TYPO3 CMS 7.0 – What's New

Summary of the new features, changes and improvements

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TYPO3

TYPO3 CMS 7.0 – What's New

Chapter Overview

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Introduction

The Facts

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Introduction

- Release date: 2 December 2014
- Release type: "Sprint Release"
- Vision: Embrace, Innovate, Deliver
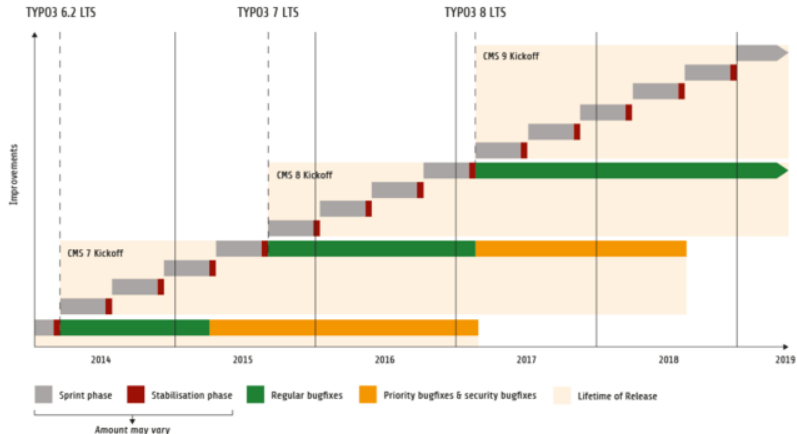- Primary focus: backend overhaul

Introduction

System Requirements

- PHP*:   v5.5.0 – v5.6.x
- MySQL: v5.5.x – v5.6.x (no strict mode)
- Disk space: min 200 MB
- PHP settings:
    - memory_limit >= 128M
    - max_execution_time >= 240s
    - compilation option `--disable-ipv6` must <u>not</u> be used
- Backend requires IE >= 9 or any other modern browser

*) Further details: PHP Minimum Requirements for TYPO3 CMS 7

Introduction

Development And Release Timeline

Introduction

Estimated release dates and their primary focus:

- v7.0 → 02/Dec/2014 Backend Overhaul Vol 1
- v7.1 → 17/Feb/2015 Core Cleanup & Streamlining
- v7.2 → 10/Mar/2015 Frontend
- v7.3 → 21/Apr/2015 Composer Ecosystem
- v7.4 → 09/Jun/2015 Backend Overhaul Vol 2
- v7.5 → 28/Jul/2015 *(to be determined...)*
- v7.6 → 13/Oct/2015 pre-LTS inferno
- v7.7 → xx/xxx/2015 **TYPO3 CMS 7 LTS** (Long Term Release)

https://typo3.org/typo3-cms/roadmap/
http://typo3.org/news/article/embrace-and-innovate-typo3-cms-7/

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Introduction

Installation

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

```
$ cd /var/www/site
$ wget --content-disposition get.typo3.org/7.0
$ tar xzf typo3_src-7.0.0.tar.gz
$ cd htdocs
$ ln -s ../typo3_src-7.0.0 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 mlink under Windows Vista and Windows 7

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Introduction

- Upgrades only possible from TYPO3 CMS 6.2 LTS
- TYPO3 CMS < 6.2 should be update to TYPO3 CMS 6.2 LTS first

- Upgrade instructions:
  http://wiki.typo3.org/Upgrade#Upgrading_to_7.0
- 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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Chapter 1:

Backend User Interface

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BackendUI

In General

- Significant visual changes of the backend user interface
- Based on Twitter Bootstrap version 3.2.x
- All icons have been recreated and are in "tile" style now
- Icons use Font Awesome version 4.2.x
- Function menu left-hand-side has been adjusted accordingly
- Icons in the function menu use flat design, colourful background, monochrome/inverted pictogram in the foreground, rounded corners
- Width of function menu can be reduced to show icons only

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BackendUI

Look & Feel
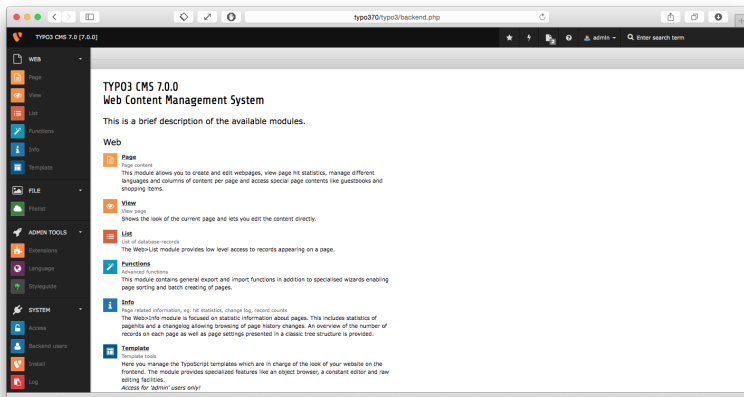
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BackendUI

Look & Feel
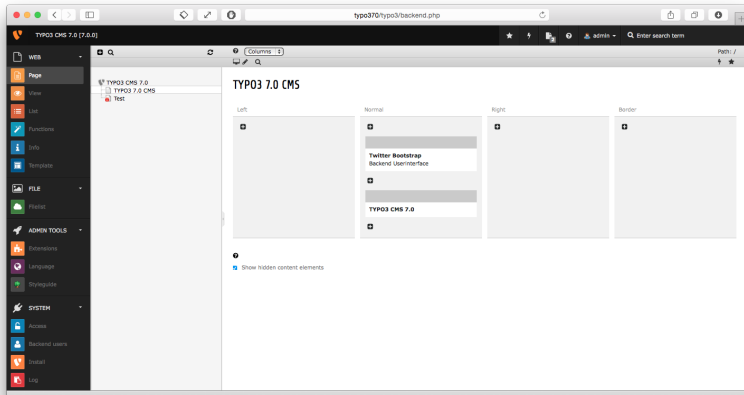
TYPO3
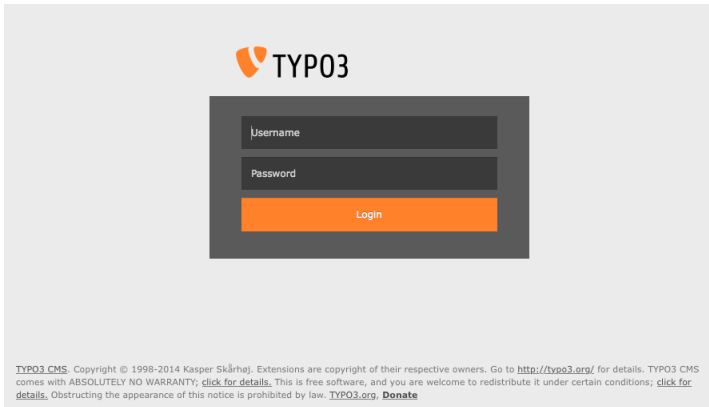
BackendUI

Look & Feel
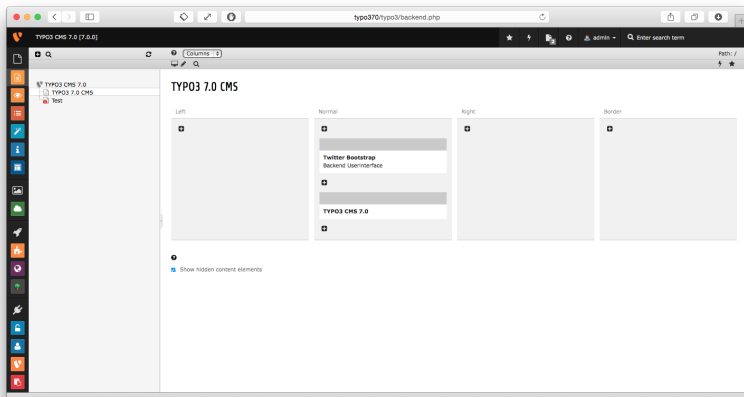
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BackendUI

Backend User Login

BackendUI

Top Bar (Module Menu)

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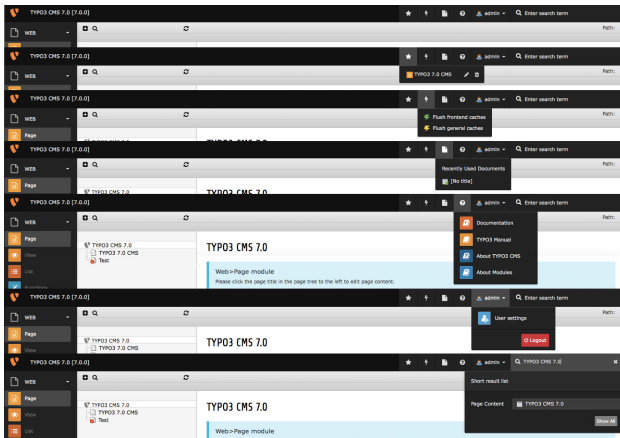
BackendUI

List Module and Clipboard

BackendUI

Table Style

Installed Extensions

Search: [_____]

Upd.	A/D	Extension	Version	Actions	State
		🟧 TYPO3 Core	7.0.0	⬇ 🗄	stable
	▬	Help>About	7.0.0	⬇	stable
	▬	📕 Help>About Modules	7.0.0	⬇	stable
		🟧 TYPO3 Backend	7.0.0	⬇	stable
	▬	📋 Tools>Log	7.0.0	⬇	stable
	▬	👤 Backend User Administration	7.0.0	⬇	beta
	▬	◎ Context Sensitive Help	7.0.0	⬇	stable
	▬	📘 Help>TYPO3 Manual	7.0.0	⬇	stable
	▬	📑 CSS styled content	7.0.0	⚙ ⬇	stable
	▬	📄 Documentation	7.0.0	⬇	stable

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BackendUI

Search in List and Page View

- Click on magnifying glass to show search bar in "list" and "page" view (search function was at the end of the page before)

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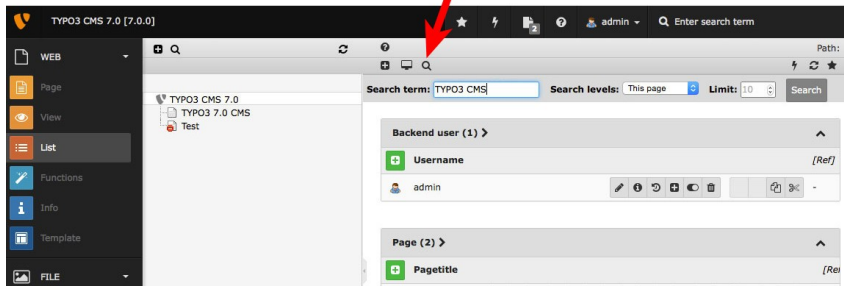
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Badge Shows Open Documents

- Number of open documents are shown as a Bootstrap "badge" (requires system extension "Open Documents")

BackendUI
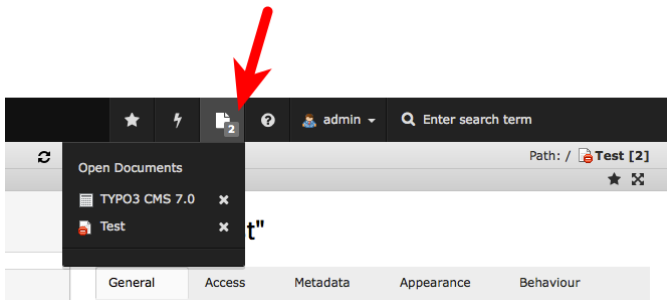
Flash Messages

- Visual appearance of Flash Messages has been updated
- Contrast of text vs box background colour improved

TYPO3 CMS < 7.0
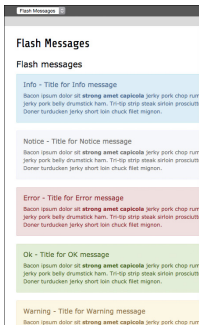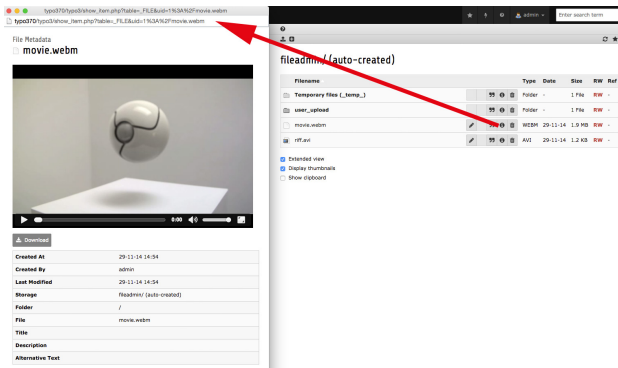
TYPO3 CMS >= 7.0
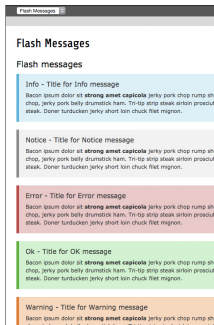
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BackendUI

Video Player in Info Window

- HTML5 audio and video files can be played in info window (where meta data is shown)

Chapter 2:

TSconfig & TypoScript

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TSconfig & TypoScript

TSConfig Available to Link Checkers

- TSconfig configuration is read
    - either from the backend (if Linkvalidator is used)
    - or from the scheduler task configuration
- Example: TSconfig, which can be read by Linkchecker:
    ```
    mod.linkvalidator.mychecker.myvar = 1
    ```
- TSconfig is then available as $this->tsConfig

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TSconfig & TypoScript

Linkcheck: Report Deleted Records

- In TYPO3 CMS < 7.0, linkhandler warned about links to non-existing or deleted records only
- Since TYPO3 CMS >= 7.0, the following TSconfig setting enables a warning, if links point to disabled records:
  ```
  mod.linkvalidator.linkhandler.reportHiddenRecords = 1
  ```

TSconfig & TypoScript

- Modern frameworks such as Twitter Bootstrap require multiple CSS classes per HTML tag
  For example: Alert

- Multiple CSS classes are now supported, which means, editors need to select one style only

```
RTE.classes.[ *classname* ] {
  .requires = list of CSS classes
}
```

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TSconfig & TypoScript

- It is now possible to configure CSS classes as "not-selectable"

```
// value "1" means, class is selectable
// value "0" makes it not-selectable
RTE.classes.[ *classname* ] {
  .selectable = 1
}
```

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TSconfig & TypoScript

- It is now possible to include multiple CSS files

```
RTE.default.contentCSS {
  file1 = fileadmin/rte_stylesheet1.css
  file2 = fileadmin/rte_stylesheet2.css
}
```

- Without defining any CSS stylesheet files the default is:
  typo3/sysext/rtehtmlarea/res/contentcss/default.css

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TSconfig & TypoScript

Exception Handling When cObjects Are Rendered (1)

- In TYPO3 CMS < 7.0, if an error occurred during the rendering process of content objects (e.g. USER), the error broke the whole frontend
- Since TYPO3 CMS >= 7.0, an exception handling has been implemented, which allows the display of a message instead of the failed cObject

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TSconfig & TypoScript

Exception Handling When cObjects Are Rendered (2)

```
# default exception handler (activated in context "production")
config.contentObjectExceptionHandler = 1

# configuration of a class for the exception handling
config.contentObjectExceptionHandler =
  TYPO3\CMS\Frontend\ContentObject\Exception\ProductionExceptionHandler

# customised error message (show random error code)
config.contentObjectExceptionHandler.errorMessage = Oops an error occurred. Code: %s

# configuration of exception codes, which are not dealt with
tt_content.login.20.exceptionHandler.ignoreCodes.10 = 1414512813

# deactivation of exception handling for a specific plugins or content objects
tt_content.login.20.exceptionHandler = 0

# ignoreCodes and errorMessage can be configured globally...
config.contentObjectExceptionHandler.errorMessage = Oops an error occurred. Code: %s
config.contentObjectExceptionHandler.ignoreCodes.10 = 1414512813

# ...or locally for individual content objects
tt_content.login.20.exceptionHandler.errorMessage = Oops an error occurred. Code: %s
tt_content.login.20.exceptionHandler.ignoreCodes.10 = 1414512813
```

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Chapter 3:

In-Depth Changes

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In-Depth Changes

Integration of jQuery UI version 1.11.2

- jQuery UI 1.11 supports AMD (Asynchronous Module Definition), which loads JavaScript files only, when they are needed (performance boost)
- jQuery UI 1.11 replaces jQuery UI 1.10 + Scriptaculous in TYPO3 CMS 7.0
- Only core and interaction components are included, which are required to replace ExtJS und Scriptaculous
- Widgets are not included (but those of Twitter Bootstrap are used, such as: DatePicker, Spinner, Dialog, Buttons, Tabs, Tooltip)

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In-Depth Changes

Registry for File Rendering Classes

- In order to be able to render all kinds of media files, a file rendering registry has been implemented.
  This happens as follows (e.g. Video, MPEG, AVI, WAV, etc.):

```php
<?php
namespace ...;

class NameTagRenderer implements FileRendererInterface {
  protected $possibleMimeTypes = array('audio/mpeg', 'audio/wav', ...);
  public function getPriority() {
    return 1; // priority: the higher, the more important (max: 100)
  }
  public function canRender(FileInterface $file) {
    return in_array($file->getMimeType(), $this->possibleMimeTypes, TRUE);
  }
  public function render(FileInterface $file, $width, $height, array $options = array(),
        $usedPathsRelativeToCurrentScript = FALSE) {
    ...

    return 'HTML code';
  }
}
```

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In-Depth Changes

TCA: Validate Email Addresses

- New function "email" checks, if value entered is a valid email address
- If check fails, a Flash message appears
- Example:

```
'emailaddress' => array(
  'exclude' => 1,
  'label' => 'LLL:EXT:myextension/Resources/Private/Language/locallang_db.xlf:tx_myextension
    'config' => array(
      'type' => 'input',
      'size' => 30,
      'eval' => 'email,trim'
  ),
)
```

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In-Depth Changes

AbstractCondition For Custom TypoScript Conditions

- Custom TypoScript conditions can be derived from an AbstractCondition

```
class TestCondition
  extends \TYPO3\CMS\Core\Configuration\TypoScript\ConditionMatching\AbstractCondition {

  public function matchCondition(array $conditionParameters) {
      if ($conditionParameters[0] === '= 7' && $conditionParameters[1] === '!= 6') {
      throw new TestConditionException('All Ok', 1411581139);
    }
  }
}
```

- The appropriate TypoScript code as follows:

```
[Vendor\Package\TestCondition]
[Vendor\Package\TestCondition = 7]
[Vendor\Package\TestCondition = 7, != 6]
```

- Operators, which should be available, are defined in the class

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In-Depth Changes

Signal for IconUtility HTML Tag Manipulation

- New signal to manipulate the IconUtility HTML tag for sprite icons:

```
dispatch(
  'TYPO3\\CMS\\Backend\\Utility\\IconUtility',
  'buildSpriteHtmlIconTag',
  array($tagAttributes, $innerHtml, $tagName)
);
```

- Method call:

  TYPO3\CMS\Backend\Utility\IconUtility\buildSpriteHtmlIconTag

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In-Depth Changes

Signal Slots to SoftReferenceIndex

- Two new signal slot dispatch calls in SoftReferenceIndex:

```
protected function emitGetTypoLinkParts(
  $linkHandlerFound, $finalTagParts, $linkHandlerKeyword, $linkHandlerValue) {
  return $this->getSignalSlotDispatcher()->dispatch(
    get_class($this),
    'getTypoLinkParts',
    array($linkHandlerFound, $finalTagParts, $linkHandlerKeyword, $linkHandlerValue)
  );
}
protected function emitSetTypoLinkPartsElement(
  $linkHandlerFound, $tLP, $content, $elements, $idx, $tokenID) {
  return $this->getSignalSlotDispatcher()->dispatch(
    get_class($this),
    'setTypoLinkPartsElement',
    array($linkHandlerFound, $tLP, $content, $elements, $idx, $tokenID, $this)
  );
}
```

- Called in:

```
TYPO3\CMS\Core\Database\SoftReferenceIndex->findRef_typolink
TYPO3\CMS\Core\Database\SoftReferenceIndex->getTypoLinkParts
```

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In-Depth Changes

afterPersistObjetct Signal Slot

- New afterPersistObject signal slot emits for the aggregate root after persisting all other objects

```
protected function emitAfterPersistObjectSignal(DomainObjectInterface $object) {
  $this->signalSlotDispatcher->dispatch(__CLASS__, 'afterPersistObject', array($object));
}
```

- Called in:

    TYPO3\CMS\Extbase\Persistence\Generic\Backend->persistObject

- The same signal is emitted in the persistObject method in the AbstractBackend class in Flow

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In-Depth Changes

Signal in loadBaseTca

- To improve performance in the backend context, the complete TCA can be cached now (not only parts of it)

```
protected function emitTcaIsBeingBuiltSignal(array $tca) {
  list($tca) = static::getSignalSlotDispatcher()->dispatch(
    __CLASS__,
    'tcaIsBeingBuilt',
    array($tca)
  );
  $GLOBALS['TCA'] = $tca;
}
```

- Called in:

  TYPO3\CMS\Core\Utility\ExtensionManagementUtility\Backend->buildBaseTcaFromSingleFiles

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In-Depth Changes

API to Add Cached TCA Changes

- PHP files in `extkey/Configuration/TCA/Overrides/` are executed directly after the TCA cache has been built
- These files may only include code, which manipulates the TCA, such as: `addTCAColumns` or `addToAllTCATypes`
- This feature gives backend requests a performance boost, once extensions start using these files

In-Depth Changes

Read-only File Mounts

- File mounts can be configured as "read only" (again)
- This was already possible in TYPO3 CMS 4.x, but silently dropped in 6.x
- Example: add folder "test" of storage UID 3 as a read-only mount in the File List and Element Browser.

  ```
  options.folderTree.altElementBrowserMountPoints = 3:/test
  ```

  If no storage is configured, it is assumed that the folder is in the default storage.

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In-Depth Changes

Miscellaneous

- jQuery has been updated from version 1.11.0 to version 1.11.1
- Datatables has been updated from version 1.9.4 to version 1.10.2
- Some old, unused variables have been removed from `EM_CONF`
- Extension icons can be in SVG image format now (`ext_icon.svg`)
- Passing a wrong eID identifier results in an exception now

Chapter 4:

Extbase & Fluid

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Extbase & Fluid

Template Path Fallback

- Fluid Standalone View as well as the TypoScript objekt FLUIDTEMPLATE suppport template fallback paths now

```
page.10 = FLUIDTEMPLATE
page.10.file = EXT:myextension/Resources/Private/Templates/Main.html
page.10.partialRootPaths {
  10 = EXT:myextension/Resources/Private/Partials
  20 = EXT:fallback/Resources/Private/Partials
}
```

- If new and old option is used (e.g. partialRootPaths and partialRootPath), the path stated by the option is at the first position (index = 0)

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Extbase & Fluid

Typolink ViewHelper

- A new Typolink ViewHelper can parse and analyse the `typolink` string, created by the Link-Wizard and RTE

```
<f:link.typolink parameter="{link}" target="_blank" class="ico-class" title="some title"
    additionalAttributes="{type:'button'}">
```

`link` could contain:

```
42 _blank - "This is the link title" &foo=bar
```

Output:

```
<a href="index.php?id=42&foo=bar" title="This is the title" target="_blank" class="ico-class"
    type="button">
```

Note: only `parameter` is required, rest is optional

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Extbase & Fluid

- All ViewHelpers, which output HTML tags, support the HTML5 data-* attribute now
- An array passed as data is transformed and the key/value pair builds the attribute: data-key="value"

Example:

```
<f:form.textfield data="{foo: 'bar', baz: 'foos'}" />
```

Output:

```
<input data-foo="bar" data-baz="foos" ... />
```

Extbase & Fluid

Class Tag Values Via Reflection

- Extbase Reflection Service can return tags and annotations which have been added to a class

Example:
```
/**
 * @SomeClassAnnotation A value
 */
class MyClass {
}
```

Annotation can be accessed by:
```
$service = new \TYPO3\CMS\Extbase\Reflection\ReflectionService();

// Returns all tags and their values the specified class is tagged with
$classValues = $service->getClassTagsValues('MyClass');

// Returns the values of the specified class tag
$classValue = $service->getClassTagValue('MyClass', 'SomeClassAnnotation');
```

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Chapter 5:

Deprecated/Removed Functions

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Deprecated/Removed Functions

Compatibility Layer

- TYPO3 CMS 6.2: a compatiblity layer makes sure, old extensions work in the new codebase
  Drawback: decreased performance (not the full potential of the system)
- TYPO3 CMS 7.0: compatibility layer has been removed from the core
  Impact: old extensions possibly break (e.g. extensions without namespaces)
- Compatibility can be re-inforced by installing system extension
  EXT:compatibility6 if required
- This extension will be moved to TER at one point in the future

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Deprecated/Removed Functions

Backend User Management

- Switch to backend user ("change-to mode") has been removed

TYPO3 CMS 6.2

TYPO3 CMS 7.0

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Deprecated/Removed Functions

Removed Deprecated JavaScript Functions

- In accordance with the deprecation strategy, a number of JavaScript methods, classified as *deprecated* since TYPO3 CMS 4.7, have been removed, for example:

  ```
  \TYPO3\CMS\Backend\Form\FormEngine->getSingleField_typeInput
  \TYPO3\CMS\Backend\Form\FormEngine->getSingleField_typeText
  \TYPO3\CMS\Core\Utility\GeneralUtility->quoted_printable
  \TYPO3\CMS\Core\Utility\GeneralUtility->encodeHeader
  ```

  `HTMLArea.Editor.forceRedraw`
  (use `HTMLArea.Framework.doLayout` instead)

  `HTMLArea.Editor.convertNode`
  (use `HTMLArea.DOM.convertNode` instead)

  `HTMLArea.Editor.getBlockAncestors`
  (use `HTMLArea.DOM.getBlockAncestors` instead)

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Deprecated/Removed Functions

Removed Functions (1)

- TypoScript setting `config.uniqueLinkVars` has been removed
  (this behaviour is the default now)
- ViewHelper `\TYPO3\CMS\Documentation\ViewHelpers\Link\Action`
  has been removed (use `f:be.buttons.icon` or `f:uri.*` instead)
- PageTSconfig option `mod.web_list.alternateBgColors`
  has been removed
- PropertyMapper has been removed
  (including option `rewrittenPropertyMapper = 0`)
- TypoScript conditions have been removed:
    - `browser`
    - `version`
    - `system`
    - `useragent`

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Deprecated/Removed Functions

Removed Methods (1)

The following **methods** have been removed:

- connectDB
  of class \TYPO3\CMS\Frontend\Utility\EidUtility

- isDisplayCondition
  of class \TYPO3\CMS\Form\FormEngine

- int_from_ver
  of class \TYPO3\CMS\Core\Utility\GeneralUtility

- getUniqueFields
  of class \TYPO3\CMS\Core\DataHandling\DataHandler

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Deprecated/Removed Functions

The following **methods** have been removed:

- isSafeModeEnabled
  of class \TYPO3\CMS\Core\Utility\PhpOptionsUtility

- registerSwiftMailer
  of class \TYPO3\CMS\Core\Bootstrap

- loadTCA
  of class \TYPO3\CMS\Core\Utility\GeneralUtility

- isLocalconfWritable
  of class \TYPO3\CMS\Core\Utility\ExtensionManagementUtility

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Deprecated/Removed Functions

Removed Classes

The following **classes** have been removed:

- \TYPO3\CMS\Backend\Template\MediumDocumentTemplate
- \TYPO3\CMS\Extbase\Service\TypeHandlingService

Chapter 6:

Sources and Authors

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Sources and Authors

Sources (1)

TYPO3 News:

- http://typo3.org/news

Release Infos:

- http://wiki.typo3.org/TYPO3_CMS_7.0.0
- INSTALL.md and ChangeLog

TYPO3 Bug–/Issuetracker:

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

TYPO3 Git Repositories:

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

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Sources and Authors

Sources (2)

Various Articles and Resources:

- Roadmap
  https://typo3.org/typo3-cms/roadmap/
- Release Strategy and Blueprint
  http://typo3.org/news/article/embrace-and-innovate-typo3-cms-7/
  http://wiki.typo3.org/Blueprints/Release
- Compatibility
  Retaining Compatibility to TYPO3 CMS 6
  PHP Minimum Requirements for TYPO3 CMS 7
- Release Announcement
  The TYPO3 Community Publishes TYPO3 CMS 7.0

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Sources and Authors

TYPO3 CMS What's New Slides:

Patrick Lobacher
(Research, Information Gathering and German Version)

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

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