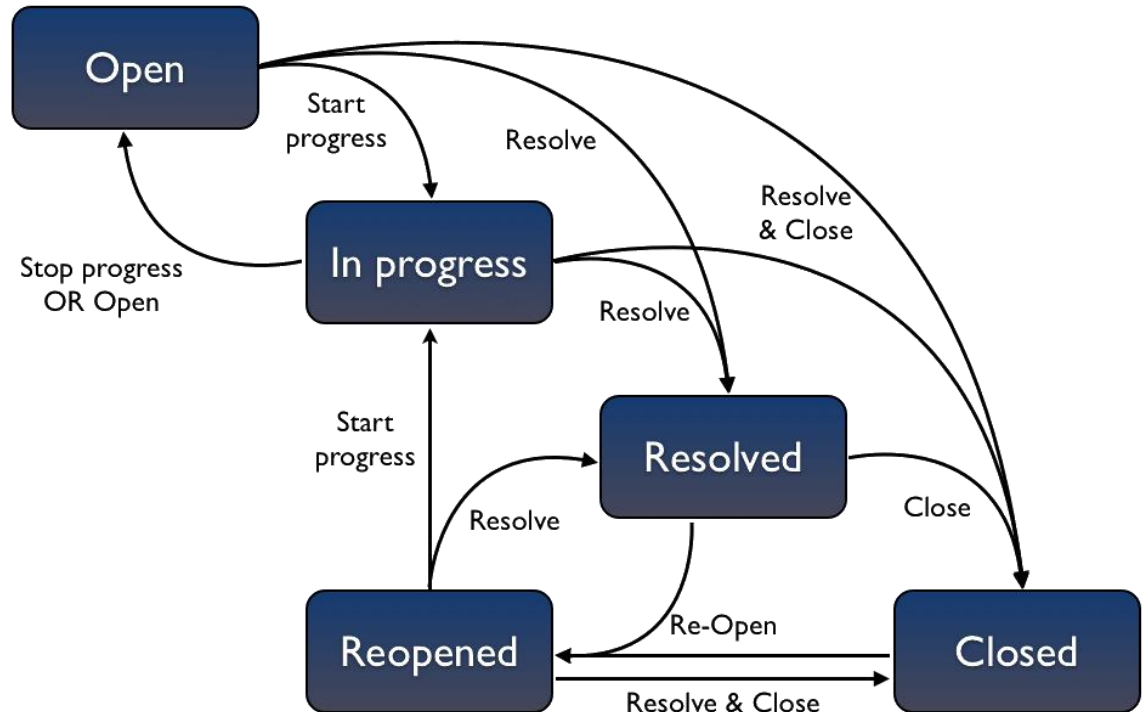
- Workflow Design
- Workflow Sharing
- Simplifying Workflows (Activity)

JIRA 6.1 – Default Behaviour

- “Out of the Box” experience simplified
 - New default workflow...
 - Anyone can transition issues
 - whoever does a transition will be the new assignee
 - Create Issue now leaves the issue unassigned by default

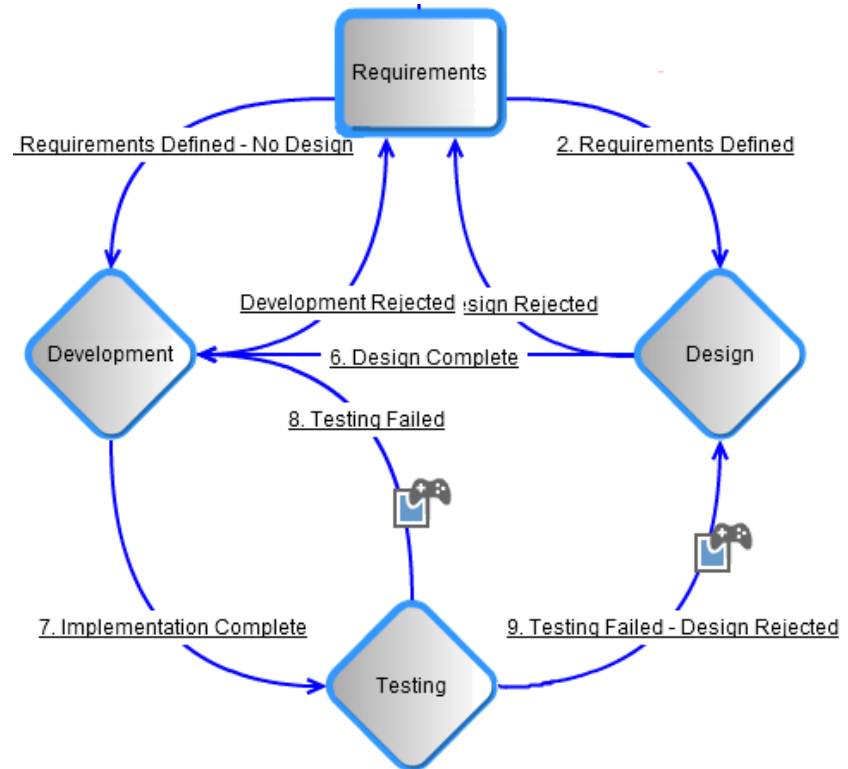
Workflow Design

- First Steps
 - Visualize
 - Identify
 - Plan



JIRA Workflows - Workflow Design

- Design & document
 - Keep a permanent record
- Diagram!
- Represent what you do
 - People not process
- Use the Guidebook
 - <https://confluence.atlassian.com/display/JIRA/Workflows+Guidebook>
- Keep it simple!



JIRA Workflows - Considerations

- Audit trails
- Push vs Pull processes
- Open vs Restricted
- 'Re-use what you can' vs 'Start again'
- Workflow sharing – new in JIRA 6.0
 - Export / import workflows

Workflow Design

Modify the Default if:

- Simple tweaks
- Push processes
- Built in notifications
- Default permissions




Start from Scratch if:

- Pull processes
- Avoiding default dependencies
- Fewer Steps
- Many steps (10+)

Workflows - Case Study

- Clearvision Gaming Inc. has implemented a workflow for the Grand Theft Scooter project based on the input from various departments.
- As the project lead, you need to verify this implementation and look for improvements.
- Study this workflow in your environment
- Are there any ways it could be improved?

Workflows - Activity

-  Study the workflow in place. Are there any ways it could be improved?
-  Design a workflow by diagramming the proposed changes – Gliffy is installed in JIRA if you would like to use it.
-  Implement these changes in the Grand Theft Scooter project

1. Workflows

 2. Scaling

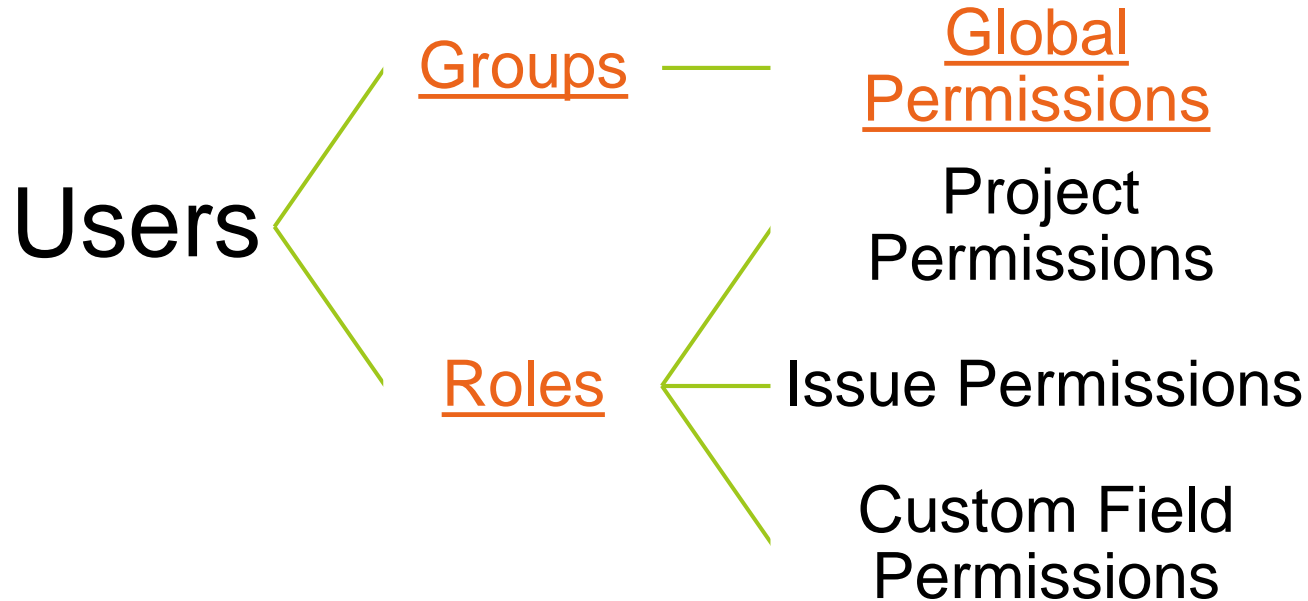
3. Searching/Reporting

4. Troubleshooting

Scaling - Agenda

- JIRA Security
- Custom Fields
- Scaling JIRA
- Extending JIRA
- Integrations & Add-ons
- Upgrading JIRA

JIRA Permissions



Security - Tips



Use permission checks sparingly



Replace “JIRA-users” with “anyone”



Comment visibility



Restrictions trump permissions



JIRA Scaling - Custom Fields

- Custom field types
- Custom field context
- JavaScript in custom fields
- Do you need a custom field?
- Re-indexing takes time!

JIRA 6.1 – Custom Fields

- Split into Standard & Advanced fields
 - ‘Standard’ fields show a preview as they are created
- ‘On the Fly’ Creation
 - Administrators can create and configure new Custom Fields from the Issue view screen
 - Field is placed on ‘View’, ‘Edit’ and ‘Create’ screens – i.e. use immediately

Scaling JIRA - Performance Factors

- Data
- Usage (users)
- Configuration (Plugins)
- Java Virtual Machine
- Hardware/Operating System
 - Virtualized
- Key Factors
 - Issues
 - Custom Fields
 - Permissions
 - Concurrent Operations

Scaling JIRA

Recent Performance Improvements

- New Features
 - JIRA mobile
 - Global workflow schemes
 - Background Indexing
 - Project Templates
- Recent Performance Improvements
 - Faster searches (40%)
 - Removed page loads (pop-ups)










Scaling JIRA - Capacity

- Determine your server limits and timescale
 - Setup test environment
 - Generate test data
 - Check your performance

Scaling JIRA - Archiving

- Online archiving
 - “Hiding” a project
 - Making a project “read-only”
- Offline archiving
 - XML Backup / delete
- New JIRA Archiver
 - <http://atlss.in/archiverbeta>
- Clearvision Affinity Bridging
 - <http://www.clearvision-cm.com/products/affinity/>

Scaling JIRA - Tips

-  Select appropriate web browser (chrome)
-  Reuse configurations where possible (schemes / workflows)
-  Delete anything that's no longer needed
-  Limit Bulk Editing – perform out of hours
-  Replace JIRA-users with the 'Anyone' permission
-  JIRA Federation
-  Monitor your logs – even if nothing appears to be wrong
-  Check your database regularly
-  Tune the JVM!



Extending JIRA

- IT Infrastructure Library (ITIL)
- Agile Development
- Knowledge Base
- Change Management
- Customer Relationship Mgt (CRM)
- Helpdesk or Support
- Project Management
- Requirements Management
- Resource or Portfolio Mgt
- System Administration
- Test Case Management
- Others?

Integrations & Add-ons

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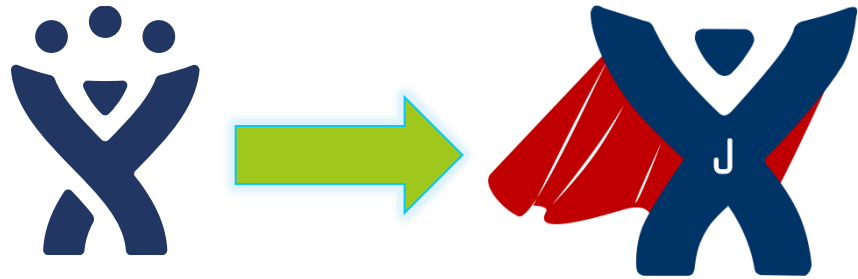
- JIRA Agile (GreenHopper)
- JIRA Collect (Bonfire)
- Confluence
- Team Calendars
- Hipchat
- Stash
- Bitbucket
- Fisheye
- Crucible
- Bamboo
- Clover

3rd Party

- Subversion
- DVCS
- Zendesk
- IDE connectors
- Salesforce
- Bugzilla
- JIRA Client
- JIRA Command Line
- AgileSCM
- TortoiseSVN Plugin
- Gliffy
- Balsamiq
- Lucid Chart

Upgrading JIRA




- Check add-ons
- Check integrations
- Customizations?
- Check the upgrade guide!




Strategic Thinking – Case Study

- The Clearvision Gaming Inc. directors are looking to reduce development costs and leverage JIRA for additional uses.
- As JIRA is embedded into the process, the directors are looking to you for recommendations as to other areas of the business JIRA could be used for or integrated with.

Strategic Thinking - Activity

-  Using your own organization, think about ways that you could leverage JIRA for additional uses.
-  Consider the impact these changes may have on your server.
-  Using your understanding of JIRA extensions, make a personal recommendation to the board of directors based on the provided information.

1. Workflows
2. Scaling
-  3. Searching & Reporting
4. Troubleshooting

Searching/Reporting - Agenda

- Searching
 - Searching & Filters
 - Advanced Searching – JQL
 - Searching Tips
- Reporting
 - Default Reports
 - Reporting Integrations
 - Reporting Add-ons
 - Custom Reports & API
 - Reporting Tips

Searching & Filters

- JIRA Searching
 - Quick Search
 - Basic Search
 - Advanced Search
- Filters
 - Unique ID
 - Report Access



Using JIRA 6.0 – 6.0.6? Upgrade now to 6.0.7 or later!

This point release corrects several performance challenges discovered in earlier point versions of JIRA 6.

Searching - Tips



You cannot compare the values of two different fields



Nested Queries: You can reference the results of saved queries (filters) within other JQL queries



If you want to search a string, use the 'text' operator rather than naming multiple search fields

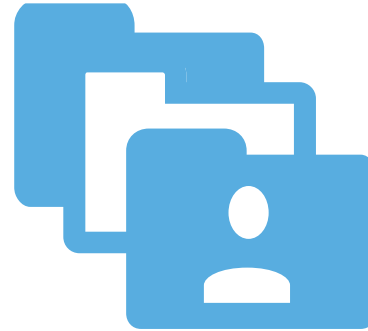
Default Reports



- Workload pie chart
- User workload report
- Version workload report
- Version time tracking report
- Single level group by report
- Created vs resolved issue report*
- Resolution time report
- Pie chart report*
- Avg age report *
- Recently created issues report*
- Time since issued report

Reporting Integrations

- Confluence
- Excel
- REST API
- Wallboards



Reporting Add-ons

Common 3rd Party Add-on Categories

- Display reports
- Project management reports
- Time tracking reports
- Risk management reports
- Additional charting tools
- Version control
- Gantt Chart



Custom Reports – Using the API

- Custom Add-ons
- REST API
- Developer Guide

Reporting Tips



Limit the data your filter returns



Include only relevant columns



Avoid search-intensive gadgets



Limit the number of gadget refreshes



Plan subscriptions for out of hours.

Case Study – Searching/Reporting

- John Spencer, the VP of Gaming at Clearvision Gaming Inc. Entertainment has heard of a competitor to Grand Theft Scooter in development at a rival company.
- He requires a number of reports to gain an overview of the project In order to have a visual reference of the health of the project so that appropriate measures can be taken to speed up development.
- You need to generate these reports and use an appropriate method of visualizing them.

Case Study – Searching/Reporting

- 1) The amount of time remaining on the estimates for version 1.0 of Grand Theft Scooter.
- 2) The amount of time spent in total on issues within the Grand Theft Scooter project.
- 3) Open issues in the Grand Theft Scooter project which have never been assigned in descending priority order.

Activity – Searching/Reporting

- ⚙ Use what you know about JQL to generate searches and save them as filters for each of the above reports

<https://confluence.atlassian.com/display/JIRA/Advanced+Searching>

- ⚙ Configure a dashboard to display the required data in the format you think fits best.
- ⚙ Remember to share the generated filters and dashboard so John has access

1. Workflows
2. Scaling
3. Searching/Reporting

 4. Troubleshooting

Troubleshooting - Agenda

- Introduction to troubleshooting
- Crashes
- JIRA log files
- Common causes
- Performance issues
- Email Failures
- Email loops
- Atlassian resources

Troubleshooting



Crashes

- Consider your server environment
 - Antivirus
 - Network outage
 - Virtual environment
- JIRA log location
 - Default location
- Application server logs



JIRA Log Files

```
at java.util.concurrent.ThreadPoolExecutor$Worker.runTask(Unknown Source)
at java.util.concurrent.ThreadPoolExecutor$Worker.run(Unknown Source)
Caused by: org.apache.commons.httpclient.ConnectTimeoutException: The host did not accept the connection within timeout of 1000 ms
at org.apache.commons.httpclient.protocol.DefaultProtocolSocketFactory.createSocket(DefaultProtocolSocketFactory.java:124)
at org.apache.commons.httpclient.HttpConnection.open(HttpConnection.java:706)
at org.apache.commons.httpclient.HttpMethodDirector.executeWithRetry(HttpMethodDirector.java:386)
at org.apache.commons.httpclient.HttpMethodDirector.executeMethod(HttpMethodDirector.java:170)
at org.apache.commons.httpclient.HttpClient.executeMethod(HttpClient.java:396)
at org.apache.commons.httpclient.HttpClient.executeMethod(HttpClient.java:324)
at com.atlassian.sal.core.net.HttpClientRequest.executeMethod(HttpClientRequest.java:479)
at com.atlassian.sal.core.net.HttpClientRequest.executeAndReturn(HttpClientRequest.java:306)
Caused by: java.net.SocketTimeoutException: connect timed out
at java.net.PlainSocketImpl.socketConnect(Native Method)
at java.net.PlainSocketImpl.doConnect(Unknown Source)
at java.net.PlainSocketImpl.connectToAddress(Unknown Source)
at java.net.PlainSocketImpl.connect(Unknown Source)
```

Common Causes

- Java Seg Faults
- Out of Memory: Permgen space
 - *java.lang.OutOfMemoryError: PermGen space*
- Out of Memory: Heap space
 - *java.lang.OutOfMemoryError: Java heap space*

Performance Issues

Key sources:

1. Memory
2. Disk access
3. Database access
4. Untuned JVM

Email Failures

Check the following :

- JIRA's SMTP Server
- Heap Space Errors
- The Mail Queue
- User Settings
- Transition Notifications
- Email Content
- JIRA Logging



Email Loops

Email loops can cause :

- Out of memory errors
- JIRA crashes
- Poor performance



<https://confluence.atlassian.com/display/JIRA/Creating+Issues+and+Comments+from+Email>


Atlassian Resources





Troubleshooting - Case Study

- On the 1st October, at around 3:15 Clearvision Gaming Inc.'s JIRA crashed.
- Log files are available.
- Can you find and correct the cause of this?

Troubleshooting - Activity

-  Analyse the provided log file.

It is available on your desktop in your training environment
-  Using your own experience, and the resources available on the internet, identify the cause and a solution for this problem.
-  Implement the solution in your JIRA.



Atlassia *Thank you!*

Your Feedback is vital to us! Please spend
five minutes completing this survey:

<https://www.surveymonkey.com/s/cvjira>

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Questions?

Resources

JIRA documentation	https://confluence.atlassian.com/display/JIRA/JIRA+Document ation
Atlassian Answers	https://answers.atlassian.com
Atlassian Support portal	https://support.atlassian.com/secure/Dashboard.jspa
Little JIRA Tricks	http://www.j-tricks.com/
Atlassian Marketplace	https://marketplace.atlassian.com
Latest Atlassian Blogs	http://blogs.atlassian.com/