



# FirstSpirit™

*Unlock Your Content*

## FirstSpirit™ Release Notes

### FirstSpirit™ Version 5.2 Release 20

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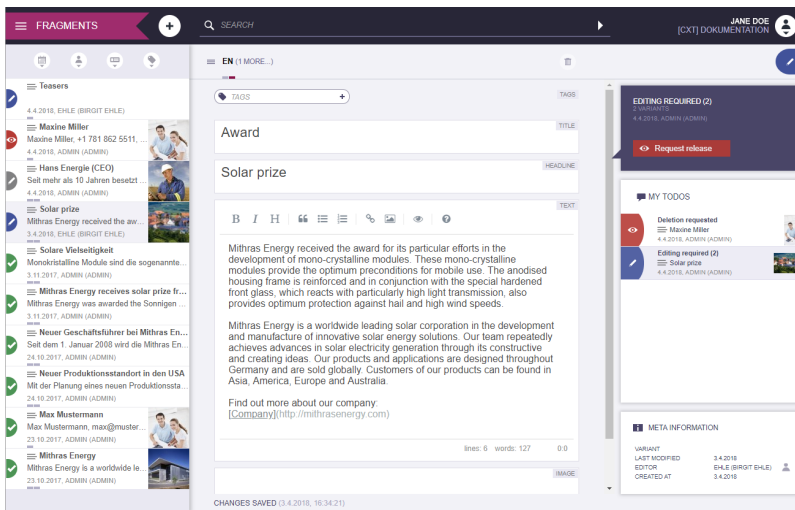


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## 1 FirstSpirit Content Experience Tools (Start of EAP phase)

The “Early Access Program (EAP)” phase for FragmentCreator starts with the release of the current FirstSpirit version.



### What is FragmentCreator?

FragmentCreator is the first e-Spirit “Content Experience Tools (CXT) client” which is designed from the ground up to meet the specific requirements of content creation and distribution. From an editorial point of view, FragmentCreator is a web application that is perfectly adapted for the creation and editing of format-neutral fragments.

### Which problems can be solved by the FragmentCreator?

SiteArchitect and ContentCreator are designed for editing content so that it fits a particular context and publishing that content from FirstSpirit into previously defined channels (push strategy), e.g., a website (desktop or mobile).

In new concepts, such as FirstSpirit CaaS (Content-as-a-Service), content is stored in format-neutral fragments so that it can be easily accessed by any front end via a universal interface (pull strategy). By employing this strategy, the content’s reach expands to all digital platforms, devices, and distribution channels that can be accessed via an interface. The ultimate aim of this is the furthest possible distribution of content.



## What are fragments?

Fragments are small, self-contained units of content, such as a product description, a press release, contact details, etc.. Media can also be used in a fragment.

Because they are all self-contained, fragments can be created, managed, tagged, and published (e.g., using FirstSpirit CaaS) independently of any context. Once created, these fragments can be used in a wide range of scenarios.

## Fragments and variants – what’s the difference?

The CXT concept is based on the assumption that variants of fragments are required in many applications. This means that the content or message is identical, but the form is different. For example, variants of a fragment can differ in terms of scope, level of detail, or language (simple vs. complex).

So by using variants, content can be created for publication or release for various audiences, different output devices, a range of campaign durations, etc. The content variant for a mobile output device, for example, will tend to be shorter and more compact than that for a desktop computer.

Variants can be edited and released independently of one another.

### Examples of variants:

- Language-dependent content, e.g., written in “German” and “English”
- Information used in learning materials for different levels, e.g., “beginner” and “advanced”
- Different forms of marketing content, e.g., for A/B testing
- Different scopes for different output devices

## Do I need a license for FragmentCreator?

For partners, FragmentCreator does not require a license. Customers will also not need one as long as they have licensed FirstSpirit CaaS.

## Information on the EAP phase:



In the EAP phase, the FragmentCreator is to be tested in real customer scenarios. Where are the opportunities for optimization? Which functionalities are still required? Where do problems occur?

The FragmentCreator probably does not yet meet your usual requirements for stability and reliability. For this reason, participants in the EAP phase are supported by e-Spirit staff during commissioning and will receive help quickly whenever any questions or problems arise.

FragmentCreator, the CXT platform, and the related documentation will be augmented and extended during the EAP phase.

Please do not hesitate to contact us if you have a suitable use case! Please contact Technical Support (for partners) or your account manager (for customers).

## 2 Use of Oracle Java 9 and 10

As of FirstSpirit version 5.2R20, Oracle Java 9 is officially approved for use with FirstSpirit. All problems in the use of FirstSpirit with Java 9 which could thus far be identified could be successfully corrected by e-Spirit.

However, on a technical level, the difference between Java 8 and Java 9+ is quite large (e.g. related to memory management) such that an update of existing FirstSpirit installations to Java 9 presents several challenges, e.g. related to RAM requirements and GC parameters. Thus, e-Spirit emphatically recommends that a Java update from Java 8 to 9+ is initially done on test or QA systems in order to obtain experience with any given concrete usage scenario. Problems and errors which arise from the use of Java 9+ should in all cases be forwarded to e-Spirit in a timely manner.

For all production systems, e-Spirit recommends use of Oracle Java 8 for the time being. Here, it is important to note, however, that Oracle plans to cease support for Java 8 in early 2019 such that planning/evaluation of a migration to Java 9+ will become necessary in the foreseeable future in any case.

The first released version of Oracle Java 10 has meanwhile been published (20-Mar-2018). e-Spirit has already tested this version and has made the necessary adjustments in FirstSpirit in FirstSpirit version 5.2R20. However, there is still little practical experience concerning the operation, and the internal tests and quality assurance activities are still ongoing. Nevertheless, Java 10 receives the status “EAP” (early access program) already with FirstSpirit version 5.2R20. This means, that FirstSpirit (server as well as clients) can be operated with Java 10, but should first be used only with testing and QA environments,



and not at all in productive environments. The restrictions known relating to the use of Java 9 apply also to Java 10.

FirstSpirit support for Oracle Java 11 is planned from the third quarter of 2018 onwards. This version is the next LTS version from Oracle and publication is scheduled for September 2018. Currently, FirstSpirit is not yet functional when used with Oracle Java 11.

Java 8 will be supported by FirstSpirit up to the end of Oracle public support (at least January 2019).

## Restrictions

The following technical restrictions are currently known relating to the use of Oracle Java 9 (and higher where applicable) that cannot be bypassed by programming:

- Oracle does not offer Java 9 and higher in more than one 32 bit variant, i.e. when using Oracle Java 9 and higher, FirstSpirit can now only be run on 64 bit platforms or with 64 bit applications.
- Due to advanced security checks in Java 9 and higher, delays arise, in particular on launching on the client side and when first running functionalities that have been loaded afterwards.
- The Oracle Java Runtime Environment (JRE) that is required to launch the FirstSpirit SiteArchitect, is potentially not compatible between versions 8 and 9+. In Windows, the FirstSpirit Launcher permits a simpler change back to Java 8.
- Some functions in FirstSpirit are based on third-party software. Not all vendors of third-party software have converted it in order to ensure compatibility with Java 9 and higher. Consequently, functions that are based on third-party software of this kind will not be available if FirstSpirit is being operated with Oracle Java 9+. Operating system-specific third party applications in the AppCenter of the FirstSpirit SiteArchitect will no longer be supported from Oracle Java 9 (exception: the browser integration).

## Installation / Upgrade from Java 8

Using **existing FirstSpirit installations** with Java 9 and higher will require slight changes to configuration files in the file system.

1. First, perform an inplace upgrade of the desired FirstSpirit server (for non-Windows systems see *FirstSpirit Installation instruction*, Chapter “Via a tar archive”, for Windows systems see Chapter “Updating via the installation program”). In this way, the start script will be updated automatically (`fs5` for Linux, `fs5.cmd` for Windows).





2. Replace the file `fs-wrapper.conf` (or for servers running in “Isolated mode” the file `fs-wrapper.isolated.conf`) in the FirstSpirit subdirectory `~\conf` by the content of the file `fs-wrapper.conf.default.txt` (or by the content of the file `fs-wrapper.isolated.conf.default.txt`) in the subdirectory `~\conf\conf-all` and adopt individual changes which you have made in the file `fs-wrapper.conf`.

If you would like to use FirstSpirit with Java 9 or higher as Windows service, please change the line

```
#include.required ../conf/fs-wrapper-j1.include.conf
```

in the file `fs-wrapper.conf` or `fs-wrapper.isolated.conf` to

```
#include.required ../conf/fs-wrapper-j2.include.conf
```

**New installations** do not require a change of the above mentioned files.

### Installation under Microsoft Windows

For installation under Windows, please install first a FirstSpirit server with Java 8 as described in the *FirstSpirit Installation instruction*, Chapter “Installation under Windows”. Under Oracle Java 9 and higher, FirstSpirit can not be installed using the Windows installation program `firstspirit-setup-<version number>.exe` or `firstspirit-isolated-setup-<version number>.exe`.

Then the path to the desired Java version (the parameter `wrapper.java.command`) must be entered in the file `fs-wrapper.conf` or `fs-wrapper.isolated.conf` and other parameters should be adjusted in order to meet the relevant requirements in each case.

In addition, in the file `fs-wrapper.conf` or `fs-wrapper.isolated.conf`, the line

```
#include.required ../conf/fs-wrapper-j1.include.conf
```

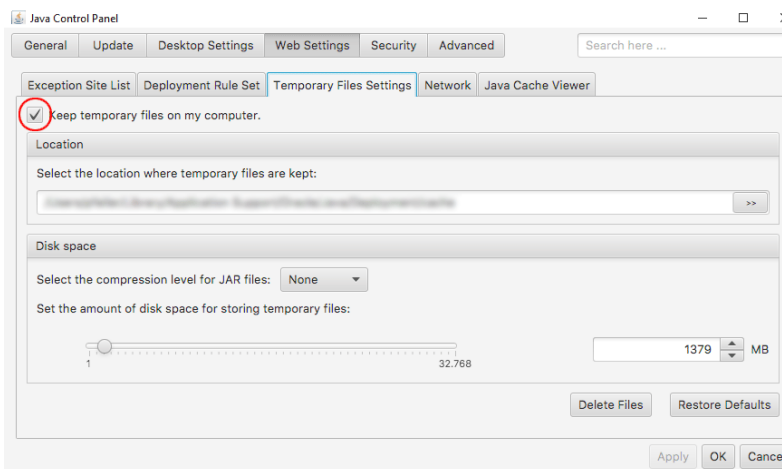
must be changed to

```
#include.required ../conf/fs-wrapper-j2.include.conf
```

### Notes about using Java 9 and higher



- Under Java 9 and higher, it is again possible to use the third-party component integrated in FirstSpirit, “Beanshell”, and to copy text from the integrated preview in the FirstSpirit SiteArchitect using the keyboard shortcut **Ctrl + C** as of FirstSpirit version 5.2R20, without the need to set the parameter `--illegal-access=warn` within the Java Control Panel. If other restrictions or problems should arise with using Java 9 and higher, which are not mentioned in the section “Restrictions” below, or in the following, please contact the Technical Support.
- The parameters of the wrapper files `fs-wrapper-j#.include.conf` cannot be edited like the default wrapper file `fs-wrapper.conf` via the FirstSpirit ServerMonitoring. However, the file can be edited in the file system.
- The Jetty web server integrated into FirstSpirit will not run under Oracle Java 9 or higher. The `fs-jetty.fsm` module (EAP) can be used instead.
- The “Keep temporary files on my computer” option for Java Web Start must be selected under Oracle Java 9+ so that FirstSpirit SiteArchitect and FirstSpirit ServerManager can be launched. Under Oracle Java 8 this could also be deselected. Therefore, we recommend checking this setting when changing to Oracle Java 9 or higher (tab “Web settings / Temporary Files Settings”):



## Notes about downgrading

Oracle Java 9 and higher differs in terms of their encryption options or their default encryption from Oracle Java 8. Switching a JDK is then problematic (e.g., from Oracle Java 9 to Oracle Java 8) if the repository was encrypted with a method that is not supported by the target JDK. Once the JDK has been switched,



the project will then not launch. However, this can be resolved by changing the `java.security` under “[JRE\_home]/lib/security/”.

For more information, please see <http://www.oracle.com/technetwork/java/javase/8u151-relnotes-3850493.html>.

### 3 Oracle Berkeley DB 7: Optimizations and tips on conversion time

Since the conversion tool “BerkeleyUtil”, introduced in FirstSpirit version 5.2R19 could now be used in several production environments we were able to collect data on the conversion time. With this data the conversion process could be optimized in FirstSpirit version 5.2R20, and optimized configuration could significantly reduce the conversion time for some Berkeley configurations. It became evident that the amount of memory accessible for the conversion tool is most relevant for the conversion time, while the rest of the hardware being used is less important.

Since the FirstSpirit server can't be active during the conversion we recommend allocating as much memory to the conversion tool as the server would normally use.

To do this, when starting the tool with

```
java -jar <FirstSpiritROOT>/bin/BerkeleyUtil.jar
```

you can pass the value # stored in `fs-wrapper.conf` (or `fs-wrapper.isolated.conf`, respectively) for `wrapper.java.maxmemory` as the value to `-Xmx#m`.

#### Example:

fs-wrapper.conf:

```
...  
wrapper.java.maxmemory=4000  
...
```

The call should then be:

```
java -jar -Xmx4000m <FirstSpiritROOT>/bin/BerkeleyUtil.jar -c <FirstSpiritROOT>
```



Another parameter, to reduce server downtime, is converting projects individually. On a running server projects can be converted via the ServerManager (Project properties, area “Repository”, drop-down “Backend”). The project being converted can not be used, but the others stay usable. The additional load while converting can have an impact on the server performance (comparable to a full generation of the respective project).

Tip: It is also possible to convert only some projects on the running server, and the rest later via the conversion tool. Projects already converted to Berkeley 7 will not be converted again when later performing a full server conversion with the conversion tool.

Lastly it is possible to convert repository databases with the “fast” option (-f). This is about 20 to 100 times faster than the “normal” conversion via dump/restore. But using this option errors have been observed, leading to an irreversibly damaged project, when projects already contained errors in their older Berkeley databases.

Because of this risk we recommend not using this option, when no current system backup is available. The risk when using this option can be minimized by validating projects before starting the conversion. This validation can be executed on a running FirstSpirit server. The results should be taken with a grain of salt, though, since new errors could be introduced in files already checked, or errors could be reported due to changes in progress while checking.

In any case a recent backup is recommended before converting the repository, whether using the “fast” option, or using just “normal” conversion.

### Examples for conversion times

#### Big FirstSpirit server:

- more than 100 projects
- FirstSpirit directory > 1 TB, containing > 500 GB in Berkeley DB directories (without “blob” directories)
- contains one very big project (“bdb” directory > 250 GB)

Conversion time with 20 GB memory: < 12 hours

Conversion time with 4 GB memory: > 24 hours

#### Medium-size FirstSpirit server:



- 27 projects
- FirstSpirit directory < 1 TB, including > 250 GB in Berkeley DB directories (without “blob” directories)
- contains one big project (“bdb” directory > 50 GB)

Conversion time with 4 GB memory: < 6 hours

Medium-size FirstSpirit server:

- 27 projects
- FirstSpirit directory < 100 GB, including < 50 GB in Berkeley DB directories (without “blob” directories)
- “bdb” directory of the biggest project is about 25 GB

Conversion time with 20 GB memory: < 2 hours

Fast conversion of the same server: < 8 minutes

The list above distinguishes between the FirstSpirit server's “bdb” and “blob” directories because these are treated differently:

If a project is using Berkeley version 5, its “blob” directory is not modified during conversion. If the project is using Berkeley version 3, files from the “blob” directory are moved into new sub-directories, which does not affect conversion time.

The content of the “bdb” directories is exported to new files, though, unless you are using the `-f` option, and then imported to a newly created database.

Note: The given values are just reference values, because FirstSpirit setups differ substantially from customer to customer. A FirstSpirit server's conversion time depends very much upon number and size of projects, and upon the customer specific usage.

See also Chapter “Conversion of the Oracle Berkeley DB (EAP)”.



## 4 Microsoft Edge Support

As of the current version of FirstSpirit, Microsoft Edge may be officially used for work with FirstSpirit ContentCreator.

## 5 Administration

### 5.1 Conversion of the Oracle Berkeley DB (EAP)

Various improvements have been made to the conversion tool `BerkeleyUtil.jar` provided with FirstSpirit version 5.2R19. This tool can be used for the simple conversion of all data stored in Berkeley DBs on existing FirstSpirit servers to Berkeley DB 7 format by entering just a few commands in the command line, and it is still in “EAP” state (early access program).

New parameters and modifications:

- The command `-l (--list)` now defines the size, in addition to the name, path, and version of all repositories on the server.
- The option `-v (--verbose)` can now be used to output additional logs, such as the stacktrace for error messages.
- The `-f (--fast)` option allows faster in-place conversion of project repositories. However, this should only be done if there is an up-to-date backup, since in rare cases existing problems in a repository can lead to it being irreparably damaged during a conversion. By default, a copy of the repository to be converted is created first, but when the option `-f` is used this copy is not created. Although it is more secure, the process of copying requires a little more time and temporary memory space. It also optimizes the repository to be converted so that it no longer contains unnecessary data.

Furthermore, write access from `BerkeleyUtil.jar` is now for security reasons only possible if the corresponding database is not opened for writing by another process.

**Note:** Conversion via `BerkeleyUtil.jar` should be performed on Unix systems by that user for which the FirstSpirit-Server was installed.



## 5.2 New Configuration Opportunity for Timeouts in LDAP Sections and for Login to the Root Web Application (fs-server.conf)

The FirstSpirit server allows creation of several LDAP configurations (so-called “sections”, see *FirstSpirit Server configuration / Configuration files (FirstSpirit Server) / FirstSpirit Server (fs-server.conf) / LDAP* (→*Documentation for Administrators*)). Each section contains at least one entry for an LDAP server which provisions LDAP data.

If a server fails or takes too long to answer (>30 seconds), timeouts may arise:

- timeout during login to the root web application
- timeout of the LDAP connection

The time span after which a timeout occurs may now be increased via the parameters `web.login.timeout` and `LDAP.TIMEOUT` (default value: 30).

Configuration of timeout for login to the root web application:

```
# login timeout in seconds for web authentication
web.login.timeout=30
```

Configuration of LDAP timeout:

```
// connect and read timeout in seconds
LDAP.TIMEOUT=30
```

## 5.3 Web server "Jetty" is now system module

The module `fs-jetty.fsm` (currently in the Early Access Program (“EAP”)) which will replace the earlier implementation “InternalJetty”, is now available as system module. This means that it exists on newly installed FirstSpirit servers as well as on existing FirstSpirit servers when they are updated to FirstSpirit version 5.2R20. The module needs no more to be installed manually.

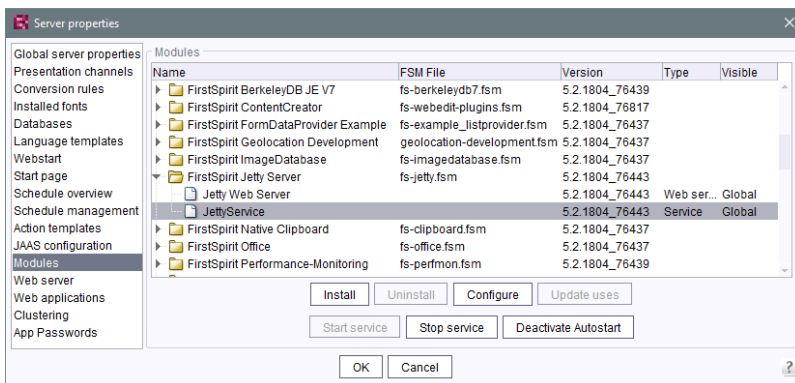
This module bases on the most recent version: 9.4. However, this version is not compatible with Java 7 and requires at least Java 8.



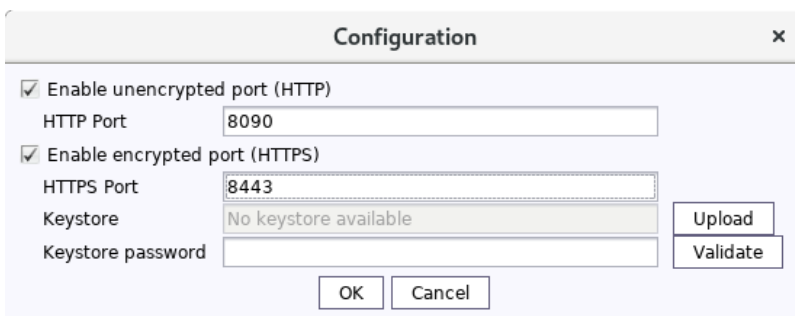
The functions of the integrated Jetty server (“InternalJetty”) were deprecated / discontinued with FirstSpirit version 5.2R18, and are scheduled to cease existing at all in August 2018 (FirstSpirit version 5.2R24). In the meantime, the currently integrated Jetty functions as well as Jetty as a module will be available in parallel with one another. During this period, it will be possible to test out the module and convert the operation of existing FirstSpirit installations that use Jetty to the Jetty module.

! Both the earlier implementation “InternalJetty” and the new implementation as a module run within the same JavaVM as the FirstSpirit server. This configuration is not suitable for production operation and should only be used for tests. For more complex configuration requirements (e.g. adjustment of memory size, timeouts, number of threads per deployed application, ...), use of an external web server (e.g. Tomcat) is recommended.

In order to use Jetty as a module, the corresponding service “JettyService” has to be started in the server properties of the ServerManager:



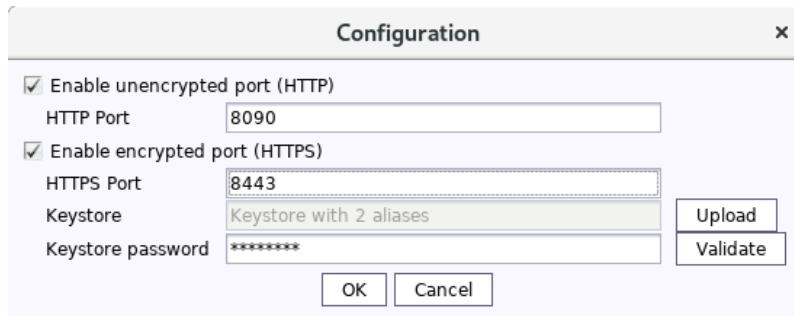
Here it is also possible to configure the favored port. (Changing this configuration requires a restart of the service “JettyService”):





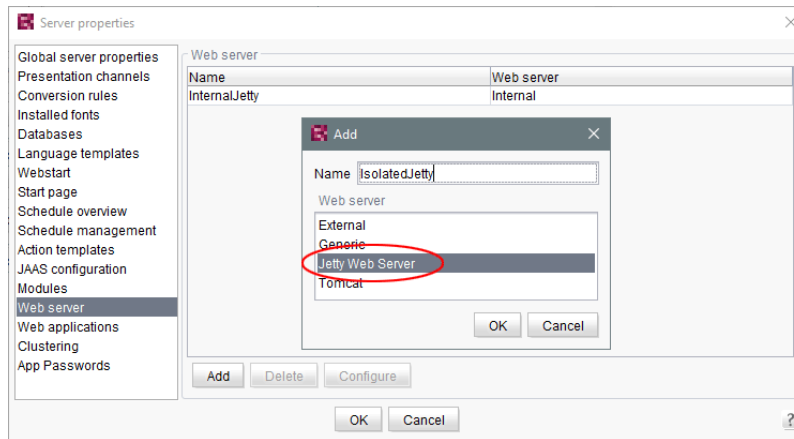
Creating encrypted connections (HTTPS) requires a keystore in JKS format. This can be uploaded using the button “Upload”.

After uploading the keystore and entering the corresponding password, a click on the button “Validate” checks the entered configuration. When successful, the number of detected aliases is displayed:



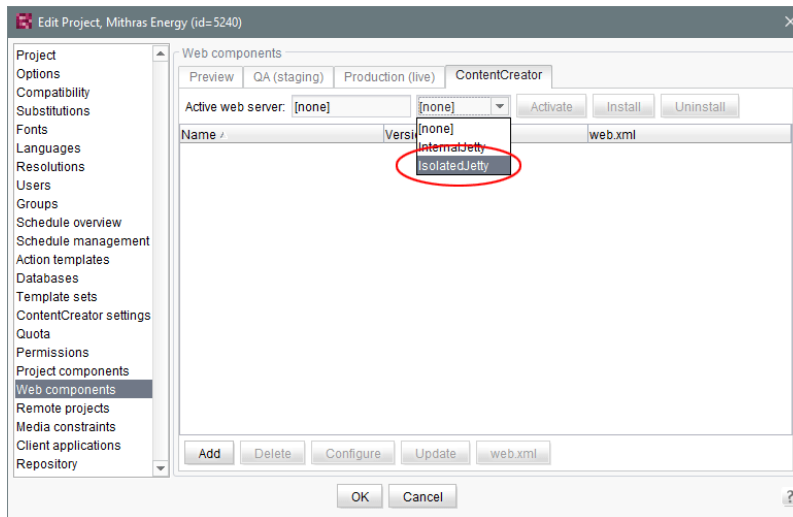
Configuration is completed with “OK”.

A new web server of the type “Jetty Web Server” may be added using “Webserver” in the server properties (e.g. with the name “IsolatedJetty”):



The web server may now be selected in the project properties under “Web components”:

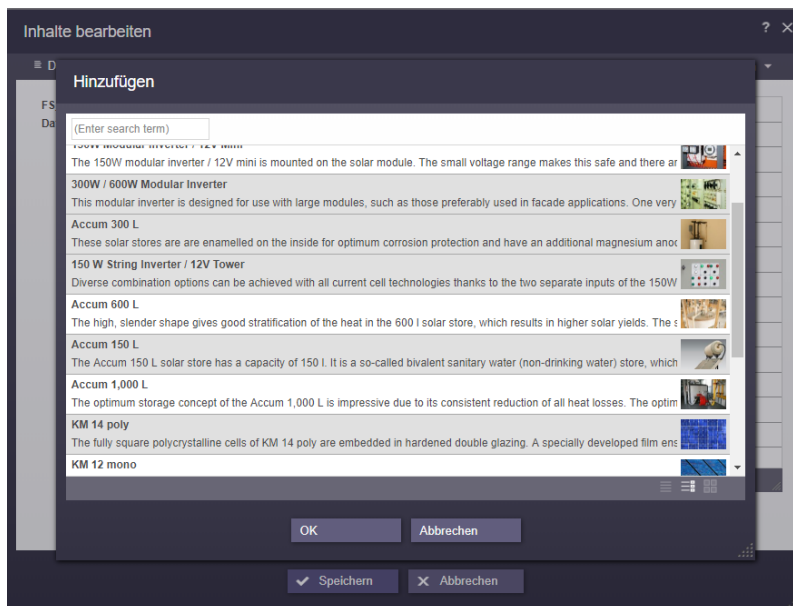




## 6 ContentCreator

### 6.1 FS\_INDEX: multiple selection possible in selection dialog

The input component for index lists (FS\_INDEX) supports multiple selection of entries. Via the selection dialog, several elements can now be selected from the connected data source and added to the index list at once.



Any restrictions on the number of entries in the list component that may be defined in the template will not be considered during selection.

## 7 Module Development, Scripts, API

### 7.1 "WE\_API" has new events

With the current FirstSpirit version you can, using the "WE\_API", register for events that are fired when creating a new page, or when changing the navigation within the current session. This allows for web-apps editing a FirstSpirit project via FirstSpirit Third Party Preview (TPP) to jump to the newly created page, or to update their navigation.

The new listener can be registered like this, on the JavaScript console:

```
top.WE_API.Common.addNavigationChangeListener(function(fsid) {  
  console.log("navigationChanged: " + (fsid ? fsid.getStoreType() + ":" + fsid.getId() :  
    "all"));  
});
```

Furthermore, using the WE\_API, you can now register for events that are fired when a workflow is being processed. This was also added to extend the Third Party Preview (TPP). But the listener can be used independently as well.

The listener can be registered as follows:

```
top.WE_API.Common.addWorkflowTransitionListener(function(){  
  console.log("WorkflowTransition:\n"  
  + "getWorkflowTarget: " + (workflowInfo.getWorkflowTarget() ?  
    workflowInfo.getWorkflowTarget().getId() : "-") + "\n"  
  + "isDeleted: " + workflowInfo.isDeleted() + "\n"  
  + "isReleased: " + workflowInfo.isReleased() + "\n"  
  + "isFirstTransition: " + workflowInfo.isFirstTransition() + "\n"  
  + "getTransitionId: " + workflowInfo.getTransitionId() + "\n"  
  + "getWorkflowId: " + workflowInfo.getWorkflowId() + "\n"  
  + "isEndState: " + workflowInfo.isEndState() + "\n");  
})
```



## 7.2 New functions in "WE-API"

With the TPP API's new `setPreviewElement` WebApps can now set the ContentCreator's PreviewElement, thus allowing users to work with the toolbar (workflows etc.), just as they know it from "classic" FirstSpirit projects.

The new function `addPreviewRequestHandler` makes it possible for WebApps to react appropriately when an editor clicks on a page or section in the report area.

## 7.3 Retrieving global system web apps

Global system web apps can now also be retrieved with the new method `getGlobalWebApps(boolean includeSystem)` in the interface `ModuleAdminAgent` (package `de.espirit.firstspirit.agency`, FirstSpirit Developer API).

# 8 Modules: Content Transport

## 8.1 Moving datasets and changing the explicit/implicit state of elements

The functionality "FirstSpirit ContentTransport" enables transport of project contents from a source project into a target project.

If folders have previously been added explicitly to a feature, the current child tree (i.e. all child elements at the time of export) was taken into account for each export. Therefore, if new child elements have been added to the folder since the feature was first created, these child elements will be included in the subsequent exports. For example, if child elements have been removed from the folder since the feature was first created, they will be missing in subsequent exports. In FirstSpirit version 5.2R20 and later, this rule is now also possible for datasets and data sources.

The following options for data sources can be selected:

- **Add Content Source:**  
Only the selected data source (without datasets) is added to the feature (corresponding to the previous "Add to Content Transport feature" for data sources).  
To include datasets in a transport, one of the following two options should be selected.
- **Add all displayed datasets (explicitly):**



The datasets currently displayed in the workspace are added to the feature (corresponding to the previous “Add all displayed datasets to feature” on data sources or “Add to Content Transport feature” on datasets). Datasets of the data source that are not displayed in the overview due to filtering, searches, etc., are not taken into account. In addition, no datasets are taken into account that are added to or deleted from the selected data source at a later point in time. If you want the current status of the datasets of the selected data source to be taken into account for future exports, select the option “Add all datasets (automatically via Content Source)”.

If you want to include not only the datasets in a transport, but also the data source, you can add it to the feature in the tree structure using the context menu option “Add Content Source” or activate the option “Content Source is part of the feature” in the “Included objects” section.

- **Add all datasets (automatically via Content Source)**

This adds all datasets of the data source to the feature. This also takes into account datasets that are not displayed in the overview due to filtering, searches, etc. During each transport, all datasets are exported that are contained in the data source at the time, including datasets that are created in the data source after the feature is created.

If you want to include not only the datasets in a transport, but also the data source, you can add it to the feature in the tree structure using the context menu option “Add Content Source” or activate the option “Content Source is part of feature” in the “Included objects” section.

Other functions:

- The “Add Content store folder” function adds all data sources contained in the folder to the feature (without datasets, similar to “Add Content Source”).
- The “Add Dataset” function adds only the selected dataset to the feature (similar to “Add all displayed datasets (explicitly)”).

The state of objects already added to the feature can be checked and modified in the “Included objects” area and in the workspace.

## Included objects

In the “Included objects” area, the state is displayed as follows:

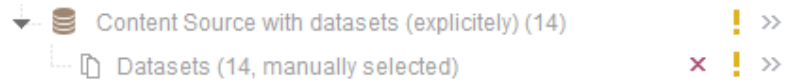
### Add Content Source:





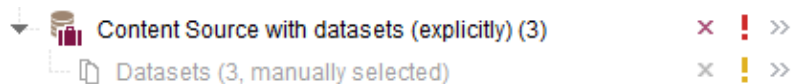
The name of the data source is displayed in normal text. The number of datasets taken into account is (0). You can check and modify the implicit/explicit state if necessary by right-clicking (see below). Alternatively, the state can also be checked in the workspace and modified if necessary.

### Add all displayed datasets (explicitly):



The data source is not part of the feature. Only the datasets contained at the time the feature was initially created are taken into account during transport. The number of datasets taken into account, in addition to the “manually selected” note, is displayed in brackets after the name of the data source and in a dataset node under the data source.

You can check and modify the implicit/explicit state if necessary by right-clicking (see below). If the data source is also to be included in transport, it can be added to the feature in the tree structure using the context menu entry “Add Content Source” or by activating the option “Content Source is part of feature” in the “Included objects” area. The display is then as follows:

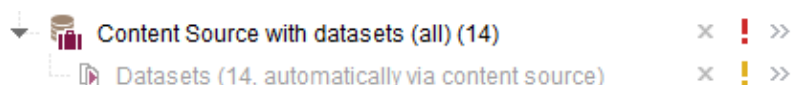


### Add all datasets (automatically via Content Source):



The data source is not part of the feature. All the datasets contained in the data source at the respective time are taken into account during transport. The number of datasets taken into account, in addition to the “automatically via Content Source” note, is displayed in brackets after the name of the data source and in a dataset node under the data source.

You can check and modify the implicit/explicit state if necessary by right-clicking (see below). If the data source is also to be included in transport, it can be added to the feature in the tree structure using the context menu entry “Add Content Source” or by activating the option “Content Source is part of feature” in the “Included objects” area. The display is then as follows:



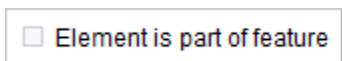
### Implicit/explicit state



The state of an object as implicitly or explicitly added element can now be checked and modified for all object types simply by right-clicking on the desired element under “Included objects” (“implicit/explicit state”):



**Active / box ticked:** The object was explicitly added. The object can be removed from the feature by clicking on the tooltip (corresponds to the “x” icon). Elements with this state are also identified by a “briefcase” icon.



**Active / box not ticked:** The object has been implicitly added as the parent element. The object can be explicitly added to the feature by clicking on the tooltip. All child elements are also added automatically.



**Inactive / box ticked:** The object was implicitly added as a child element. The implicit/explicit state for these elements can only be modified from the parent node.

For data sources with datasets, the following additional options can be selected (right-click on the dataset node):

- **Automatically add all datasets of the content data source to the feature:** If this option is active (ticked), all the datasets contained in the data source at the respective time are taken into account during transport. If this option is inactive (not ticked), only the datasets contained at the time the feature was first created are taken into account during transport. If required, the option can be activated or deactivated by clicking on it.
- **Remove all datasets:** By clicking on the tooltip, all datasets including the data source can be removed from the feature (corresponds to the “x” icon).

As part of an effort to standardize context menus, the new layer in the context menu for adding objects to a feature in the tree view is now also valid for all other object types (old: “Add to Content Transport feature”; new: “Add Content Transport / Add <object type>”).



## 9 Modules: Security

### 9.1 Improved Problem Recognition When Accessing an Access Control Database

When publishing via the FirstSpirit publication servlet (module: “FirstSpirit Security”), an error message is now output if the target side attempts to communicate with an unusable access control database. (This error may appear after conversion of the access control database to the Berkeley DB 7 format, for example.) Use of this change requires an update of the module “FirstSpirit Security” in the web application on the target side.

## 10 Repository

### 10.1 Berkeley DB 7: Optimizations

Berkeley DB 7 now checks for sufficient available storage space. By default, if available storage space is below a threshold of 512 MebiBytes (approx. 536 MB), further write operations in the Berkeley database are no longer possible. Error message:

```
Disk usage is not within je.maxDisk or je.freeDisk limits and write operations  
are prohibited.
```

Note: The storage space Berkeley DB 7 checks for is independent of the setting for monitoring of available storage space which may be configured via FirstSpirit ServerManager (“Server / Properties / Global server properties / Directories for disk space check”).

For further information, see *FirstSpirit Manual for Administrators*, “FirstSpirit ServerManager / Project properties / Repository”.

## 11 System

### 11.1 Integrated Software

With the current FirstSpirit version, the following, internally used software has been updated:

- **Google Web Toolkit** (“GWT”, used for ContentCreator)





Update from version 2.7 to 2.8.2

- **Beanshell**  
 Update to version 2.1.9
- **Eclipse Jetty** (contained in the module `fs-jetty.fsm`)  
 Update from version 9.4.8 to 9.4.9
- **ASM** (Library for analyzing and modifying Java bytecode)  
 Update to version 6.1

## 12 Deprecations

For e-Spirit, an important goal in software development is to avoid introducing incompatibilities and migration expenditures related to updating from one FirstSpirit release to the next as much as possible or to compensate for these within the software. FirstSpirit updates should generally be deployable with little effort or able to be carried out in a fully automated fashion.

However - not least in order to ensure maintainability and to future-proof the software - e-Spirit cannot fully avoid replacing existing functionality with new mechanisms. In the future, functionality that will be removed from the software will be listed in this section, including the date at which time the functionality will be removed.

Functionality	Deprecated as of	Will be removed/ Was removed as of
Oracle Java 7 Support	5.2R15	June 2018
FirstSpirit Developer API: de.espirit.firstspirit.agency.GroupsAgent	5.2R15	May 2018
Integrated preview for content (Mozilla Firefox, v3 and v15)	5.2R18	August 2018
Integrated preview for content (Internet Explorer old)	5.2R18	May 2018
Integrated Jetty	5.2R18	August 2018
Operating-system specific third-party applications in the AppCenter of the FirstSpirit SiteArchitect (exception: browser Integration)	5.2R19	September 2018



## 13 Overview

ID	Description	Categories
180563	In the input component FS_INDEX, the creation of a new dataset has been improved.	Input Components
188089	Errors occurred when displaying deleted elements in the project history report.	ContentCreator
188389	<p>With the current FirstSpirit version, additional data sources with all datasets that are contained in the data source at the time of an export can now be exported. You can also check and modify the “implicit/explicit state” for a feature element under “Included objects”.</p> <p>Further information can be found in chapter “Modules: Content Transport: Moving datasets and changing the explicit/implicit state of elements”.</p>	Content Store, Content Transport
188981	Optimized evaluation of connection mode in local connection settings.	FirstSpirit Administrator
191129	In rare cases, erroneous behavior could arise when creating features.	Content Transport
193454	After changing and creating another version of a content package, the found dependency was erroneously logged as WARN instead of INFO.	Corporate Content
199091	Erroneous behavior could arise during creation of portal entry points (FirstSpirit module “SAP Business Package for FirstSpirit”).	Modules
202704	Under Microsoft Windows, when using the Google Chrome browser engine, the required files were rolled out into a wrong user directory.	Preview
203585	<p>FS_INDEX: multiple selection possible in selection dialog</p> <p>Further information can be found in chapter “ContentCreator: FS_INDEX: multiple selection possible in selection dialog”.</p>	ContentCreator



ID	Description	Categories
204762	<p>Global system web apps can now also be retrieved with the new method <code>getGlobalWebApps(boolean includeSystem)</code> in the interface <code>ModuleAdminAgent</code> (package <code>de.espirit.firstspirit.agency</code>, FirstSpirit Developer API).</p> <p>Further information can be found in chapter “Module Development, Scripts, API: Retrieving global system web apps”.</p>	Developer, FirstSpirit API, Module development
205164	Erroneous behavior could arise when opening forms which are defined in schedule tasks.	Isolated mode (BETA)
205964	<p>The FirstSpirit server allows creation of several LDAP configurations (so-called “sections”). Each section contains at least one entry for an LDAP server which provisions LDAP data. If a server fails or takes too long to answer (&gt;30 seconds), timeouts (of the LDAP connection and of login to the root web application) may arise. The time span after which a timeout occurs may now be increased via the parameters <code>web.login.timeout</code> and <code>LDAP.TIMEOUT</code> (default value: 30).</p> <p>Further information can be found in chapter “Administration: New Configuration Opportunity for Timeouts in LDAP Sections and for Login to the Root Web Application (<code>fs-server.conf</code>)”.</p>	FirstSpirit Administrator, ServerManager
206161	Optimized interpretation of configuration files of “PermissionService” (module “Permission”).	Modules
206954	Erroneous behavior could arise when inputting a time into the input component <code>CMS_INPUT_DATE</code> if the FirstSpirit server was configured with a different time zone than that of the client in which the time input was carried out.	ContentCreator
207167	The installation of local feature files has been improved.	Content Transport
207297	The use of SEO URLs in conjunction with parallel generation actions has been improved.	Tasks
207348	When using the Jetty module, the handling of web applications was optimized when restarting the server.	Server Administrator



ID	Description	Categories
207377 208105 208149	<p>Various improvements have been made to the conversion tool provided with FirstSpirit version 5.2R19. This tool can be used for the simple conversion of all data stored in Berkeley DBs on existing FirstSpirit servers to Berkeley DB 7 format by entering just a few commands in the command line, and it is still in “EAP” state (early access program).</p> <p>Further information can be found in chapter “Administration: Conversion of the Oracle Berkeley DB (EAP)”.</p>	FirstSpirit Administrator, Integrated software, Repository
207392	User principals were not correctly regarded when using multiple login modules in sequence.	FirstSpirit Administrator
207446 207489 207504 207892	<p>In the current FirstSpirit version, updated internally used software.</p> <p>Further information can be found in chapter “System: Integrated Software”.</p>	Integrated software
207450	Optimized adoption via API of values in the input component FS_CATALOG between projects with different language sets.	SiteArchitect
207452	Optimized refresh of the integrated preview when switching between languages while editing inner entries of the input component FS_CATALOG.	Preview, SiteArchitect
207662	<p>New TPP-API functions improve ContentCreator integration of TPP WebApps.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: New functions in “WE-API””.</p>	Developer, FirstSpirit API, Module development, Modules, Third Party Preview (TPP)
207665 208005	<p>Berkeley DB 7 now checks for sufficient available storage space and prohibits further write operations if storage space is insufficient.</p> <p>Further information can be found in chapter “Repository: Berkeley DB 7: Optimizations”.</p>	Integrated software, Repository, Security
207731	In ContentCreator, erroneous behavior could arise in the display of preview images in editing dialogs.	Isolated mode (BETA)
207787	The identification of the java version which is used by FirstSpirit was optimized.	Integrated software



ID	Description	Categories
207794	<p>With the current FirstSpirit version you can, using the “WE_API”, register for events that are fired when creating a new page, when changing the navigation, or when using workflows within the current session.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: “WE_API” has new events”.</p>	Developer, FirstSpirit API, Module development, Modules, Third Party Preview (TPP)
207808	Design touch-ups and optimizations related to SiteArchitect.	SiteArchitect
207818 207377	<p>When publishing via the FirstSpirit publication servlet (module: “FirstSpirit Security”), an error message is now output if the target side attempts to communicate with an unusable access control database. Use of this change requires an update of the module “FirstSpirit Security” in the web application on the target side.</p> <p>Further information can be found in chapter “Modules: Security: Improved Problem Recognition When Accessing an Access Control Database”.</p>	Modules, Security, Server Administrator, Server-Manager
207899	In cluster operations, improved use of write-protected mounted directories.	Clustering
207945	<p>The module <code>fs-jetty.fsm</code> is available as system module as of the current FirstSpirit version.</p> <p>Further information can be found in chapter “Administration: Web server “Jetty” is now system module”.</p>	FirstSpirit Administrator, Integrated software, Modules, Server Administrator, ServerManager
207979	Erroneous behavior could arise during project export and import.	Project export / import
208171	Erroneous behavior could arise during output of nested data in content projections via “ <code>\$CMS_VALUE(_dataset.formData)</code> ”.	Developer
208214	Optimized consideration of preferred display language in workflow forms.	SiteArchitect, Workflow
208229	Erroneous behavior could arise when jumping to a template (within a <code>CMS_RENDER</code> statement) via <code>Ctrl + LEFT CLICK</code> .	Developer



ID	Description	Categories
208310	Optimized permission management in the interface <code>ModuleAdminAgent</code> (FirstSpirit Developer API, package <code>de.espirit.firstspirit.agency</code> ).	FirstSpirit API, Permissions
208401	Optimized error handling for syntactically incorrect regular expressions (e.g. when searching within an output channel).	Developer

## 14 Categories

### 14.1 Clustering

ID	Description
207899	In cluster operations, improved use of write-protected mounted directories.

### 14.2 Content Store

ID	Description
188389	<p>With the current FirstSpirit version, additional data sources with all datasets that are contained in the data source at the time of an export can now be exported. You can also check and modify the “implicit/explicit state” for a feature element under “Included objects”.</p> <p>Further information can be found in chapter “Modules: Content Transport: Moving datasets and changing the explicit/implicit state of elements”.</p>

### 14.3 Content Transport

ID	Description
188389	<p>With the current FirstSpirit version, additional data sources with all datasets that are contained in the data source at the time of an export can now be exported. You can also check and modify the “implicit/explicit state” for a feature element under “Included objects”.</p>



ID	Description
	Further information can be found in chapter “Modules: Content Transport: Moving datasets and changing the explicit/implicit state of elements”.
191129	In rare cases, erroneous behavior could arise when creating features.
207167	The installation of local feature files has been improved.

## 14.4 ContentCreator

ID	Description
188089	Errors occurred when displaying deleted elements in the project history report.
203585	FS_INDEX: multiple selection possible in selection dialog  Further information can be found in chapter “ContentCreator: FS_INDEX: multiple selection possible in selection dialog”.
206954	Erroneous behavior could arise when inputting a time into the input component CMS_INPUT_DATE if the FirstSpirit server was configured with a different time zone than that of the client in which the time input was carried out.

## 14.5 Corporate Content

ID	Description
193454	After changing and creating another version of a content package, the found dependency was erroneously logged as WARN instead of INFO.

## 14.6 Developer

ID	Description
204762	Global system web apps can now also be retrieved with the new method <code>getGlobalWebApps(boolean includeSystem)</code> in the interface <code>ModuleAdminAgent</code> (package <code>de.espirit.it.firstspirit.agency</code> , FirstSpirit Developer API).



ID	Description
	Further information can be found in chapter “Module Development, Scripts, API: Retrieving global system web apps”.
207662	New TPP-API functions improve ContentCreator integration of TPP WebApps.  Further information can be found in chapter “Module Development, Scripts, API: New functions in “WE-API””.
207794	With the current FirstSpirit version you can, using the “WE_API”, register for events that are fired when creating a new page, when changing the navigation, or when using workflows within the current session.  Further information can be found in chapter “Module Development, Scripts, API: “WE_API” has new events”.
208171	Erroneous behavior could arise during output of nested data in content projections via “\$CMS_VALUE(_dataset.formData)\$”.
208229	Erroneous behavior could arise when jumping to a template (within a CMS_RENDER statement) via <code>Ctrl + LEFT CLICK</code> .
208401	Optimized error handling for syntactically incorrect regular expressions (e.g. when searching within an output channel).

## 14.7 FirstSpirit API

ID	Description
204762	Global system web apps can now also be retrieved with the new method <code>getGlobalWebApps(boolean includeSystem)</code> in the interface <code>ModuleAdminAgent</code> (package <code>de.espirit.firstspirit.agency</code> , FirstSpirit Developer API).  Further information can be found in chapter “Module Development, Scripts, API: Retrieving global system web apps”.
207662	New TPP-API functions improve ContentCreator integration of TPP WebApps.  Further information can be found in chapter “Module Development, Scripts, API: New functions in “WE-API””.





ID	Description
207794	<p>With the current FirstSpirit version you can, using the “WE_API”, register for events that are fired when creating a new page, when changing the navigation, or when using workflows within the current session.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: “WE_API” has new events”.</p>
208310	<p>Optimized permission management in the interface <code>ModuleAdminAgent</code> (FirstSpirit Developer API, package <code>de.espirit.firstspirit.agency</code>).</p>

## 14.8 FirstSpirit Administrator

ID	Description
188981	<p>Optimized evaluation of connection mode in local connection settings.</p>
205964	<p>The FirstSpirit server allows creation of several LDAP configurations (so-called “sections”). Each section contains at least one entry for an LDAP server which provisions LDAP data. If a server fails or takes too long to answer (&gt;30 seconds), timeouts (of the LDAP connection and of login to the root web application) may arise. The time span after which a timeout occurs may now be increased via the parameters <code>web.login.timeout</code> and <code>LDAP.TIMEOUT</code> (default value: 30).</p> <p>Further information can be found in chapter “Administration: New Configuration Opportunity for Timeouts in LDAP Sections and for Login to the Root Web Application (fs-server.conf)”.</p>
207377	<p>Various improvements have been made to the conversion tool provided with FirstSpirit version 5.2R19. This tool can be used for the simple conversion of all data stored in Berkeley DBs on existing FirstSpirit servers to Berkeley DB 7 format by entering just a few commands in the command line, and it is still in “EAP” state (early access program).</p> <p>Further information can be found in chapter “Administration: Conversion of the Oracle Berkeley DB (EAP)”.</p>
208105	
208149	
207392	<p>User principals were not correctly regarded when using multiple login modules in sequence.</p>
207945	<p>The module <code>fs-jetty.fsm</code> is available as system module as of the current FirstSpirit version.</p> <p>Further information can be found in chapter “Administration: Web server “Jetty” is now system module”.</p>



## 14.9 Input Components

ID	Description
180563	In the input component FS_INDEX, the creation of a new dataset has been improved.

## 14.10 Integrated software

ID	Description
207377	Various improvements have been made to the conversion tool provided with FirstSpirit version 5.2R19. This tool can be used for the simple conversion of all data stored in Berkeley DBs on existing FirstSpirit servers to Berkeley DB 7 format by entering just a few commands in the command line, and it is still in “EAP” state (early access program).  Further information can be found in chapter “Administration: Conversion of the Oracle Berkeley DB (EAP)”.
208105	
208149	
207446	In the current FirstSpirit version, updated internally used software.
207489	Further information can be found in chapter “System: Integrated Software”.
207504	
207892	
207665	Berkeley DB 7 now checks for sufficient available storage space and prohibits further write operations if storage space is insufficient.  Further information can be found in chapter “Repository: Berkeley DB 7: Optimizations”.
208005	
207787	The identification of the java version which is used by FirstSpirit was optimized.
207945	The module <code>fs-jetty.fsm</code> is available as system module as of the current FirstSpirit version.  Further information can be found in chapter “Administration: Web server "Jetty" is now system module”.

## 14.11 Isolated mode (BETA)

ID	Description
205164	Erroneous behavior could arise when opening forms which are defined in schedule tasks.



ID	Description
207731	In ContentCreator, erroneous behavior could arise in the display of preview images in editing dialogs.

## 14.12 Module development

ID	Description
204762	<p>Global system web apps can now also be retrieved with the new method <code>getGlobalWebApps(boolean includeSystem)</code> in the interface <code>ModuleAdminAgent</code> (package <code>de.espirit.firstspirit.agency</code>, FirstSpirit Developer API).</p> <p>Further information can be found in chapter “Module Development, Scripts, API: Retrieving global system web apps”.</p>
207662	<p>New TPP-API functions improve ContentCreator integration of TPP WebApps.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: New functions in “WE-API””.</p>
207794	<p>With the current FirstSpirit version you can, using the “WE_API”, register for events that are fired when creating a new page, when changing the navigation, or when using workflows within the current session.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: “WE_API” has new events”.</p>

## 14.13 Modules

ID	Description
199091	Erroneous behavior could arise during creation of portal entry points (FirstSpirit module “SAP Business Package for FirstSpirit”).
206161	Optimized interpretation of configuration files of “PermissionService” (module “Permission”).
207662	New TPP-API functions improve ContentCreator integration of TPP WebApps.



ID	Description
	Further information can be found in chapter “Module Development, Scripts, API: New functions in “WE-API””.
207794	With the current FirstSpirit version you can, using the “WE_API”, register for events that are fired when creating a new page, when changing the navigation, or when using workflows within the current session.  Further information can be found in chapter “Module Development, Scripts, API: “WE_API” has new events”.
207818 207377	When publishing via the FirstSpirit publication servlet (module: “FirstSpirit Security”), an error message is now output if the target side attempts to communicate with an unusable access control database. Use of this change requires an update of the module “FirstSpirit Security” in the web application on the target side.  Further information can be found in chapter “Modules: Security: Improved Problem Recognition When Accessing an Access Control Database”.
207945	The module <code>fs-jetty.fsm</code> is available as system module as of the current FirstSpirit version.  Further information can be found in chapter “Administration: Web server “Jetty” is now system module”.

## 14.14 Permissions

ID	Description
208310	Optimized permission management in the interface <code>ModuleAdminAgent</code> (FirstSpirit Developer API, package <code>de.espirit.firstspirit.agency</code> ).

## 14.15 Preview

ID	Description
202704	Under Microsoft Windows, when using the Google Chrome browser engine, the required files were rolled out into a wrong user directory.



ID	Description
207452	Optimized refresh of the integrated preview when switching between languages while editing inner entries of the input component FS_CATALOG.

## 14.16 Project export / import

ID	Description
207979	Erroneous behavior could arise during project export and import.

## 14.17 Repository

ID	Description
207377	Various improvements have been made to the conversion tool provided with FirstSpirit version 5.2R19. This tool can be used for the simple conversion of all data stored in Berkeley DBs on existing FirstSpirit servers to Berkeley DB 7 format by entering just a few commands in the command line, and it is still in “EAP” state (early access program).  Further information can be found in chapter “Administration: Conversion of the Oracle Berkeley DB (EAP)”.
208105	
208149	
207665	Berkeley DB 7 now checks for sufficient available storage space and prohibits further write operations if storage space is insufficient.  Further information can be found in chapter “Repository: Berkeley DB 7: Optimizations”.
208005	

## 14.18 Security

ID	Description
207665	Berkeley DB 7 now checks for sufficient available storage space and prohibits further write operations if storage space is insufficient.  Further information can be found in chapter “Repository: Berkeley DB 7: Optimizations”.
208005	



ID	Description
207818 207377	When publishing via the FirstSpirit publication servlet (module: "FirstSpirit Security"), an error message is now output if the target side attempts to communicate with an unusable access control database. Use of this change requires an update of the module "FirstSpirit Security" in the web application on the target side.  Further information can be found in chapter "Modules: Security: Improved Problem Recognition When Accessing an Access Control Database".

## 14.19 Server Administrator

ID	Description
207348	When using the Jetty module, the handling of web applications was optimized when restarting the server.
207818 207377	When publishing via the FirstSpirit publication servlet (module: "FirstSpirit Security"), an error message is now output if the target side attempts to communicate with an unusable access control database. Use of this change requires an update of the module "FirstSpirit Security" in the web application on the target side.  Further information can be found in chapter "Modules: Security: Improved Problem Recognition When Accessing an Access Control Database".
207945	The module <code>fs-jetty.fsm</code> is available as system module as of the current FirstSpirit version.  Further information can be found in chapter "Administration: Web server "Jetty" is now system module".

## 14.20 ServerManager

ID	Description
205964	The FirstSpirit server allows creation of several LDAP configurations (so-called "sections"). Each section contains at least one entry for an LDAP server which provisions LDAP data. If a server fails or takes too long to answer (>30 seconds), timeouts (of the LDAP connection and of login to the root web application) may arise. The time span after which a timeout occurs may now be increased via the parameters <code>web.login.timeout</code> and <code>LDAP.TIMEOUT</code> (default value: 30).



ID	Description
	Further information can be found in chapter “Administration: New Configuration Opportunity for Timeouts in LDAP Sections and for Login to the Root Web Application (fs-server.conf)”.
207818 207377	When publishing via the FirstSpirit publication servlet (module: “FirstSpirit Security”), an error message is now output if the target side attempts to communicate with an unusable access control database. Use of this change requires an update of the module “FirstSpirit Security” in the web application on the target side.  Further information can be found in chapter “Modules: Security: Improved Problem Recognition When Accessing an Access Control Database”.
207945	The module <code>fs-jetty.fsm</code> is available as system module as of the current FirstSpirit version.  Further information can be found in chapter “Administration: Web server “Jetty” is now system module”.

## 14.21 SiteArchitect

ID	Description
207450	Optimized adoption via API of values in the input component FS_CATALOG between projects with different language sets.
207452	Optimized refresh of the integrated preview when switching between languages while editing inner entries of the input component FS_CATALOG.
207808	Design touch-ups and optimizations related to SiteArchitect.
208214	Optimized consideration of preferred display language in workflow forms.

## 14.22 Tasks

ID	Description
207297	The use of SEO URLs in conjunction with parallel generation actions has been improved.



## 14.23 Third Party Preview (TPP)

ID	Description
207662	<p>New TPP-API functions improve ContentCreator integration of TPP WebApps.</p> <p>Further information can be found in chapter "Module Development, Scripts, API: New functions in "WE-API".</p>
207794	<p>With the current FirstSpirit version you can, using the "WE_API", register for events that are fired when creating a new page, when changing the navigation, or when using workflows within the current session.</p> <p>Further information can be found in chapter "Module Development, Scripts, API: "WE_API" has new events".</p>

## 14.24 Workflow

ID	Description
208214	Optimized consideration of preferred display language in workflow forms.

