TYPO3 CMS 8.4 – What's New

Summary of the new features, changes and improvements

Created by:

Patrick Lobacher and Michael Schams

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TYPO3 CMS 8.4 – What's New

Chapter Overview

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Introduction

The Facts

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Introduction

TYPO3 CMS 8.4 – The Facts

- Release date: 18 October 2016
- Release type: Sprint Release
- Slogan: Fueling
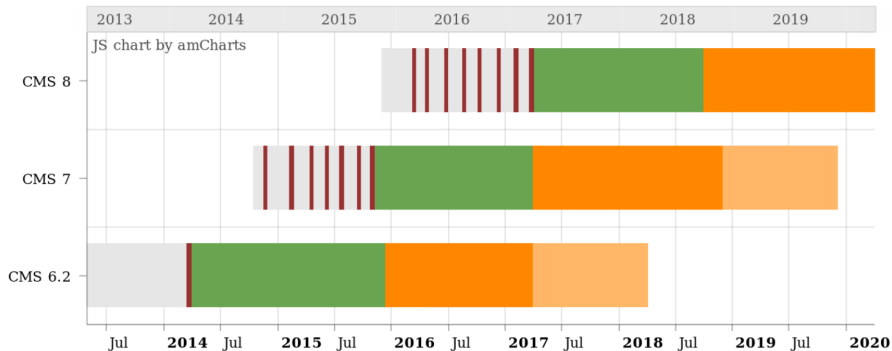
Introduction

System Requirements

- PHP: version 7
- MySQL: version 5.5 to 5.7
- Disk space: min 200 MB
- PHP settings:
    - `memory_limit` >= 128M
    - `max_execution_time` >= 240s
    - `max_input_vars` >= 1500
    - compilation option `--disable-ipv6` must <u>not</u> be used

- The backend requires Microsoft Internet Explorer 11 or later, Microsoft Edge, Google Chrome, Firefox, Safari or any other modern, compatible browser

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Development and Release Timeline

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Introduction

Release dates and their primary focus:

- v8.0   22/Mar/2016   Adding last minute things
- v8.1   03/May/2016   Cloud Integration
- v8.2   05/Jul/2016   Doctrine Prerequisites
- v8.3   30/Aug/2016   Rich Text Editor
- v8.4   18/Oct/2016   Doctrine Migration + Upgrades
- v8.5   20/Dec/2016   New RTE + Integrator Support
- v8.6   14/Feb/2017   *to be determined*
- v8.7   04/Apr/2017   LTS Preparation

https://typo3.org/typo3-cms/roadmap/

https://typo3.org/news/article/kicking-off-typo3-v8-development/

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Introduction

Installation

- Official *classic* installation procedure under Linux/Mac OS X (DocumentRoot for example /var/www/site/htdocs):

```
$ cd /var/www/site
$ wget --content-disposition get.typo3.org/8.4
$ tar xzf typo3_src-8.4.1.tar.gz
$ cd htdocs
$ ln -s ../typo3_src-8.4.1 typo3_src
$ ln -s typo3_src/index.php
$ ln -s typo3_src/typo3
$ touch FIRST_INSTALL
```

- Symbolic links under Microsoft Windows:
    - Use junction under Windows XP/2000
    - Use mklink under Windows Vista and Windows 7

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Introduction

- Upgrades only possible from TYPO3 CMS 7.6 LTS
- TYPO3 CMS < 7.6 LTS should be updated to TYPO3 CMS 7.6 LTS first

- Upgrade instructions:
  http://wiki.typo3.org/Upgrade#Upgrading_to_8.4
- Official TYPO3 guide "TYPO3 Installation and Upgrading":
  http://docs.typo3.org/typo3cms/InstallationGuide
- General approach:
    - Check minimum system requirements (PHP, MySQL, etc.)
    - Review **deprecation_*.log** in old TYPO3 instance
    - Update all extensions to the latest version
    - Deploy new sources and run Install Tool -> Upgrade Wizard
    - Review startup module for backend users (optionally)
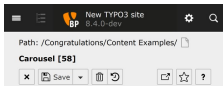
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Introduction

PHP Version 7

- PHP 7.0 is the minimum requirement for TYPO3 CMS 8.x
- TYPO3 will support subsequent PHP 7 releases as they come out
- This version raise gives a significant performance boost to the overall system
- Not only backend editors will notice a more fluent interface, but the new all-time record for a full cached page call in the frontend is below 7 milliseconds now, which is approximately 40% faster compared to running the very same website with PHP version 5.5
- We also started using new features from this PHP version, for instance the cryptographically secure pseudo-random generators are in active use already

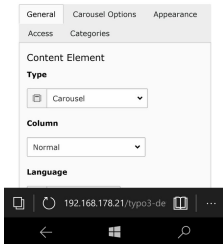# Chapter 1:

Backend User Interface

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Backend User Interface

The TYPO3 Backend is fully mobile responsive now.

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Backend User Interface

TYPO3 version upgrades made easy with the new **Upgrade Analysis** tool in the Install Tool (find/filter documented changes between versions).
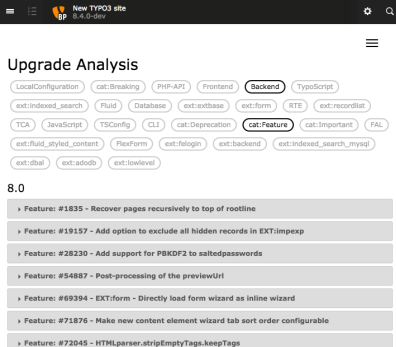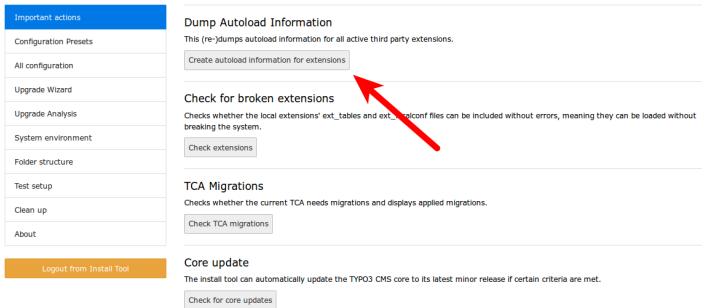
Backend User Interface

Install Tool: Dump Autoload Information

In order to re-generate class loading information, a new action has been added to the Install Tool to dump autoload information.

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Backend User Interface

TCA migration message(s) can be checked/listed in the Install Tool now.

Backend User Interface

To improve usability, sys_language records are sortable now.
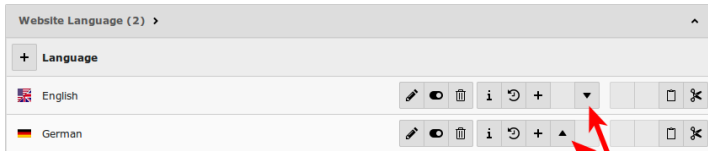
Backend User Interface

Table Listing Below Group Element

- The TCA configuration option `disable_controls` of type "group" has a new setting `allowedTables` now, which hides the hint about allowed tables to be referenced in the group field.

Chapter 2:

TSconfig & TypoScript

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TSconfig & TypoScript

TCA Option `showIfRTE`

- TCA setting `showIfRTE` for `type=check` has been removed from the TCA on all fields
- Availability of the Element Browser is configurable on a user-basis now
  To disable the button using TCA settings:

  ```
  [table_name]['columns'][field_name]['config']['appearance']['elementBrowserEnabled'] = false;
  ```

  To disable the button using pageTs settings:

  ```
  TCEFORM.table_name.field_name.config.appearance.elementBrowserEnabled = 0
  ```

  To disable the button using userTs settings:

  ```
  page.TCEFORM.table_name.field_name.config.appearance.elementBrowserEnabled = 0
  ```

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TSconfig & TypoScript

Access FlexForm Values

- It is now possible to access properties of a FlexForm field:

```
lib.flexformContent = CONTENT
lib.flexformContent {
  table = tt_content
  select {
    pidInList = this
  }

  renderObj = COA
  renderObj {
    10 = TEXT
    10 {
      data = flexform: pi_flexform:settings.categories
    }
  }
}
```

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Chapter 3:

In-Depth Changes

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In-Depth Changes

ExtJS Removal

- ExtJS component TYPO3.Viewport has been removed
- Ext.layout and Ext.Viewport are no longer used in the backend viewport
- Functionality has been re-implemented with a native JavaScript, jQuery, CSS solution
- ExtJS notifications components TYPO3.Window and TYPO3.Dialog have been removed
- Remaining parts/tasks of the complete ExtJS removal:
    - page tree
    - form extension drag'n drop functionality
    - ExtDirect functionality

In-Depth Changes

Doctrine DBAL

- Further progress has been made in migrating all database calls of the TYPO3 core to Doctrine DBAL
- Extbase's persistence is now also built completely on Doctrine DBAL's QueryBuilder
- `EXT:dbal` and `EXT:adodb` have been removed from the TYPO3 core
  If third party extensions use the old `TYPO3_DB` API to query non-MySQL database tables, these two extension can be installed from TER.
- `TYPO3_DB` shorthand functionality has been removed for most of the TYPO3 core PHP classes
  (using `$GLOBALS[TYPO3_DB]` is still possible but discouraged)

In-Depth Changes

TypeScript Support (1)

- **TypeScript** has been introduced to the TYPO3 core for the internal JavaScript handling
- TypeScript is a free and open source programming language developed and maintained by Microsoft
- It is a strict superset of JavaScript, which can compile JavaScript
- More details at: https://www.typescriptlang.org
- A grunt task compiles each TypeScript file (.ts) to a JavaScript file (.js) and produces an AMD module

Note: all AMD modules currently in TYPO3 CMS must be ported to TypeScript to ensure a future proof concept of JavaScript handling. The goal is to migrate all AMD modules to TypeScript before CMS 8 LTS is released.

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In-Depth Changes

TypeScript Support (2)

- The most important rules for TypeScript are defined in rulesets which are checked by the TypeScript Linter:
    - Always define types and return types, even if TypeScript provides a default type
    - Variable scoping: prefer `let` instead of `var`
    - Optional properties in interfaces are not allowed for the core
    - An interface will never extend a class
    - Iterables: ise `for (i of list)` instead of `for (i in list)`
    - Use keyword `implements`, even if TypeScript does not require it
    - Any class or interface must be declared with "export" to ensure re-use or export an instance of the object for existing code which can't be updated now.

    (not all rules can be checked by the Linter yet)

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In-Depth Changes

URL Parameters in Shortcuts

- Shortcuts take all URL parameters into account now.
- Example:
  - Page UID 2 is a shortcut to page UID 1
  - TypoScript configuration set: `config.linkVars = L`
- <u>Old</u> behaviour:
    ```
    http://example.com?id=2&L=1&customparam=X
    ```
  redirects to:
    ```
    http://example.com?id=1&L=1
    ```
- <u>New</u> behaviour:
    ```
    http://example.com?id=2&L=1&customparam=X
    ```
  redirects to:
    ```
    http://example.com?id=1&L=1&customparam=X
    ```

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In-Depth Changes

Fluidification

- HTML code has been migrated from PHP code to a Fluid template
- Affected methods:

  ```
  TypoScriptTemplateInformationModuleFunctionController
  ->tableRow()
  TypoScriptTemplateConstantEditorModuleFunctionController
  ->displayExample()
  ```

- Calling these methods results in a fatal error now

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In-Depth Changes

PageRenderer and Compressor

- PageRenderer and ResourceCompressor PHP classes now support the EXT: syntax for referencing JS and CSS files inside extension directories.

Previously:

```
$this->pageRenderer->addJsFile(
  ExtensionManagementUtility::extRelPath('myextension') .
  'Resources/Public/JavaScript/example.js'
);
```

Now possible:

```
$this->pageRenderer->addJsFile(
  'EXT:myextension/Resources/Public/JavaScript/example.js'
);
```

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In-Depth Changes

Miscellaneous (1)

- EXT:indexed_search_mysql merged into EXT:indexed_search
- Feature "subsearch" has been removed from EXT:indexed_search_mysql
  (TypoScript option `plugin.tx_indexedsearch.clearSearchBox` removed, too)
- Return type of `ContentObjectRenderer::exec_Query()` changed
  (return value is always `\Doctrine\DBAL\Driver\Statement` now)
- To make it clear that autoload information is not a cache, the files have
  been moved from `typo3temp/` to `typo3conf/`
  Note: TYPO3 deployments, which do not take advantage of composer, possibly need
  some adjustments to take the new location into account.

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Chapter 4:

Extbase & Fluid

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Extbase & Fluid

Doctrine DBAL

- Extbase's persistence uses Doctrine DBAL's QueryBuilder now
- This allows for **prepared statements** for all Extbase queries
- Backwards compatibility is still maintained

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Extbase & Fluid

ObjectAccess Cleanup (1)

- Various improvements of the `ObjectAccess` class, which results in a performance boost
- The following changes have been implemented:
    - More native PHP methods used where reasonable
    - Fewer method calls used where reasonable
    - Got rid of variables passed by reference
    - More cases return `null` rather than throw Exceptions
    - Fastest decisions and access methods come first
    - ...

Extbase & Fluid

- The following changes have been implemented (*continued*):
    - ...
    - Reflection-based access isolated to edge cases and access with the "force direct access" flag enabled
    - Sacrifices ability to read objects of types other than persisted objects contained in an ObjectStorage or subclass of ObjectStorage
    - Changes verdict from `false` to `true` when determining if a dynamically added property exists on an object

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Extbase & Fluid

RecordCollectionRepository::findByUid()

- Behaviour of `RecordCollectionRepository::findByUid()` has changed
- When TYPO3 is in FE mode, the method will now respect the configured *enable fields*
- Instead of returning an object that is supposed to be disabled, method returns `null` now

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Chapter 5:

Deprecated/Removed Functions

Deprecated/Removed Functions

Wizard Icons Removed

- The following icons have been removed from the FormFieldWizard:

    - `wizard_add.gif`
    - `wizard_edit.gif`
    - `wizard_link.gif`
    - `wizard_list.gif`
    - `wizard_rte.gif`
    - `wizard_table.gif`

✚	✎	✆	🗎	🗐	▦
wizard_add.gif	wizard_edit.gif	wizard_link.gif	wizard_list.gif	wizard_rte.gif	wizard_table.gif

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Deprecated/Removed Functions

Icons from `EXT:t3skin`

- Icons from `EXT:t3skin` have been removed or moved
- **Removed:**
    - typo3/sysext/t3skin/icons/gfx/error.png
    - typo3/sysext/t3skin/icons/gfx/i/_icon_ftp.gif
    - typo3/sysext/t3skin/icons/gfx/information.png
    - typo3/sysext/t3skin/icons/gfx/notice.png
    - typo3/sysext/t3skin/icons/gfx/warning.png

- **Moved:**
    - typo3/sysext/t3skin/icons/gfx/icon_fatalerror.gif
    - typo3/sysext/t3skin/images/icons/status/status-edit-read-only.png
    - typo3/sysext/t3skin/images/icons/status/warning-in-use.png
    - typo3/sysext/t3skin/images/icons/status/warning-lock.png
    - typo3/sysext/t3skin/images/icons/status/status-reference-hard.png
    - typo3/sysext/t3skin/images/icons/status/status-reference-soft.png

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Deprecated/Removed Functions

Page tree and click menu settings

- Obsolete page tree and click menu settings have been removed
- **Properties**:
    - `FileSystemNavigationFrameController->doHighlight`
    - `ClickMenu->leftIcons`
- **TypoScript settings**:
    - `options.pageTree.disableTitleHighlight`
    - `options.contextMenu.options.leftIcons`

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Deprecated/Removed Functions

ExtensionManagementUtility::extRelPath()

- Method `ExtensionManagementUtility::extRelPath()` has been marked as deprecated
- This method was used to resolve paths relative to the current script
- Alternatives methods are available:
    - `ExtensionManagementUtility::extPath()`
      (to resolve the full path of an extension)
    - `ExtensionManagementUtility::siteRelPath()`
      (to resolve the location of an extension relative to `PATH_site`
    - `GeneralUtility::getFileAbsFileName()`
      (to resolve a file/path prefixed with EXT:myextension
    - `PathUtility::getAbsoluteWebPath()`
      (to output a file location that is absolutely prefixed for the web folder)

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Deprecated/Removed Functions

Miscellaneous (1)

- Method `FormResultCompiler->JStop()` has been renamed to `addCssFiles()`. The old method name is still present as a deprecated alias, which will be removed in TYPO3 v9.
- Method `ClickMenu::DB_editPageProperties()` has been marked as deprecated
- The following arguments of method `RecyclerUtility::getRecordPath()` have been marked as deprecated:
  - `$clause`
  - `$titleLimit`
  - `$fullTitleLimit`

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Deprecated/Removed Functions

Miscellaneous (2)

- The following unused ExtJS JavaScript libraries have been removed:
    - `app.SearchField`
    - `grid.RowExpander`
    - `ux.FitToParent`

- RTEHtmlArea eID (`rtehtmlarea_spellchecker`) for using dynamic spellchecking has been removed and entry point for HTTP Requests `SpellCheckingController->main` marked as deprecated

- Format `DateTime::ISO8601` is incompatible with ISO-8601, but is left for backward compatibility reasons. The constant `DateTime::ATOM` or `DATE_ATOM` is used instead.

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Deprecated/Removed Functions

Miscellaneous (3)

- AMD module TYPO3/CMS/Core/QueryGenerator has been moved to EXT:lowlevel
  (and renamed to TYPO3/CMS/Lowlevel/QueryGenerator)
- Method PageLayoutView::getResult() has been marked as deprecated with the usage of mysqli_result objects as first parameter
- If TYPO3 is in non-composer mode, it used to automatically dump extension class loading information late during the bootstrap. This behavior is deprecated now.

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Chapter 6:

Sources and Authors

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Sources and Authors

Sources

TYPO3 News:

- http://typo3.org/news

Release Infos:

- http://wiki.typo3.org/TYPO3_CMS_8.4.0
- INSTALL.md and ChangeLog
- typo3/sysext/core/Documentation/Changelog/8.4/*

TYPO3 Bug-/Issuetracker:

- https://forge.typo3.org/projects/typo3cms-core

TYPO3 and Fluid Git Repositories:

- https://git.typo3.org/Packages/TYPO3.CMS.git
- https://github.com/TYPO3Fluid/Fluid

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Sources and Authors

TYPO3 CMS What's New Team:

Pierrick Caillon, Sergio Catala, Richard Haeser, Jigal van Hemert,
Patrick Lobacher, Michel Mix, Sinisa Mitrovic,
Nena Jelena Radovic, Michael Schams and Roberto Torresani

http://typo3.org/download/release-notes/whats-new

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