



UPGRADING OJS FROM 3.X TO 3.5

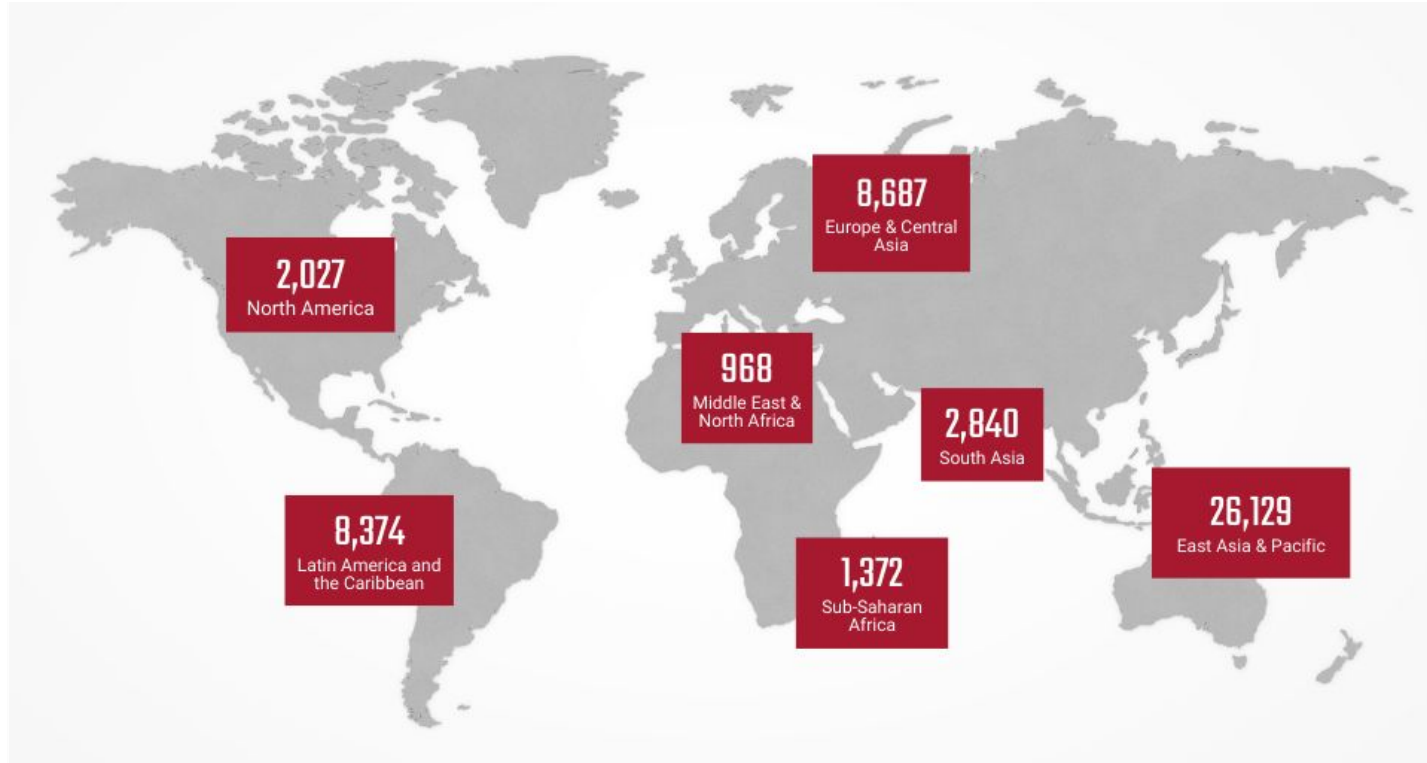
Motivations and guide

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THE JOURNALS' GEOGRAPHY



Map from 2023 extracted from <https://pkp.sfu.ca/software/ojs/usage-data/>

Numbers from 2023 extracted from <https://rpubs.com/saurabh90/ojs-stats-2023>, where active journals are journals which have published at least 5 articles on the year.

INSTALLATIONS

BY VERSION

Version	Released	End of Life	Installations
2.x	<= 2019	2021	1893 (4.08%)
3.0	2016	2022	294 (0.63%)
3.1	2017	2022	3.371 (7.28%)
3.2	2020	2023	3.319 (7.16%)
LTS 3.3	2020	2026	21.642 (46.74%)
3.4	2023	2025	14.486 (31.28%)
LTS (Pre-release) 3.5	2025	1 year after the next LTS	1.292 (2.79%)
TOTAL			46.297

Sources:

<https://doi.org/10.7910/DVN/OCZNVY>

<https://pkp.sfu.ca/2022/02/15/pkp-announces-long-term-support-lts-software-releases/>



MOTIVATIONS TO UPGRADE

SECURITY ISSUES

- Running outdated versions of OJS might leave your journal susceptible to disclosed vulnerabilities.
- After releasing a fix, the community will be warned through a mailing list, and will have around 2 weeks to upgrade before public disclosure.

COMPATIBILITY ISSUES

- As the software ages, it may lose compatibility with the environment of your hosting company, if they upgrade the operating system, PHP or database, you might be forced to follow suit.
- The more you delay the upgrade, the worse it gets.

NEW FEATURES & IMPROVEMENTS

- Newer versions of OJS are more functional, performatic, and come with improvements in accessibility, usability and documentation.
- On OJS 3.4 for example, jobs were introduced, and long operations are now executed in the background



DASHBOARD

20

My queue

BH

100

Active submissions

35

All in desk review stage

5

No editor assigned

25

All in peer review stage

5

No reviewers assigned

6

Awaiting reviews

4

Reviews submitted

5

Reviews overdue

5

Review invitations not accepted

5

Revisions submitted by author

10

All in copyediting stage

15

All in production stage

15

Scheduled for publication

75

Published

10

Declined in 2022

Active Submissions (100)

Filters

Export Table



Search submissions, ID, participants, keywords, etc.

ID	↑↓	SUBMISSIONS	STAGE	↑↓	ROUND	DAYS IN STAGE	↑↓	EDITORIAL ACTIVITY	
214		Barnes et al ; Lorem ipsum dolor sit amet: Ex...	Submission		-	5		ASSIGN EDITORS	View Summary
216		Eget et al ; Mi eget mauris pharetra et ultrices...	Review		1	2		ASSIGN REVIEWERS	View Summary
208		Kumiega ; Hydrologic Connectivity in the Edw...	Submission		-	20		Revisions submitted by author REVIEW REVISIONS	View Summary
224		Excepteur ; Duis aute irure dolor in repreh...	Submission		-	16		Revisions requested from author	View Summary
201		Tellus et al ; Scelerisque felis imperdiet proin f...	Review		2	14		21 17 24	View Summary
228		Potter ; Quam congue ut ipsum molestie...	Review		1	1		8 12 15 3	View Summary
207		Weasley et al ; Mauris at viverra dignissim non...	Copyediting		-	28		ASSIGN SECTION EDITOR	View Summary
211		Granger ; Faucibus maecenas eu in nulla...	Review		3	24		5 8 2	View Summary
222		Bokan et al ; Arcu turpis eget aliquam neque...	Review		1	8		2 7 10	View Summary
210		Wright ; Libero consectetur ipsum elit quis...	Production		-	5		--	View Summary
221		Smecher et al ; Sodales tortor mollis habitant...	Review		1	15		Revisions requested from author	View Summary
212		Bezsheiko ; Dapibus sodales mi viverra tellus...	Scheduled		-	25		To be published in issue no. 39	View Summary

Showing 1 to 12 of 100 submissions

[PREVIOUS](#) 1 2 3 4 5 6 7 8 [NEXT](#)



DASHBOARD

BH



20 My queue

100 Active submissions

35 All in desk review stage

5 No editor assigned

25 All in peer review stage

5 No reviewers assigned

6 Awaiting reviews

4 Reviews submitted

5 Reviews overdue

5 Review invitations not accepted

5 Revisions submitted by author

10 All in copyediting stage

15 All in production stage

15 Scheduled for publication

75 Published

10 Declined in 2022

Active

Filters

ID ↑↓

214

216

208

224

201

228

207

211

222

210

221

212

Showing

Submission

208

Kumeiga

Hydrologic connectivity between geographically isolated wetlands and surface water systems

[View Submission In Detail](#)

Last Activity

Revisions submitted by author on 03/30/2023

[View Activity Log](#)

Submission Files

These are the files that will be taken forward to the review stage in the workflow

[article-submission-final-version-proofread-v2.docx](#)

Article Text

[Full Sample 2020 Data Set - no filters.xls](#)

Article Manuscript

[Author competing interests disclosure.docx](#)

Data Set

Pre-review Discussion

★ EDITORIAL ASSIGNMENT 4 hours ago
Timstranack: I have updated the article text in the template provided by yo...

★ DESK REVIEW ASSIGNMENT 1 week ago
FredMerc: Pellentesque pellentesque, lacus at eleifend semper; est nun...

★ NOT ABLE TO EDIT SUBMISSION 11 days ago
Tayswift: Vestibulum vel nunc non dui feugiat aliquam sed non leo...

★ DOUBTS ABOUT REVIEW COMMENTS 15 days ago
DiyanGo: Buablia placerat lorem in quam auctor pellentesque. Se...

[Editorial decisions for the submission](#)[Send Submission For Review](#)[Accept And Skip Review](#)[Decline Submission](#)[Information about the submission](#)

Editors Assigned:

NW Nate Wright
Journal Manager

KS Kate Shuttleworth
Associate Editor

Days since submission:

20

Days in Submission Stage:

20

Issue No:

Not assigned

[Assign to issue](#)

Type:

Article

Abstract:

Nam id quam mollis, porta dui vel, accumsan sem. Sed commodo felis tristique justo pulvinar lacinia. Etiam pulvinar tortor et dui malesuada fringilla. Nullam leo risus, luctus ut sem ut, dignissim luctus quam. Nulla vel varius urna. Cras eget odio tellus. Proin eu nisi vehicula nulla iaculis lobortis.

Keyword:

Lorem ipsum, dolor sit amet, consectetur adipiscing elit, ut aliquam,

OUTDATED INTEGRATIONS

- Built-in integrations with external services might change and old integrations will stop working.

NEW PLUGINS & THEMES

- Once you upgrade, you'll probably have access to more 3rd-party plugins and themes. New products are unlikely to be developed or updated for unsupported OJS versions.

DOCUMENTATION & SUPPORT

- It's difficult to get help if nobody is using the same version as you. Newer PKP employees and OJS users have no experience with the old software.
- The documentation is limited when compared with the latest versions.

EASIER PLANNING

- With the introduction of the **LTS (Long-Term Support) release**, organizations which don't have the technical resources to upgrade their customizations on every new release can opt-in for a slower paced upgrade path.

AVAILABLE PATHS

- **Latest release:** Currently 3.5, then 3.6, 3.7, and so on... You'll have access to the newest features and updates, but non-LTS releases, have a shorter life span, typically 2 years, then you need to upgrade.
- **LTS (long term support) release:** The current LTS release (3.3) lived for 6 years, and will stop being supported one year after the new one is released (3.5).



PHP: Hypertext Preprocessor (or simply PHP) is a general-purpose programming language originally designed for web development.

Release	Released	Active Support	Security Support	Latest
8.4	9 months ago (21 Nov 2024)	Ends in 1 year and 4 months (31 Dec 2026)	Ends in 3 years (31 Dec 2028)	8.4.12 (28 Aug 2025)
8.3	1 year and 9 months ago (23 Nov 2023)	Ends in 4 months (31 Dec 2025)	Ends in 2 years and 4 months (31 Dec 2027)	8.3.25 (28 Aug 2025)
8.2	2 years and 8 months ago (08 Dec 2022)	Ended 8 months ago (31 Dec 2024)	Ends in 1 year and 4 months (31 Dec 2026)	8.2.29 (03 Jul 2025)
8.1	3 years and 9 months ago (25 Nov 2021)	Ended 1 year and 9 months ago (25 Nov 2023)	Ends in 4 months (31 Dec 2025)	8.1.33 (03 Jul 2025)
8.0	4 years and 9 months ago (26 Nov 2020)	Ended 2 years and 9 months ago (26 Nov 2022)	Ended 1 year and 9 months ago (26 Nov 2023)	8.0.30 (03 Aug 2023)
7.4	5 years and 9 months ago (28 Nov 2019)	Ended 3 years and 9 months ago (28 Nov 2021)	Ended 2 years and 9 months ago (28 Nov 2022)	7.4.33 (03 Nov 2022)

	Release	Released	Premier Support	Extended Support	Latest
	9.4	1 month and 2 weeks ago (09 Jul 2025)	Yes	Yes	9.4.0 (09 Jul 2025)
	9.3	5 months ago (31 Mar 2025)	Ended 1 month and 1 week ago (22 Jul 2025)	Ended 1 month and 1 week ago (22 Jul 2025)	9.3.0 (31 Mar 2025)
	9.2	8 months ago (15 Dec 2024)	Ended 4 months and 2 weeks ago (15 Apr 2025)	Ended 4 months and 2 weeks ago (15 Apr 2025)	9.2.0 (15 Dec 2024)
	9.1	11 months ago (24 Sep 2024)	Ended 7 months ago (21 Jan 2025)	Ended 7 months ago (21 Jan 2025)	9.1.0 (24 Sep 2024)
	9.0	1 year and 2 months ago (07 Jun 2024)	Ended 10 months ago (15 Oct 2024)	Ended 10 months ago (15 Oct 2024)	9.0.1 (12 Jul 2024)
	8.4 (LTS)	1 year and 4 months ago (10 Apr 2024)	Ends in 3 years and 8 months (30 Apr 2029)	Ends in 6 years (30 Apr 2032)	8.4.6 (09 Jul 2025)
	8.3	1 year and 8 months ago (14 Dec 2023)	Ended 1 year and 4 months ago (10 Apr 2024)	Ended 1 year and 4 months ago (10 Apr 2024)	8.3.0 (14 Dec 2023)
	8.2	1 year and 10 months ago (12 Oct 2023)	Ended 1 year and 8 months ago (14 Dec 2023)	Ended 1 year and 8 months ago (14 Dec 2023)	8.2.0 (12 Oct 2023)
	8.1	2 years ago (21 Jun 2023)	Ended 1 year and 10 months ago (25 Oct 2023)	Ended 1 year and 10 months ago (25 Oct 2023)	8.1.0 (21 Jun 2023)
	8.0 (LTS)	7 years ago (08 Apr 2018)	Ended 4 months ago (30 Apr 2025)	Ends in 8 months (30 Apr 2026)	8.0.43 (09 Jul 2025)



[PostgreSQL](#), also known as Postgres, is a free and open-source relational database management system (RDBMS) emphasizing extensibility and technical standards compliance.

Release	Released	Support Status	Latest
17	11 months ago (26 Sep 2024)	Ends in 4 years (08 Nov 2029)	17.6 (11 Aug 2025)
16	1 year and 11 months ago (14 Sep 2023)	Ends in 3 years (09 Nov 2028)	16.10 (11 Aug 2025)
15	2 years and 10 months ago (13 Oct 2022)	Ends in 2 years (11 Nov 2027)	15.14 (11 Aug 2025)
14	3 years and 11 months ago (30 Sep 2021)	Ends in 1 year and 2 months (12 Nov 2026)	14.19 (11 Aug 2025)
13	4 years and 11 months ago (24 Sep 2020)	Ends in 2 months and 2 weeks (13 Nov 2025)	13.22 (11 Aug 2025)
12	5 years and 11 months ago (03 Oct 2019)	Ended 9 months ago (21 Nov 2024)	12.22 (18 Nov 2024)

More work to do



PLANNING THE UPGRADE

CHOOSE THE NEW VERSION

- Review the workflow of the new version together with your team. The PKP test drive installation can be useful for that (OJS 3.3, 3.4, 3.5 available):
<https://pkp.sfu.ca/software/ojs/demo/>
- Ask your system administrator to provide a compatibility report (e.g. plugins/themes that might not be available in the new version), and estimate the time to update possible code/theme customizations which were done to the software.

CHOOSE THE NEW VERSION

- Once you've decided to proceed with the migration. The system administrator should create a sandbox/test installation, with the version that you're planning to use, where you'll be able to check if everything is going to work fine with your upgrade.

TRAINING

Take your time! Communicate with your team, and ensure everybody is completely familiarized with the new workflows and features.

There's plenty of training material available:

- PKP School: <https://pkpschool.sfu.ca>
- YouTube: <https://youtube.com/PublicKnowledgeProj>
- Documentation: <https://docs.pkp.sfu.ca>
- Forum: <https://forum.pkp.sfu.ca>

SCHEDULE THE UPGRADE

- Look for a good “upgrade window”. Basically a month and weekday where the journal has few editorial activity.
- While the system administrator is undertaking the upgrade, the system will not be functional. Therefore, it’s important to get a downtime estimate from the administrator and share it with your team.

UPGRADE PATH



Main issue: Code to upgrade older versions is intentionally removed sometimes.

From	To	Description
< 2.4.8-5	2.4.8-5	Latest OJS 2.4 release. Supports PHP 7 and MySQL <= 5.7.
2.4.8-5	3.2.1-5	Latest OJS 3.X release that can upgrade an OJS 2.X installation. Supports PHP 7 and MySQL >= 8.
< 3.3.0	3.3.0	It's needed before moving to 3.5
3.3.0	>=3.5.0	Decide if you want to use the latest or an LTS release (for now, 3.5 matches both!)

Source: <https://docs.pkp.sfu.ca/dev/upgrade-guide/en/#a-note-on-versions>

UPGRADE CHECKLIST

- ☐ Functional OJS installation.
- ☐ Functional database.
- ☐ Administrative access to the resources.
- ☐ Download OJS applications (all that apply), available here:
<https://pkp.sfu.ca/software/ojs/download/archive/>
 - ☐ 3.3.0: If your OJS version is older than that.
 - ☐ 3.5.0-X: If you want to follow the LTS release.
 - ☐ 3.5.0-X: If you want to use the latest release

UPGRADE CHECKLIST

- ❑ PHP 8.2: If you're planning to upgrade to OJS ≥ 3.3 (OJS 3.3 also works with PHP 7.3, 7.4, 8 and 8.1 in case you cannot move to 8.2)
- ❑ MySQL ≥ 5.7 : We recommend the latest LTS release (currently 8.4)
- ❑ PostgreSQL: If you're already using this database.
- ❑ **Backup of your database and your whole installation (web root, files and public folder).**
- ❑ DO NOT delete the backup after the upgrade succeeds. In case something wrong goes unnoticed, it will be possible to recover data.

UPGRADE CHECKLIST

- ❑ “Sandbox” environment, if possible in another server, very similar to the production. If not possible, you can use just a separated folder and database on the same server, but be careful with paths/credentials (also credentials inside plugins).
 - ❑ If the application has 3rd-party plugins take note of them, and check which ones are compatible with the final release that you’re going to use.
 - ❑ If you did customizations to the code, don’t forget to save a diff of them, so you can restore at the end.
- See <https://docs.pkp.sfu.ca/dev/release-notebooks/> for extra notes regarding breaking changes on the code.

UPGRADE RECIPE

We'll work on the sandbox environment from now on.

1. Restore the backup of the database and the application files.
The upgrade must run on a clean installation, so we'll need only the **config.inc.php** and the folders **public** and **files**.
2. **Disable the Acron plugin (or if you're running the automated tasks using CRON, comment the task) to avoid accidents like sending automated emails.**

```
UPDATE plugin_settings SET setting_value = '0' WHERE  
plugin_name = 'acronplugin' AND setting_name = 'enabled';
```
3. **Ensure the sandbox cannot send emails (disable the smtp or setup a bad email configuration).**

UPGRADE RECIPE

4. Delete the search index data to speed up the process with the commands.

```
TRUNCATE submission_search_objects;
```

```
TRUNCATE submission_search_object_keywords;
```

```
TRUNCATE submission_search_keyword_list;
```

UPGRADE RECIPE

5. **If you're just testing the upgrade**, you can also truncate the table metrics, notifications and notification_settings. They might be huge and removing them should decrease considerably the time to finish.

```
TRUNCATE metrics;
```

```
TRUNCATE notifications;
```

```
TRUNCATE notification_settings;
```


MYSQL SPECIFIC

6. Ensure the tables are using the engine **InnoDB**, it's a requirement! The query below will generate commands to update only the needed tables:

```
SELECT CONCAT('ALTER TABLE ', TABLE_NAME, '  
ENGINE=InnoDB;')  
FROM INFORMATION_SCHEMA.TABLES  
WHERE TABLE_SCHEMA = 'YOUR_DATABASE_NAME'  
AND ENGINE <> 'InnoDB';
```

MYSQL SPECIFIC

7. Ensure the database is using the UTF-8 character set, the queries that follow are using the charset **utf8** and the collation **utf8_general_ci**

If you're using MySQL ≥ 8 , then it's better to use **utf8mb4** and the collation **utf8mb4_0900_ai_ci**, it supports more characters! Here's a query to update the database:

```
ALTER DATABASE YOUR_DATABASE_NAME CHARACTER SET  
utf8 COLLATE utf8_general_ci;
```

MYSQL SPECIFIC

Here's a query that will generate queries to update only the needed tables, copy the outputted rows and run them:

```
SET @target_charset = 'utf8';
```

```
SET @target_collation = 'utf8_general_ci';
```

```
SELECT CONCAT('ALTER TABLE `', table_name, '` CONVERT TO  
CHARACTER SET ', @target_charset, ' COLLATE ', @target_collation,  
';')
```

```
FROM information_schema.tables
```

```
WHERE table_schema = 'YOUR_DATABASE_NAME' AND  
table_collation != @target_collation;
```

MYSQL SPECIFIC

Query to generate queries to update the needed fields (it will probably not output anything):

```
SET @target_charset = 'utf8';
```

```
SET @target_collation = 'utf8_general_ci';
```

```
SELECT CONCAT('ALTER TABLE `', t.table_name, ' MODIFY ',
```

```
c.column_name, ' ', c.column_type, ' CHARACTER SET ',
```

```
@target_charset, ' COLLATE ', @target_collation, ';') AS sql_statement
```

```
FROM information_schema.columns c
```

```
JOIN information_schema.tables t ON c.table_schema = t.table_schema
```

```
AND c.table_name = t.table_name
```

```
WHERE c.table_schema = 'YOUR_DATABASE_NAME' AND
```

```
c.collation_name != t.table_collation;
```

UPGRADE RECIPE

8. Extract the application files of the version which you're going to upgrade. It's ok to create a folder for each one and just update the config.inc.php to point to the same database and files/public directory, for example:

/home/user/ojs248

/home/user/ojs321

/home/user/ojs340

UPGRADE RECIPE

9. Run a **diff** (check differences) between the old **config.inc.php** and the new one, check which settings were added, removed or modified (the OJS documentation have such notes as well), and update them properly.
10. **Ensure the database credentials and the path for the files and the public folder on the config.inc.php are not pointing to the production ones.**
11. Run the upgrade `php -d memory_limit=-1 tools/upgrade.php`
`upgrade`

UPGRADE RECIPE

12. If the upgrade stops on a specific place, it's possible to retry from where it stopped by editing the file `dbscripts/xml/upgrade.xml`. Once all the problems are solved, re-run the upgrade with a clean database/upgrade.xml.
13. You should see the message "Successfully upgraded to version X.X.X.X", if not, check the output of the upgrade tool and the error log of PHP.
14. Check if there are failed post-upgrade jobs

PRODUCTION UPGRADE

1. To upgrade the production, setup a maintenance page with the HTTP status 500 (to instruct search engines, something is going on) and an explanation for the users.
2. Before shutting down the server, ensure the tasks finished their processing (the entries on the `scheduled_tasks` should be with a not very recent date, at least a couple of hours).
3. Leave the backup nearby
4. Execute the “upgrade recipe”

PRODUCTION UPGRADE

5. Recover the Acron/CRON tasks (not needed if you're using 3.5)

```
UPDATE plugin_settings SET setting_value = '1' WHERE  
plugin_name = 'acronplugin' AND setting_name = 'enabled'
```

5. Remove the maintenance page.
6. Store the backup for a couple of months. Better safe than sorry.
7. If you want to upgrade MySQL, generate a backup on the old version and restore it on the new version, then run the queries to update the charset.

PRODUCTION UPGRADE

8. If everything worked fine, restore the plugins/customizations.
9. Rebuild the search `php tools/rebuildSearchIndex.php`
10. Run manual tests (create a submission, access everything, publish, etc.). For local tests, executing `php -S 0.0.0.0:8080 -t .` (where 8080 can be any random port) on the main application folder starts a HTTP server at <http://127.0.0.1:8080>.

MAINTENANCE TIPS

- Subscribe to the PKP newsletters:
<https://lists.publicknowledgeproject.org/lists/>
- Docker/LXD might help you to isolate installations/software.
- Invest in good hardware/servers, especially on disk speed.
- Interesting plugins:
 - <https://github.com/pkp/lucene>
 - <https://github.com/ulsdevteam/pkp-formHoneypot>
 - <https://github.com/ulsdevteam/pkp-betterPassword>
 - <https://github.com/ulsdevteam/pkp-clamav>
 - <https://github.com/jonasraoni/mailSendFilter>
 - <https://github.com/jonasraoni/frontEndCache>
 - <https://github.com/jonasraoni/fullTextSearch>

MAINTENANCE TIPS

- Run database cleanups/index analyzers.
- Enable the recaptcha to fight against bots.
- Setup bot blockers (e.g. Cloudflare) or rate limiters on the HTTP server.
- Monitor if your email server is on a blacklist and setup the SPF, DMARC and DKIM for extra reliability. Alternatively use an external mail server.
- Setup monitors to watch the server load and if the site is responsive.
- Keep your OJS updated, especially if it's just a minor upgrade (when only the X change on the version: Y.Y.Y-X), since there are no breaking changes and basically no downtime.
- Install an antivirus and perhaps a [web application firewall](#)

SUPPORT

Please, do report any problem that you face during the upgrade at the forum.

<https://forum.pkp.sfu.ca/>

Here are some other links that might be useful

<https://docs.pkp.sfu.ca/upgrading-ojs-2-to-3/en/upgrade-planning>

<https://docs.pkp.sfu.ca/dev/upgrade-guide/en/>

<https://docs.pkp.sfu.ca/admin-guide/en/troubleshooting>

BONUS: OCS 2.X TO OJS 3.X

- OCS has been sunsetted a couple of years ago. If you've got an old OCS installation, we've got you covered! The tool below might be used to migrate the content into an OJS 3.X installation.

<https://github.com/jonasraoni/ocs-to-ojs>

- There's also a plugin to support the publication of conference proceedings for OJS $\geq 3.3.0$:

<https://github.com/withanage/conference>

<http://tiny.cc/upgrade-ojs>



THANKS!