Making Backups Better

Presented By Matt Porritt

@MatthewPorritt
System Level Backups

• Backups Of Entire Moodle
  • Database
  • Sitedata
  • Code
• Primarily For Disaster Recovery
• Need To Rehearse Restores
Application Level Backups

• Backups Of Courses And Activities
• Prevention Of Data Loss
• Course Rollovers
Timed out while waiting for session lock.
Wait for your current requests to finish and try again later.
Synchronous Requests

- Backups And Restores Are Synchronous Operations
- Synchronous Workflows Are Bad For Long Running Processes
- User Waits While Synchronous Workflows Complete
Backup course: Maths101

Dashboard / My courses / Maths101 / Backup


0.18 secs - 91.87%
Make It Faster?

- Practical Limits For:
  - Timeouts
  - Server Resources
- Resources Alone Won’t Fix Big Courses
  - 190K Enrolled Students
  - Backups Files Over 10Gb
Asynchronous Backup & Restore

- Asynchronous (Background) Processing Of Backup And Restore In Moodle 3.7
- Better Large Course Handling
- No Need To Wait For Backups And Restores To Complete
Mathematics 101

Course Overview

Course Announcements
Student Guide

Addition

Does it add up

- Addition first steps
- Adding big numbers
- Addition shortcuts
- Addition Resources
- Topic Quiz

Let's see what you've learnt

Subtraction

The take away

- Starting with subtraction
- Taking one from the other
Backup course: Maths101

Backup settings

<table>
<thead>
<tr>
<th>Include enrolled users</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anonymize user information</td>
</tr>
<tr>
<td>Include user role assignments</td>
</tr>
<tr>
<td>Include activities and resources</td>
</tr>
<tr>
<td>Include blocks</td>
</tr>
<tr>
<td>Include filters</td>
</tr>
<tr>
<td>Include comments</td>
</tr>
<tr>
<td>Include badges</td>
</tr>
<tr>
<td>Include calendar events</td>
</tr>
<tr>
<td>Include user completion details</td>
</tr>
<tr>
<td>Include course logs</td>
</tr>
<tr>
<td>Include grade history</td>
</tr>
<tr>
<td>Include question bank</td>
</tr>
<tr>
<td>Include groups and groupings</td>
</tr>
</tbody>
</table>
## Backup course: Maths101

- **Initial settings**
- **Schema settings**
- **Confirmation and review**
- **Perform backup**
- **Complete**

### Include:

<table>
<thead>
<tr>
<th>Select</th>
<th></th>
<th>Select</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All / None (Show type options)</td>
<td></td>
<td>All / None</td>
</tr>
</tbody>
</table>

- Course Overview
- User data
- Course Announcements
- User data
- Student Guide
- Addition
- User data
- Addition first steps
- User data
- Adding big numbers
- User data
- Addition shortcuts
- User data
- Addition(1) Resources
<table>
<thead>
<tr>
<th>Component</th>
<th>User data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiplication</td>
<td>✓</td>
</tr>
<tr>
<td>Division</td>
<td>✓</td>
</tr>
<tr>
<td>Course Wrap Up</td>
<td>✓</td>
</tr>
</tbody>
</table>

There are required fields in this form marked 🔄.
Backup course: Maths101

Dashboard / My courses / Maths101 / Backup


The backup process is pending

You don't need to wait here, the process will continue in the background. You can check the progress at any time at the restore page.

Return to course
Mathematics 101

Course Overview

- Course Announcements
- Student Guide

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Backup course: Maths101

Dashboard / My courses / Maths101 / Backup

Backup already pending for this resource

Asynchronous backups only allow a user to have one pending backup for a resource at a time. Multiple asynchronous backups of the same resource can't be queued, as this would likely result in multiple backups with the same content.

Continue
Dear Admin User,

Your backup (ID: 95a8b931f877425039d7e7b4956c873af) has completed successfully!


Kind Regards,

Your Moodle Administrator.
Asynchronous backup/restore general settings

Enable message notifications

Default: No

When enabled users will receive a message when an asynchronous restore/backup completes

Subject

Moodle [operation] completed successfully

Default: Moodle [operation] completed successfully

Message subject

Dear [user_firstname] [user_lastname],

Your [operation] (ID: [backupid]) has completed successfully!

You can view it here [link].

Kind Regards,

Your Moodle Administrator.

Message

Default:

Dear [user_firstname] [user_lastname],

Your [operation] (ID: [backupid]) has completed successfully!

You can view it here [link].

Kind Regards,

Your Moodle Administrator.

Message to send when an asynchronous restore/backup completes

Save changes
Mathematics 101

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## Restore course

### Import a backup file

#### Files

- **Choose a file...**

You can drag and drop files here to add them.

**There are required fields in this form marked 1.**

### Course backup area

<table>
<thead>
<tr>
<th>Filename</th>
<th>Time</th>
<th>Size</th>
<th>Download</th>
<th>Restore</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>backup-moodle2-course-10-maths101-20190324-1613-an.mbz</td>
<td>Sunday, 24 March 2019, 4:13 PM</td>
<td>397.1MB</td>
<td>Download</td>
<td>Restore</td>
<td>✔️</td>
</tr>
<tr>
<td>backup-moodle2-course-10-maths101-20190324-1600-an.mbz</td>
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</tr>
</tbody>
</table>

### User private backup area

#### Manage backup files

#### Restores in progress

<table>
<thead>
<tr>
<th>Course</th>
<th>Time</th>
<th>Status</th>
</tr>
</thead>
</table>

[Image of Moodle Master Dev interface showing the restore course page with a selected backup file and options for import and restore.]
# Mathematics 101

**Dashboard / My courses / Maths101 / Restore**


## Restore settings

<table>
<thead>
<tr>
<th>Include enrolled users</th>
</tr>
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<tbody>
<tr>
<td>Include enrolment methods</td>
</tr>
<tr>
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<td>Include grade history</td>
</tr>
<tr>
<td>Include groups and groupings</td>
</tr>
<tr>
<td>Include competencies</td>
</tr>
<tr>
<td>Include custom fields</td>
</tr>
</tbody>
</table>

[Next]
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>aws-advanced-cloudformation-31-Demo-Parameter-Constraints-1080p</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>aws-advanced-cloudformation-30-Parameter-Constraints-1080p</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>aws-advanced-cloudformation-29-Demo-CloudFormation-Functions-P3-1080p</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>aws-advanced-cloudformation-28-Demo-CloudFormation-Functions-P2-1080p</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>aws-advanced-cloudformation-27-Demo-CloudFormation-Functions-P1-1080p</td>
<td>-</td>
<td>✓</td>
</tr>
</tbody>
</table>

You are logged in as Admin User (Log out)
Maths101
Data retention summary
Purge all caches
The restore process is pending

You don't need to wait here, the process will continue in the background.
You can check the progress at anytime at the restore page.

Return to course
## Import a backup file

### Files

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You can drag and drop files here to add them.

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## Manage backup files

### Restores in progress

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<thead>
<tr>
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<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics 101</td>
<td>Sunday, 24 March 2019, 4:37 PM</td>
<td>63.17%</td>
</tr>
</tbody>
</table>

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Moodle Docs for this page

You are logged in as Admin User (Log out)
Webservices

- New Asynchronous Webservices In Moodle 3.8 (Missed 3.7)
  - Backup
  - Restore
  - Duplicate
Asynchronous Backup & Restore

- Off By Default In Moodle 3.7
- Requires Cron
- Warning Only When Editing & Deleting Courses
- Only One Backup Per Course Per User At A Time
- Users Can Queue Backups of Multiple Courses At Once
- Backups Processed Concurrently
Links

• Asynchronous Backup and Restore
  • https://tracker.moodle.org/browse/MDL-28505
• Webservices
  • https://tracker.moodle.org/browse/MDL-64914
  • https://tracker.moodle.org/browse/MDL-64915
  • https://tracker.moodle.org/browse/MDL-64916