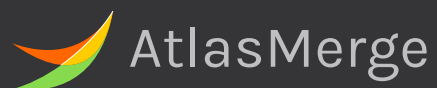


# Migrate and Consolidate multiple Jira & Confluence instances

Atlassian Community Event, Cologne

5<sup>th</sup> October 2021



merge & consolidate without compromises

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Built with Atlassian ADG 3.2

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# Agenda

- Terminology
- Motivation
- Challenges
- Migration Requirement Engineering
- Tools & Methods
- Conclusion
- AtlasMerge Demo



# Terminology

- Instance
  - An Atlassian tool deployment in one environment e.g. <https://jira.example.org>
- Migration
  - Transfer data between systems. A into B
- Consolidate
  - Migrate data from multiple systems to single system. A, B, ... into Z
- Merge Data
  - Multiple entities are transformed into one. “To Do”, “TO DO” -> “todo”
- Map Entities
  - Change name or id during migration
- On-Premise
  - License to run Atlassian tools on your own hardware or in the cloud
- Server
  - Legacy On-Premise licensing/hosting. No Clustering allowed.
- Data Center
  - On-Premise licensing/hosting. Allows clustering on multiple nodes.
- Atlassian Cloud
  - Cloud environment operated by Atlassian
- (Atlassian) Cloud Migration
  - Get Data from On-Premise to Atlassian Cloud



# Motivation

## Why to Merge & Consolidate

- Reduce Licensing costs
  - Users only need to be licensed once
  - Higher user tier, lower costs/user
  - Apps need to be licensed for more users
- Better Collaboration
  - Links more usable
  - Easier Reporting
- Reduce Operational costs
  - Fewer Administrators
  - Less Infrastructure



**Let Teams work together!**




# Challenges

- Built-in migration features are very minimalistic
  - No support for mapping/merging of Apps, Users, Configuration items, Dashboards, Queries
  - Bugs, bugs, bugs...
- Jira/Confluence are extremely modular
  - Entity Model
  - Data not normalized
  - No foreign keys/referential integrity not verifiable
  - Often text blobs
- JQL/Scripts cannot be migrated 1:1
- Historic Garbage Data
  - Legacy and corrupted data
- Import/Export takes forever



# Challenges

Restoring a project from a backup is not a trivial task. You may be required to change the configuration of your target Jira instance to accommodate the project import. Additionally, the Project Import data mapping can be resource intensive on your hardware and may take a long time to complete, if you are importing a large project.

 We strongly recommend that you perform a [full backup](#) of your target Jira instance before attempting to restore a project into it.



# Challenges



Confluence Server and Data Center / CONFSERVER-31528

## When Space XML Imports Fail, Partial Space Data is Left in the Database

### Details

Type:	Bug	Status:	<b>LONG TERM BACKLOG</b> (View Workflow)
Priority:	Medium	Resolution:	Unresolved
Affects Version/s:	3.5.16, 4.3.7, 5.3.1, 5.7-OD-47, 6.2.0, 6.2.4, 6.3.1, 7.4.4	Fix Version/s:	None
Component/s:	Space - Export / Import		
Labels:	<a href="#">database/hibernate</a> <a href="#">importing</a> <a href="#">I112</a> <a href="#">loyalty</a> <a href="#">team-imps</a>		
Support reference count:	80		
Symptom Severity:	Severity 2 - Major		
UIS:	18		
Bug Fix Policy:	<a href="#">View Atlassian Server bug fix policy</a>		

### Description

**NOTE:** This bug report is for **Confluence Server**. Using **Confluence Cloud**? See the corresponding bug report.

Space XML imports will sometimes fail due to a variety of reasons:

- Confluence runs out of memory
- The import process times out
- Unique key constraint violations
- A few other causes are described in <https://confluence.atlassian.com/display/DOC/Troubleshooting+XML+backups+that+fail+on+restore>

Oftentimes these partially imported spaces remain in the DB without any way to remove them via the UI, making a re-import attempt impossible (due to a duplicate Space Key or other constraint violation).





# Requirements

No single way to migrate Atlassian tools

- What do we need?
- How good is good enough?



# Requirements – Jira

- Data Type
  - Issue Content
  - Issue History and Dates
  - Project Configuration
  - Global Configuration
  - User Settings
  - Shared Objects
  - App Data
- Scope
  - Single Project
  - Multiple Projects
  - Multiple Instances
  - Filtered
- Mapping/Merging
  - Users
  - Customfields
  - Issue Types, Status, Resolutions, ...
  - JQL Queries
  - Dashboards
  - Scripts
  - Remote Links
- Operations
  - Performance
  - Downtime
  - Testable/Reproducible
  - Automated



# Requirements – Confluence

- Data Type
  - Pages
  - Page History and Dates
  - Space Configuration
  - Global Configuration
  - User Settings
  - App Data
- Scope
  - Single Space
  - Multiple Spaces
  - Full Instance
  - Filtered Instance
- Mapping/Merging
  - Users
  - Jira integration (JQL, Gadgets)
- Operations
  - Performance
  - Downtime
  - Testable/Reproducible
  - Automated

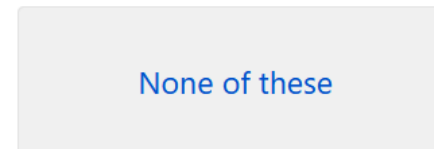
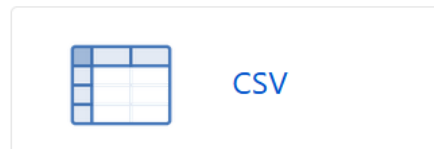


# Jira CSV/JSON Import

- CSV is simplest solution
- Only Issue Data, no History
- JSON CSV + History
- Jira does not export Json in required Format

## Jira import wizard

To get started, click the product you want to import your projects from.



You are using version 9.2.2. For help with this plugin please contact [JIRA support](#).

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# Jira CSV Import

- Data Type
  - ✔ Issue Content
  - ✖ Issue History and Dates
  - ✖ Project Configuration
  - ✖ Global Configuration
  - ✖ User Settings
  - ✖ Shared Objects
  - ✖ App Data
- Scope
  - ✔ Single Project
  - ✔ Multiple Projects
  - ✖ Multiple Instances
  - ⚠ Filtered
- Mapping/Merging
  - ❓ Users
  - ✔ Customfields
  - ✔ Issue Types, Status, Resolutions, ...
  - ✖ JQL Queries
  - ✖ Dashboards
  - ✖ Scripts
  - ✖ Remote Links
- Operations
  - ✖ Performance
  - ✔ Zero Downtime
  - ✖ Manual Labor
  - ✔ Costs



# Jira JSON Import

- Data Type
  - ✔ Issue Content
  - ✔ Issue History and Dates
  - ✖ Project Configuration
  - ✖ Global Configuration
  - ✖ User Settings
  - ✖ Shared Objects
  - ✖ App Data
- Scope
  - ✔ Single Project
  - ✔ Multiple Projects
  - ✖ Multiple Instances
  - ⚠ Filtered
- Mapping/Merging
  - ❓ Users
  - ✔ Customfields
  - ✔ Issue Types, Status, Resolutions, ...
  - ✖ JQL Queries
  - ✖ Dashboards
  - ✖ Scripts
  - ✖ Remote Links
- Operations
  - ✖ Performance
  - ✔ Zero Downtime
  - ✖ Manual Labor
  - ✔ Costs





# Jira Project Import

- Built-in
- Only issue data – no configuration
- Only single projects
- API to support app data exists



## Project Import: Select Backup File

This tool allows you to import a single Jira project from a backup file. This is a complex operation. Before you begin, we strongly recommend that you do the following:

- read our [Project Import documentation](#)
- do the project import on a test Jira instance
- [back up](#) this Jira instance (don't forget to back up the attachments as well)

Enter the name of the Jira backup zip containing the project data.

Files will be loaded from: **`/var/atlassian/application-data/jira/import`**

Backup attachments will be loaded from: `/var/atlassian/application-data/jira/import/attachments`

File name\*

Next

# Jira Project Import

- Data Type
  - ✔ Issue Content
  - ✔ Issue History and Dates
  - ✖ Project Configuration
  - ✖ Global Configuration
  - ✖ User Settings
  - ✖ Shared Objects
  - ✖ App Data
- Scope
  - ✔ Single Project
  - ✖ Multiple Projects
  - ✖ Multiple Instances
  - ✖ Filtered
- Mapping/Merging
  - ? Users
  - ✔ Custom fields
  - ✔ Issue Types, Status, Resolutions, ...
  - ✖ JQL Queries
  - ✖ Dashboards
  - ✖ Scripts
  - ✖ Remote Links
- Operations
  - ✖ Performance
  - ✔ Zero Downtime
  - ✖ Manual Labor
  - ✔ Costs





# Adaptavist Project Configurator

- First tool in the Market
- Uses Jira Java API and Jira Project Import
- Main use case: transfer configuration between environments
- Migrates
  - Issues
  - Dashboards
  - Boards
  - Jira Service Management
  - Filters
  - Some apps



# Adaptavist Project Configurator

- Data Type
  - ✔ Issue Content
  - ✔ Issue History and Dates
  - ✔ Project Configuration
  - ⚠ Global Configuration
  - ✖ User Settings
  - ✔ Shared Objects
  - ⚠ App Data
- Scope
  - ✔ Single Project
  - ✔ Multiple Projects
  - ⚠ Multiple Instances
  - ✔ Filtered
- Advanced Mapping/Merging
  - ⚠ Users
  - ⚠ Customfields
  - ✖ Issue Types, Status, Resolutions, ...
  - ⚠ JQL Queries
  - ✔ Dashboards
  - ⚠ Scripts
  - ✖ Remote Links
- Operations
  - ⚠ Performance
  - ✖ Zero Downtime
  - ⚠ Manual Labor
  - ⚠ Costs



# Botron Configuration Manager

- Very similar to Project Configurator
- + Global Configuration Snapshots
- + Power Admin
- Provides Apps SPI
  - Supports (some) more Apps
  - Needs support from App Vendor



# Botron Configuration Manager

- Data Type
  - ✔ Issue Content
  - ✔ Issue History and Dates
  - ✔ Project Configuration
  - ⚠ Global Configuration
  - ✖ User Settings
  - ✔ Shared Objects
  - ⚠ App Data
- Scope
  - ✔ Single Project
  - ✔ Multiple Projects
  - ⚠ Multiple Instances
  - ✔ Filtered
- Advanced Mapping/Merging
  - ⚠ Users
  - ⚠ Customfields
  - ✖ Issue Types, Status, Resolutions, ...
  - ⚠ JQL Queries
  - ✔ Dashboards
  - ✖ Scripts
  - ✖ Remote Links
- Operations
  - ⚠ Performance
  - ✖ Zero Downtime
  - ✖ Manual Labor
  - ⚠ Costs



# Jira Custom Scripts – API

- Java & REST API very extensive!
- Only small part “Public”/documented
  - But you got source code!
- No development support from Atlassian
- Access to App data hard
- Only for expert Atlassian developers!



# Jira Custom Scripts – API

- Data Type
  - ✔ Issue Content
  - ✔ Issue History and Dates
  - ✔ Project Configuration
  - ✔ Global Configuration
  - ✔ User Settings
  - ✔ Shared Objects
  - ✖ App Data
- Scope
  - ✔ Single Project
  - ✔ Multiple Projects
  - ✔ Multiple Instances
  - ✔ Filtered
- Advanced Mapping/Merging
  - ? Users
  - ? Customfields
  - ? Issue Types, Status, Resolutions, ...
  - ? JQL Queries
  - ? Dashboards
  - ? Scripts
  - ? Remote Links
- Operations
  - ✖ Performance
  - ✔ Zero Downtime
  - ✖ Manual Labor
  - ✖ Costs



# Jira Custom Scripts – SQL/XML

- XML file contains serialized database
  - XML == SQL
  - Complete access to all data!
- Warning: breaking stuff is easy!
  - No referential integrity
  - XML Import does few checks
  - No support from Atlassian
- Documentation does not exist
- String/replace on XML may work – but does not get encoded data
- Same version for Application and Apps needed
  - Data model different between versions



# Jira Custom Scripts – SQL/XML

- Data Type
  - ✔ Issue Content
  - ✔ Issue History and Dates
  - ✔ Project Configuration
  - ✔ Global Configuration
  - ✔ User Settings
  - ✔ Shared Objects
  - ✔ App Data
- Scope
  - ✔ Single Project
  - ✔ Multiple Projects
  - ✔ Multiple Instances
  - ✔ Filtered
- Advanced Mapping/Merging
  - ? Users
  - ? Customfields
  - ? Issue Types, Status, Resolutions, ...
  - ? JQL Queries
  - ? Dashboards
  - ? Scripts
  - ? Remote Links
- Operations
  - ⚠ Performance
  - Zero Downtime
  - Manual Labor
  - Costs







# ATLAS MERGE FOR JIRA

- Merge multiple instances at once
- Cross application merge (e.g. JQL in Confluence)
- Focus
  - Mapping & Merging of entities
  - Performance
  - Reproducibility
  - Single configuration file
- DIY only for simple setups
- Professional Services
  - Together with Partners
  - Or directly with us



# ATLAS MERGE

## FOR JIRA

- Data Type

- ✔ Issue Content
- ✔ Issue History and Dates
- ✔ Project Configuration
- ✔ Global Configuration
- ✔ User Settings
- ✔ Shared Objects
- ⚠ App Data

- Scope

- ✔ Single Project
- ✔ Multiple Projects
- ✔ Multiple Instances
- ✔ Filtered

- Mapping/Merging

- ✔ Users
- ✔ Customfields
- ✔ Issue Types, Status, Resolutions, ...
- ✔ JQL Queries
- ✔ Dashboards
- ✔ Scripts
- ✔ Remote Links

- Operations

- ✔ Performance
- ⊖ Zero Downtime
- ⚠ Manual Labor
- ⚠ Costs

# Tools & Methods - Jira Conclusion

- Know your Requirements!
- Is CSV import enough? Use it!
- Need few Projects and Project Configuration
  - Botron Configuration Manager
  - Adaptavist Project configurator
- Many Projects/instances, Advanced merging, Confluence Integration
  - AtlasMerge for Jira



# Tools & Methods - Confluence

## Conclusion

- General Recommendation
  - Know your Requirements!
  - Always Test!
- Migrate few Spaces
  - Space Import
- Repeatedly migrate Spaces
  - K15t
- Many Spaces, Advanced merging, Jira Integration
  - AtlasMerge for Jira



# Atlassian Cloud

- Best Strategy changes!
- 1:1 Migration, n:1 Migration, Low Requirements
  - Atlassian Cloud Migration Tool
- 1:1 Migration, High Requirements
  - Site Import
- n:1 Migration, High Requirements
  - Pre-merge offline (e.g. AtlasMerge or other tools)
  - Site Import



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