



Wir digitalisieren Ihre Geschäftsprozesse

X4 Release Notes



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1 Release Notes 6.3.1

The following bugs have been fixed with X4 Suite version 6.3.1:

1.1 X4 Designer

Rule component causes error

When using Rule components in a business process (.bpm) the process could no longer be opened due to an error caused by the Rule component. This error has been fixed.

Bug fixes within the Output view


- In the Output view, the displayed file structure was not updated when saving the output via **Save content to output view**, if the user had removed a file in the repository in debug mode. This error has been fixed.
- When saving the output of a report component via **Save content to output view** in the Output view, an empty PDF file was created. This error has been fixed.
- Copying XML snippets in the Output view used to work only with the key combination Ctrl + C. The context menu of the Output view has now been extended by the option Copy.
- If the output of a debug step contained a leading slash, an error occurred in the Output view. This error has been fixed.

Error while navigating within Design view

Navigating in the Design view of an XSL mapping was no longer possible once the root element was collapsed. This error has been fixed.

Deleting a Timer-based Event or a Human Task does not delete the linked dynamic process

When deleting a Timer-based event or a Human Task with a linked dynamic configuration process, a dialog is now displayed to delete both the component and the linked process.

 After confirming the dialog, the linked process can no longer be restored – not even by undoing the last step. Only the component is restored by undoing the last step.

1.2 Adapters

Fixed an issue in JSON Validator Adapter

JSON Validator Adapter didn't use current JSON schema features. This error has been fixed.

Fixed an issue in User Identity Adapter

The use of *User Identity Adapter* caused an error, if its process was called via a web service. This error has been fixed.

Fixed an issue in HTTP(S) Adapter

Certain characters were not properly escaped, after using the *HTTP(S) Adapter*. This error has been fixed.

Filter didn't work, when using semicolon as separator in File System Adapter

The *File System Adapter* didn't find any matches, if a semicolon was used to separate between multiple search criteria.

Fixed an issue in FTP Adapter

An error occurred in *FTP Adapter*, when placeholders were used in attribute documentname.

Missing operations in MQ Series Transfer adapter

Commit, Rollback and Clear are now displayed as available operations again in *MQ Series Transfer adapter*.

1.3 X4 Server

Server installation package for MS Windows contains wrong runtime environment

The Server installation package for MS Windows `X4ServerSetup_R6.3.0_64bit.msi` contained OpenJdk 13 instead of AdoptOpenJdk 11 as integrated runtime environment. The installation package has now been updated.

AdoptOpenJDK update

The integrated runtime environment has been updated to the latest version AdoptOpenJDK 11.0.8.

Fixed an issue where components are calling a process

Components calling a process didn't work after Server restart. This error has been fixed.

Bug fixes within Task Management Web App

- Tasks that were forwarded with a comment within *Task Management Web App* were saved with an incorrect timestamp. This error has been fixed.
- Tasks assigned to a user within *Task Management Web App* could not be declined by clicking on the decline button.
- A refresh button was shown in mobile view of the *Task Management Web App* when navigating back into the list view from a single task.
- Dialogs within the *Task Management Web App* are no longer displayed shortened (. . .) if the corresponding text is too long.

Server evaluation failed in DMN rules

X4 Server wasn't able to validate DMN rules correctly, if placeholders were used in an expression. This error has been fixed.

Fixed an issue in X4 Suite uninstalling process

Deleting the desktop shortcuts failed when uninstalling X4 Suite. The error occurred if the user did not have administrator rights and the shortcuts were created during the installation routine.



Note that for installations, uninstallations and updates you must either have administrator rights or write permissions to the installation directory and the public desktop folder.

Server error when using adapters without XML attribute type

A Server error occurred if the used adapter definition files (`fa_definitions`) did not contain the XML attribute `type`. This error has been fixed.

1.4 X4 Activities Web Apps

Bug fixes within the TextBox control

- Hard-coded texts set via the TextBox attribute `value` were not displayed in the browser. However, setting values via data binding worked. This error has been fixed.
- When setting the TextBox attribute `FontFamily` the attribute was ignored. This error has been fixed.

Error for Properties of the type Complex

Properties of the type `Complex` not used in the columns of a list component were not returned to the processing process. This error has been fixed.

Missing highlighting of mandatory fields in forms

Mandatory fields in forms are now highlighted in color.

Bug fixes for Upload file action

- When using the `UploadAction` an error used to occur, if the page contained a lot of data. The action now works as expected and doesn't cause any error.
- When uploading an image, an error occurred, after the specific file was chosen.
- When uploading a file, the confirmation dialog is no longer displayed twice.
- Properties are now transferred when executing the actions *Upload file* and *Download file*.

Error when using gauge chart

An error occurred, when using a negative integer in the attributes `startAngle` or `endAngle`.

Bug fixes within the Card control

- The attribute `validated=true` was ignored in Card controls. This error has been fixed.
- The *Download file* action can now be used in Card controls as expected.
- Actions using `disabled` or `hidden` attribute didn't have an effect, if they were used within a Card control. This error has been fixed.
- The minimum width of a button within a Card control is 31% as before, however, the width now adapts to the content of the button if the button requires more space. If the button reaches the width of the card, the text inside the button is cut off.

Incorrect display of symbols in the menu bar

Icons in the menu bar were cut off, if images were used for these icons.

Incorrect alignment of icons in connection with a text element

Icons in connection with a text element were not exactly horizontally aligned. This error has been fixed.

Bug fixes in Web App tutorials

- An incorrect path was corrected within the process of Web App tutorial *Map Control*.

- Specific value in `width` attribute caused a broken layout within the *Card Control* tutorial.

Bug fixed within the Map control

- Percentages in `height` attribute were ignored within the Map control. This error has been fixed.
- In Internet Explorer 11, icons of certain simple markers were not properly encoded (escaped) and displayed incorrectly.
- Several display errors for markers in Bing maps were fixed.
- When calculating a route in OpenStreetMap, markers from previous searches were not deleted. This error has been fixed.

Bug fixes for Select Action

- An error occurred, if the Select Action attribute `componentName` was set in combination with a `ComboBox` control. This error has been fixed.
- The attribute `disableAutoSelect` had no effect if it was used for a Select Action. The attribute now works as expected.

Web App can only be opened after Server restart

The change of a non-unique component path into a unique component path needed a Server restart to make the Web App work again.

Scrolling position wasn't restored, when navigating in the menu

The scrolling position in the browser was kept, when the user was navigating in the menu. This error has been fixed.

An attribute in .wad file was not interpreted correctly

In .wad file the attribute `units="percents"` of an image element was falsely interpreted as `units="pixels"`. This error has been fixed.

Fixed an issue when using attribute border in Label controls

No border was shown on Label control, if attribute `border="true"` was set. This error has been fixed.

Missing attribute in FileLink controls

When using the FileLink control, the attribute `fileId` couldn't be accessed. This error has been fixed.

Fixed an issue when using an image within a TextBox

An image couldn't be displayed within a TextBox control, if the image was referenced via an external URL. This error has been fixed.

Wrong menu width in Web Apps

The menu width has been adjusted for both the desktop view and the mobile view.

Defined font for buttons is ignored

Custom fonts for buttons now work as expected.

Bug fixes related to validation

- A corresponding message is now displayed when validation of radio buttons fails.

- For the validation of text boxes of type `datetime`, a corresponding message is now also displayed.
- The size and position of the validation message for checkboxes has been adjusted.

Attribute `textOverflow` is ignored in Header and Card controls

The attribute `textOverflow` is now also applied correctly in Header and Card controls.

Bug fixes for the List component

- In some cases, contents within the columns of a list component were wrapped too early. This error has been fixed.
- When using a dark theme, the contrast colors within the list component are now displayed as expected.

Renaming of a project with reference updates fails

Renaming projects with reference updates failed if the `.wad` file was changed before renaming. This error has been fixed.

Attribute `visible` doesn't behave as expected for actions

If the attribute `visible` of an action was bound to a Boolean property and the property was not initialized by the process, the action was always displayed. This behavior differed from previous versions. This error has been fixed.

Changes within Controls

The attribute `textOverflow` used for controls now has the default value `allow` instead of `ellipsis`.

Fonts included as Resource Font are ignored after server restart

Fonts included as Resource Font in the project were no longer displayed after a server restart. Only after editing the theming file (`<ProjectName>.theme`) again the fonts were displayed correctly again. This error has been fixed.

Bug fix for "Forgot password" function

A critical security issue connected to the "Forgot password" function has been fixed.

1.5 X4 Activities Classic

A critical security issue connected to the "Forgot password" function has been fixed.

2 Release Notes 6.3.0

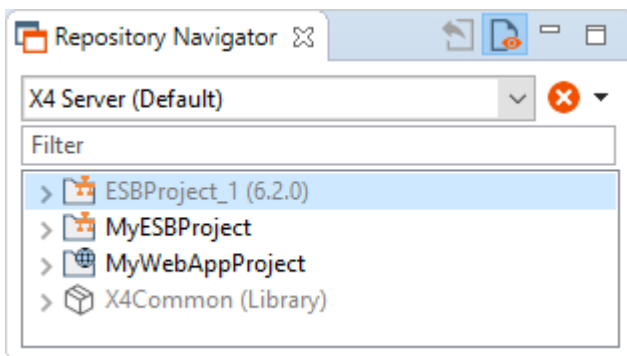
- New X4 Designer Functions
- X4 Activities Web Apps: Neue Funktionen und Änderungen
- Neue und geänderte Adapter
- Plattform-Updates
- Security
- Fehlerbehebungen


2.1 New X4 Designer Functions

2.1.1 Usability Improvements in X4 Designer

2.1.1.1 Migration of Outdated Projects

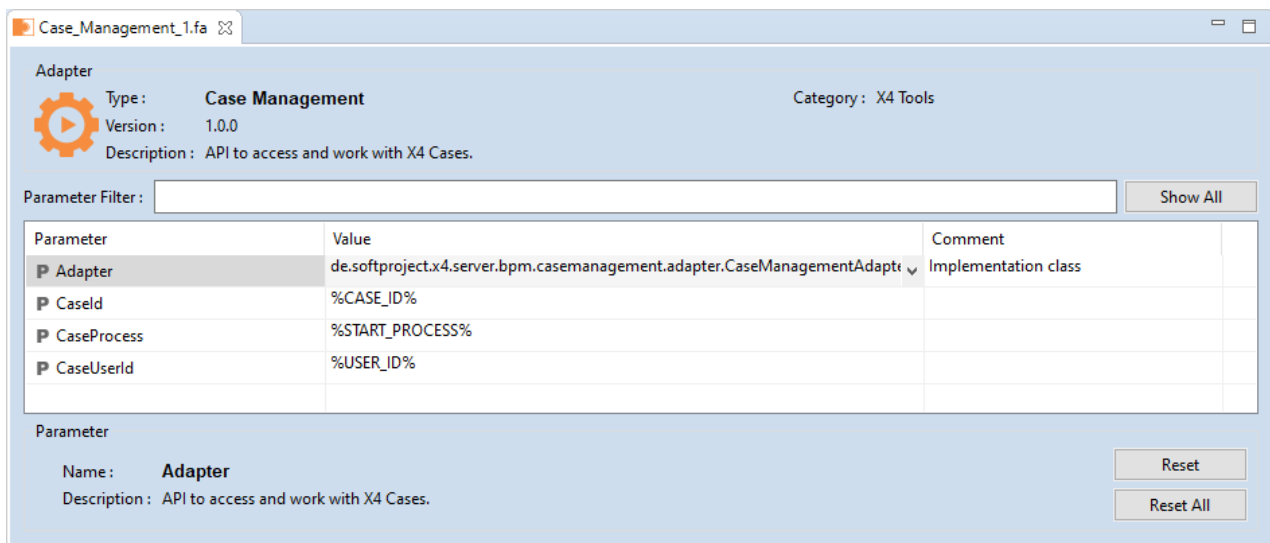
Projects older than the current X4 Suite version are specially marked within the Repository Navigator and can be migrated to the current version via the context menu **Migrate Project** or the menu **Project > Migrate Project**.



-  Outdated projects can be migrated automatically to the current X4 Suite version beginning with X4 Suite version 6.0.
Projects with a version older than 6.0 must first be manually updated to version 6.0 and can then be migrated to the current version automatically.

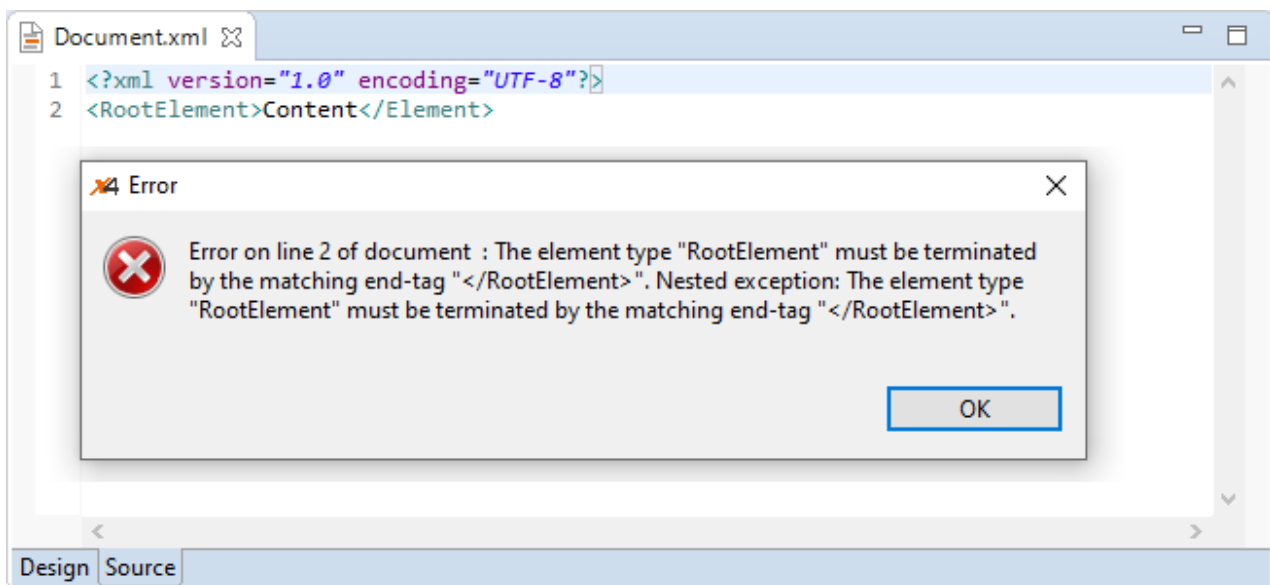
2.1.1.2 Adapter Editor Displays Adapter Category

The category of an adapter is now also displayed directly within the Adapter Editor and not only when the adapter is created.



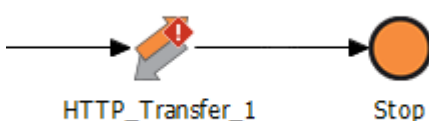
2.1.1.3 Improved XML Editor

The improved XML Editor now also allows opening invalid XML documents. To make troubleshooting easier, errors are displayed in a corresponding message.



2.1.1.4 Display of the Missing I/O Mode for Transfer Adapters


If no I/O Mode has been specified for transfer adapters (Property Not assigned), the component is now marked with an exclamation mark within the process diagram.

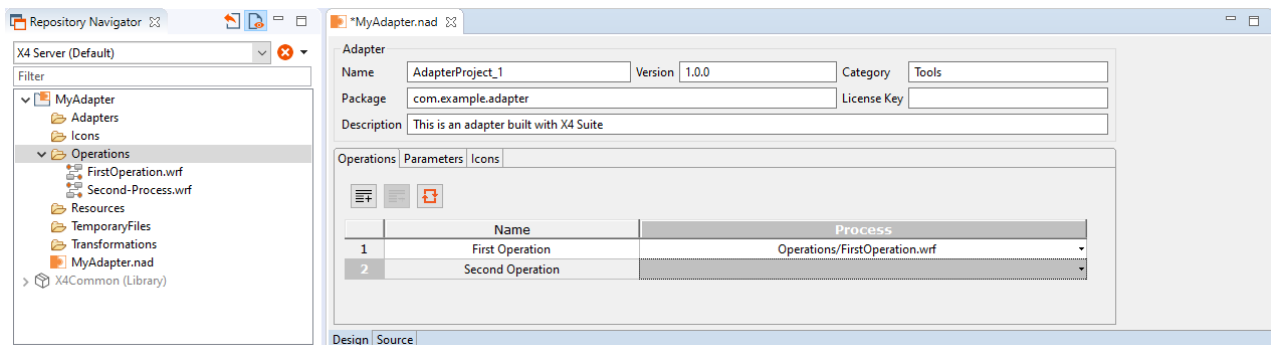


2.1.1.5 New Property Root Element for Merge Component

The new property Root Element of the Merge component allows the name of the root element containing the merged XML documents to be specified individually.

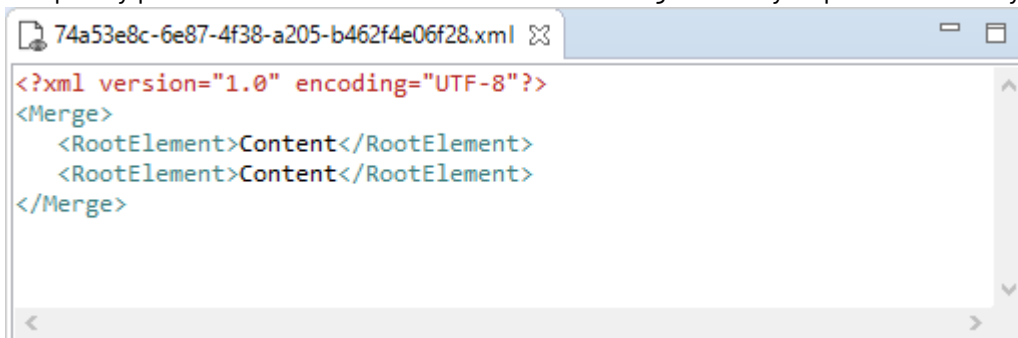
2.1.1.6 Refresh Button for Adapter Projects

A new refresh button  allows newly created processes to be provided immediately in order to be linked to an operation. Moreover, icons can also be updated via a refresh button.



2.1.1.7 New Preview Editor



With the current X4 Suite version, the Preview Editor has been replaced. Offering syntax highlighting and pretty print functions the new Preview Editor significantly improves usability.

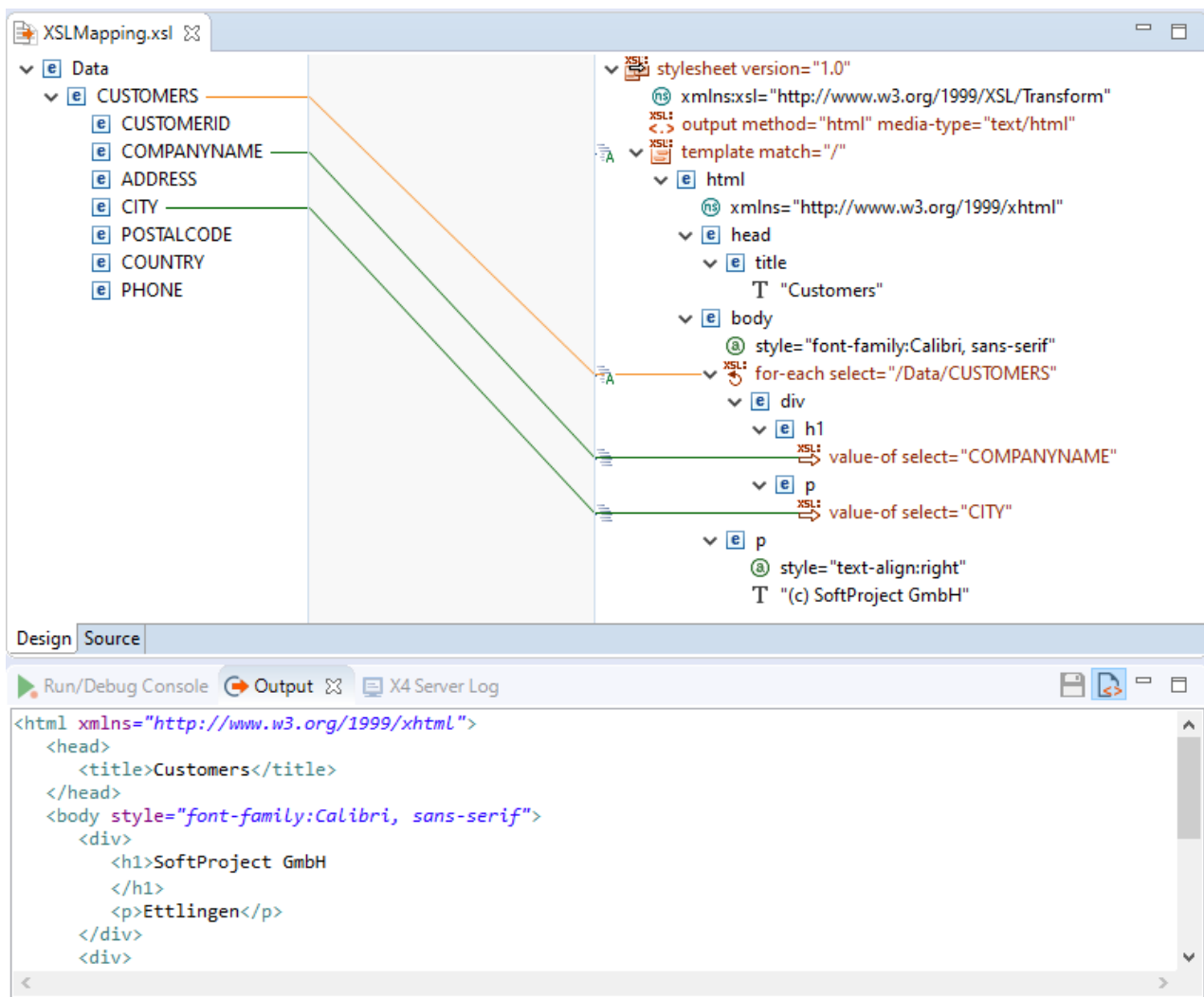


2.1.1.8 Improved Preview for XSL Transformations

The preview of the Mapping Editor has been replaced by the general Output view. This allows to display transformation results that contain larger data such as Base64 strings.

The following additional actions can be performed via the toolbar:

-  *Save content of output view:* Save data from the Output view
-  *Format the content of the output view:* Format data from the Output view

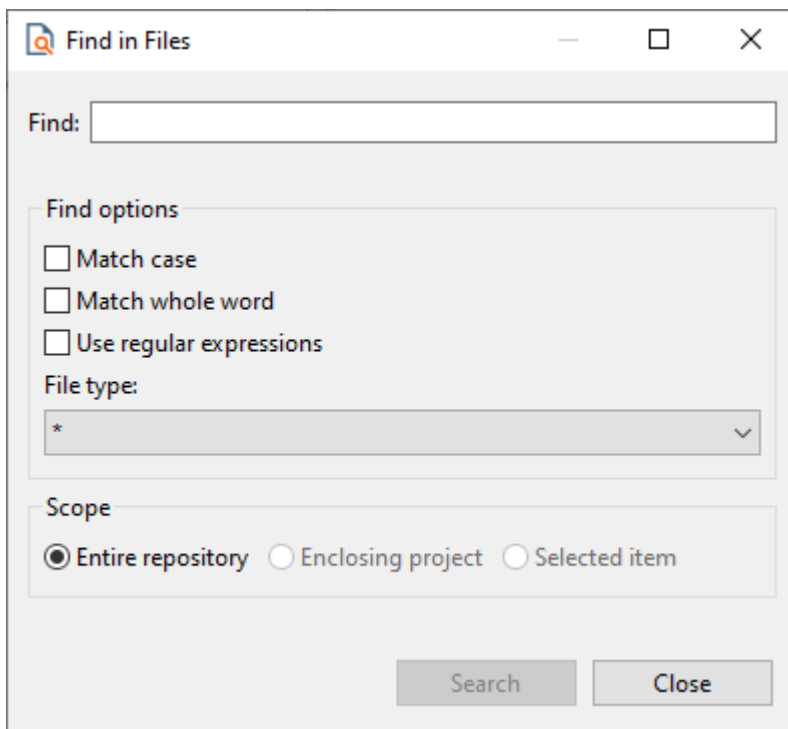


2.1.1.9 Handling X4 Processing Instructions

X4 Processing Instructions are now deleted from the mapping result by default. This behavior can be changed via the Mapping component's property `Remove X4 Processing Instructions`.

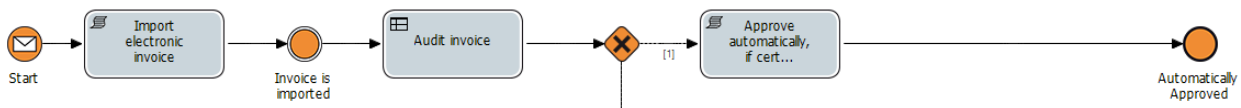
2.1.1.10 New Function Find in Files

The new **Find in Files** function allows searching for text, UTF-8 symbols and regular expressions within selected items, a single project or the entire X4 Repository.



2.1.1.11 Labels of Activity Components

Labels of Activity components can now also be displayed in three lines. Labels longer than three lines are abbreviated with



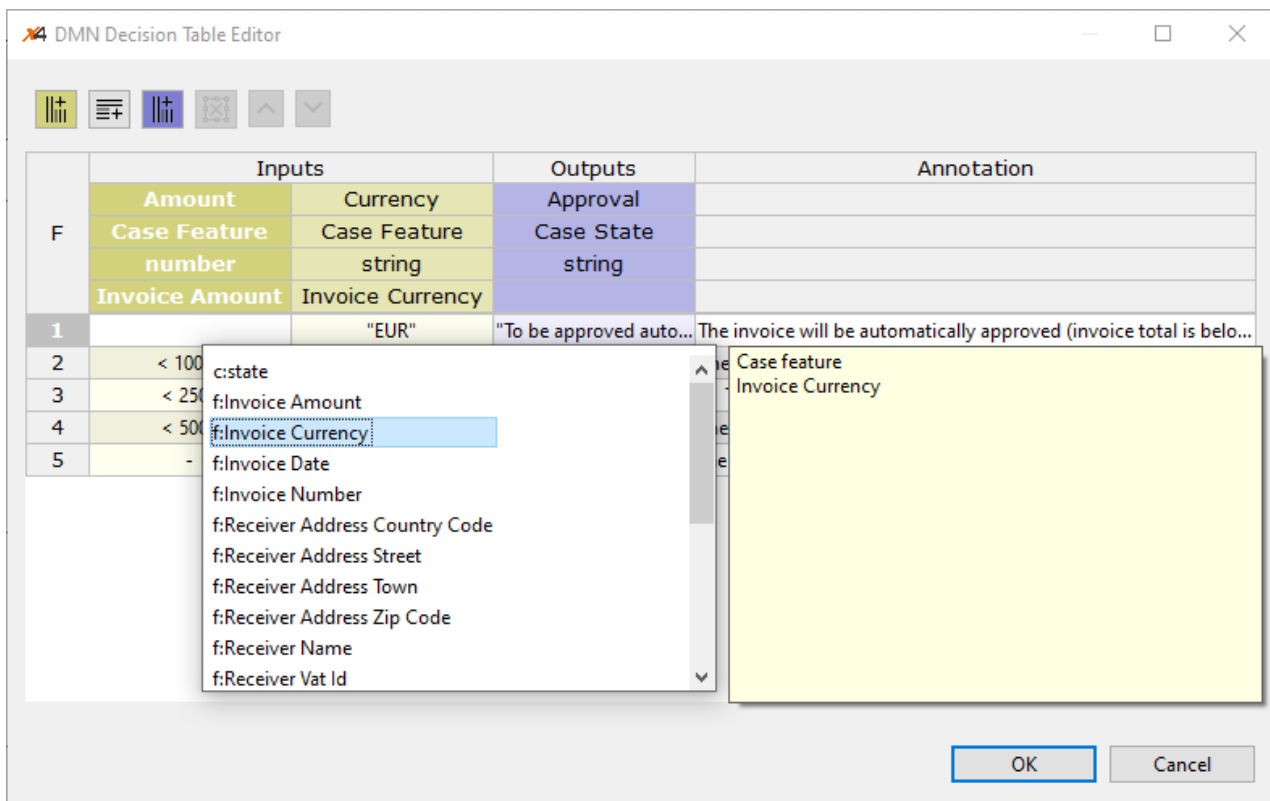
2.1.1.12 Automatically Filled Labels for Linked Components

For process components for which no label has been entered but which are linked to a resource, the name of the linked resource is automatically taken over as label. This affects all process components in the Process Editor, BPMN Editor and Process Landscape Editor that can be linked to a resource.

2.1.2 Extended Rule Component

The Rule component also allows variables, features, custom placeholders or case states to be used as SFEEL expression. This allows to build decision tables with complex logic based on data that changes dynamically.

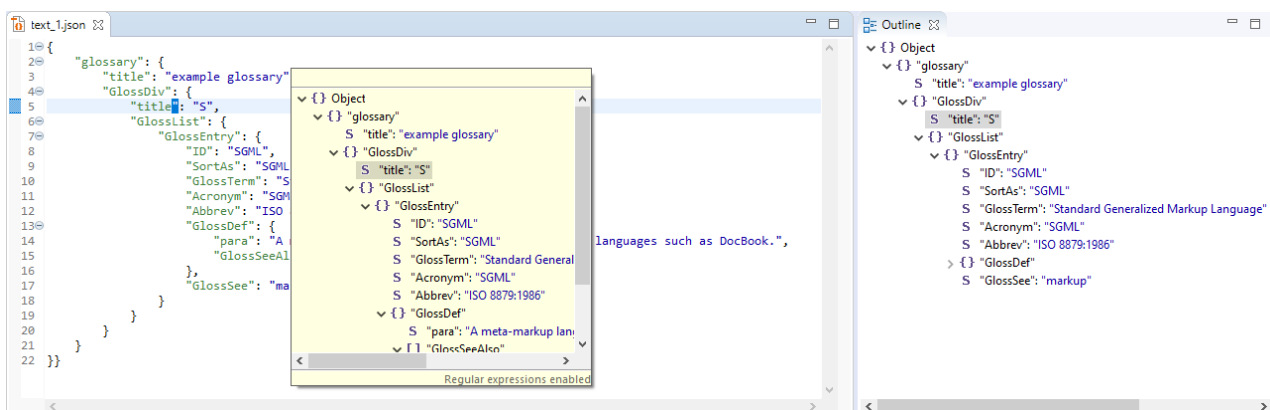
By pressing the shortcut **Ctrl + Space** in the rule area, all currently available variables (*v:Variablename*), features (*f:Featurename*), custom placeholders (*p:Placeholdername*) and case states (*c:CaseState*) are displayed in a drop-down list.



2.1.3 New JSON Editor

X4 Suite now also has a JSON Editor, which allows JSON documents to be edited directly within X4 Designer.

The **Outline** view displays the structure of the opened JSON document. Moreover, the context menu **Quick Outline** or the key combination CTRL+O opens the Quick Outline View where a search for keys and values within the JSON document can be performed.

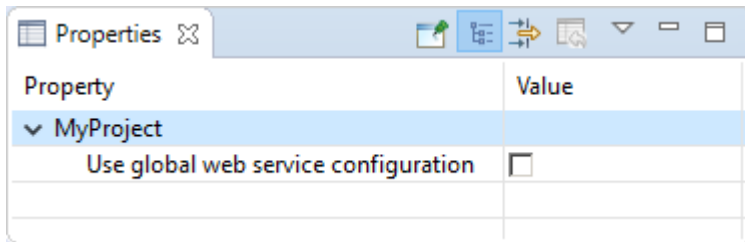


Moreover, X4 Designer allows to create JSON documents. There are several options available for this purpose:

- via the menu **Project > Add JSON Document**
- via the context menu **New > JSON Document**
- via the menu **New > Add JSON document**

2.1.4 Web Service Provision

Web services provided in ESB or BPM projects are now provided without being included in the `restconfig.xml`. This is the default behavior for projects created with X4 Suite version 6.3.0. Deployment as a web service can be controlled for both ESB and BPM projects using the new project property `Use global web service configuration`.

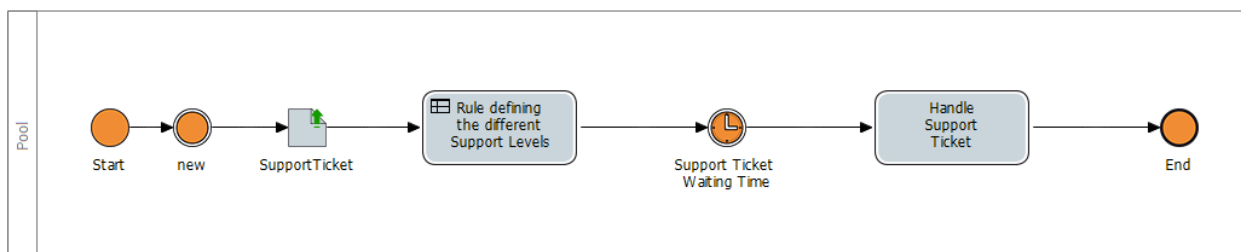


i The `restconfig.xml` is no longer available by default in new installations and is only created under `<X4>\Server\X4DB\0`, if a web service is defined.

2.1.5 New Timer-based Intermediate Event

The newly introduced event allows timer-based intermediate events to be defined in a business process according to the BPMN 2.0 standard.

Support Ticket Processing



The property `Duration` is used to specify the waiting time until the event occurs. The waiting time configuration is done in a separate dialog. As an alternative to a duration, an end time can be specified using `Until`.


- ✓ Timer-based events can also be configured dynamically using technical processes and a corresponding mapping. The corresponding process is created and managed via the timer-based intermediate event. It is created directly under the corresponding BPM process and cannot be moved.

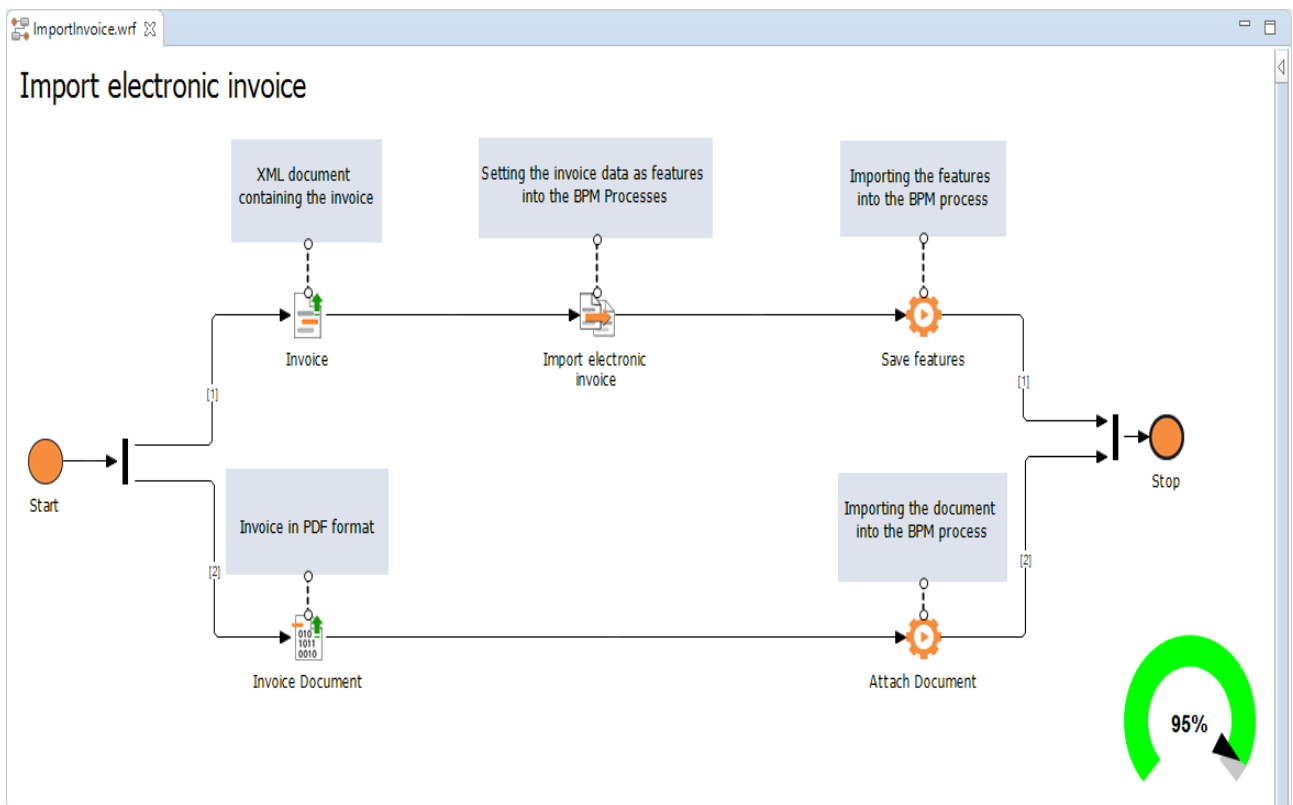
⚠ Note the following changes!

- Already existing Timer-based Intermediate Events are reset to the default Intermediate Event when the X4 Suite is updated and migrated accordingly.
- Other event components can no longer be set to the Timer-based Intermediate Event type.
- The Changes do not affect the freeflow mode.

2.1.6 Process Quality Index

Über das Icon *Show Process Quality Index* kann das PQI-Diagramm auf der Zeichnungsfläche des Prozess Editors ein- und ausgeblendet werden.

The Process Quality Index allows the quality of the modelled process to be measured by means of various evaluation criteria. Using the icon *Show Process Quality Index*  the PQI diagram can be displayed or hidden on the Process Editor's drawing area.

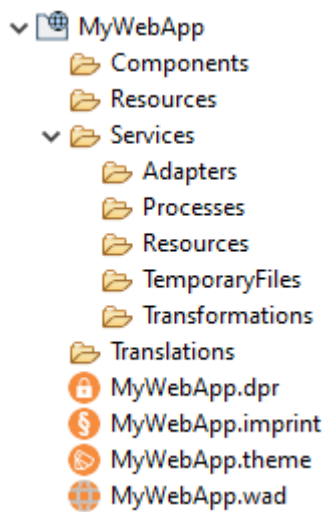


2.2 New Functions and Changes in X4 Activities Web Apps

2.2.1 Separate Definition Files for Components

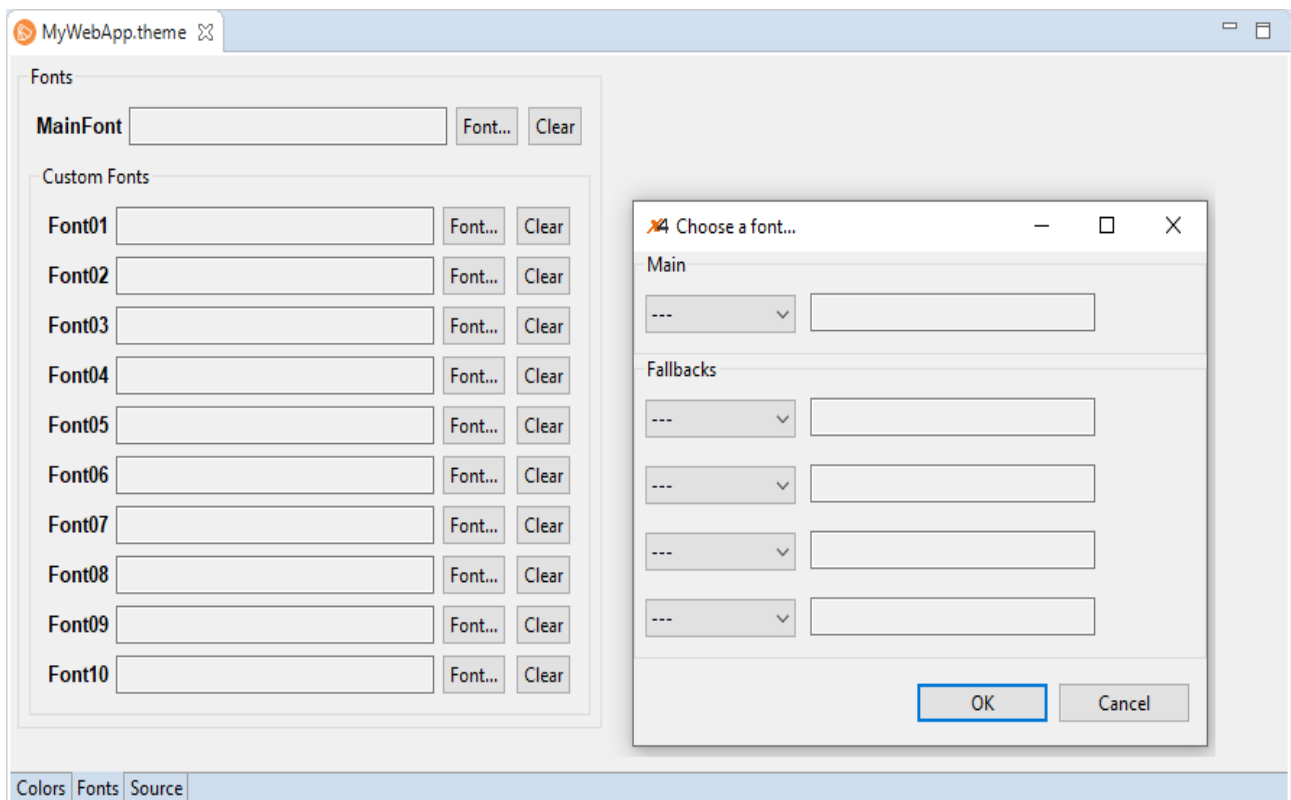
With the current X4 Suite version, a separate definition file can be created for each individual component of a web app. The individual definition files are then referenced in the project definition file .wad. This facilitates the reuse of individual components and even project definitions for complex projects remain clear.

The separate definition files can be created in the Components folder. The folder is created automatically with each new Web Apps project and may only contain definitions for the single components of a Web App.



2.2.2 Custom Web App Fonts

Web Apps can now be adapted to the corporate identity of a company even better by using custom fonts. Fonts can be defined for the complete Web application (as MainFont) as well as for single Layouts, Components, Controls and Actions.



2.2.3 Public Access to Web Apps

Using the new attribute `publicAccess`, Web apps can now be made available to the public without the need to log in to the respective application.

2.2.4 Hiding the Header and Footer in Web Apps

In web applications based on X4 Activities Web Apps, headers and footers can now be hidden.

2.2.5 Custom Titles for Web App Dialogs

It is now possible to assign an optional title to dialogs, which can be used to briefly describe the dialog contents.

Integrated Icon Library for Use in Web Applications

X4 Activities Web Apps now allows using icons from an integrated icon library. This makes it much easier to use icons in web applications. This new feature is available wherever icons can be defined using the attributes `iconURL`, `Icon` or `logoURL`, for example in modules, components, controls and actions. Moreover, the attributes `IconCoLoR` or `logoCoLoR` can be used to define the icon's color.

2.2.6 Messages Based on Validations

It is now possible to define corresponding messages for single validation rules. The messages are defined within the element `Message` using the element `Validation`, see also documentation *X4 Activities Web Apps: Datenmodell und Properties-Definition*.

```
<Property name="test" type="Integer">
  <Validations>
    <Validation>
      <Value operator="eq" expected="0" />
      <Message>The entered value is not correct.</Message>
    </Validation>
  </Validations>
</Property>
```

2.2.7 Intelligent Renaming/Refactoring

When renaming/refactoring resources, Web App projects not only rename the corresponding resources, but also adapt the respective references to processes, resources or components.

2.2.8 Adjustable Menu Width in Web Applications

The menu width of a web application can now be defined within the `.wad` file using the following attributes of the `<Menu>` element:

- `width`: Menu width (any integer | auto)
- `unit`: Unit of the specified width (pixels | percents)


2.2.9 New Functions within the List Component

2.2.9.1 Images within the List Component

A new property type `Image` is now available. Moreover, the `Image` control no longer supports the attribute `resourceUrl`, only the attribute `value` is supported. For List components the new column type `ImageColumn` is now available allowing to display images. With these changes, images can now be loaded dynamically and from external resources.

2.2.9.2 Display of Date and Time Specifications within the List Component

There is a new property type `Date`, which contains only a date specification without time or time zone. The previous property type `DateTime` now allows in the List component also the time to be displayed in addition to the date.

 The processing of the property type `DateTime` was adapted with version 6.3. For all previous entries of the property type `DateTime`, not only the date but also the time is displayed as of version 6.3!

2.2.9.3 Custom Paging Size for List Components

The number of elements that are loaded into the list component at once can now be adjusted with the new element `pageSize`.

2.2.10 Event-based Reload of Components

Using the new reload action, users of a Web application can be actively informed of status changes and can therefore initiate actions in the frontend based on the status changes.

The action is implemented using the element `<ReloadAction/>` and has the effect that the properties of a component are reloaded periodically via a defined process or that navigation is triggered.

2.2.11 New Functions within Actions

2.2.11.1 Tooltips for Actions

Action buttons can now display tooltips, too.

2.2.11.2 Validation for Custom Actions


With the new attribute `validated` custom action now also allow to validate the input. The attribute `validated` is set to `false` by default, which means that no validation is performed. Thus,

the button remains enabled even if the validation of the input fails. If the value of `validated` is set to `true` the button will be disabled, if a validation fails.

2.2.11.3 Actions: Attribute `disabled` replaced by `enabled`

The new attribute `enabled` replaces the deprecated attribute `disabled`. Thus, `enabled="true"` corresponds to the deprecated attribute `disabled="false"`.

If the attribute `disabled` is used for defining an action or a control element, a corresponding note is output in the Server log.

 The attribute `disabled` will be removed with version 7.0.0 of X4 Suite and is therefore no longer available.

2.2.11.4 Custom Colors for Controls and Actions

Controls and actions can now be given custom foreground and background colors. Hexadecimal color values and color codes from the Web App color scheme can be used therefore.

2.2.11.5 "Select" Action also Available for Controls

Actions (`SelectAction`) can now also be triggered as soon as an entry is selected from one of the following controls:

- `ComboBox`
- `Radio-Button`
- `Checkbox`
- `ListView`
- `Image`
- `Maps`

2.2.12 Improved Usability for Overlays

If an overlay is opened in a web application, the web app in the background is displayed slightly blurred. This improves the usability since the user only concentrates on the essential contents.

2.2.13 Initial Zoom Level in Map Controls

The new attribute `zoomLevel` available for the `<Map>` element allows to specify the initial zoom level of a map control.

2.2.14 New Attribute for External Links


The new attribute `externalLinkTarget` now allows to define how external links in custom actions, select actions and Maps are opened.

The following values can be specified for `externalLinkTarget`:

- same: The link is opened within the same tab
- new: The link is opened in a new tab

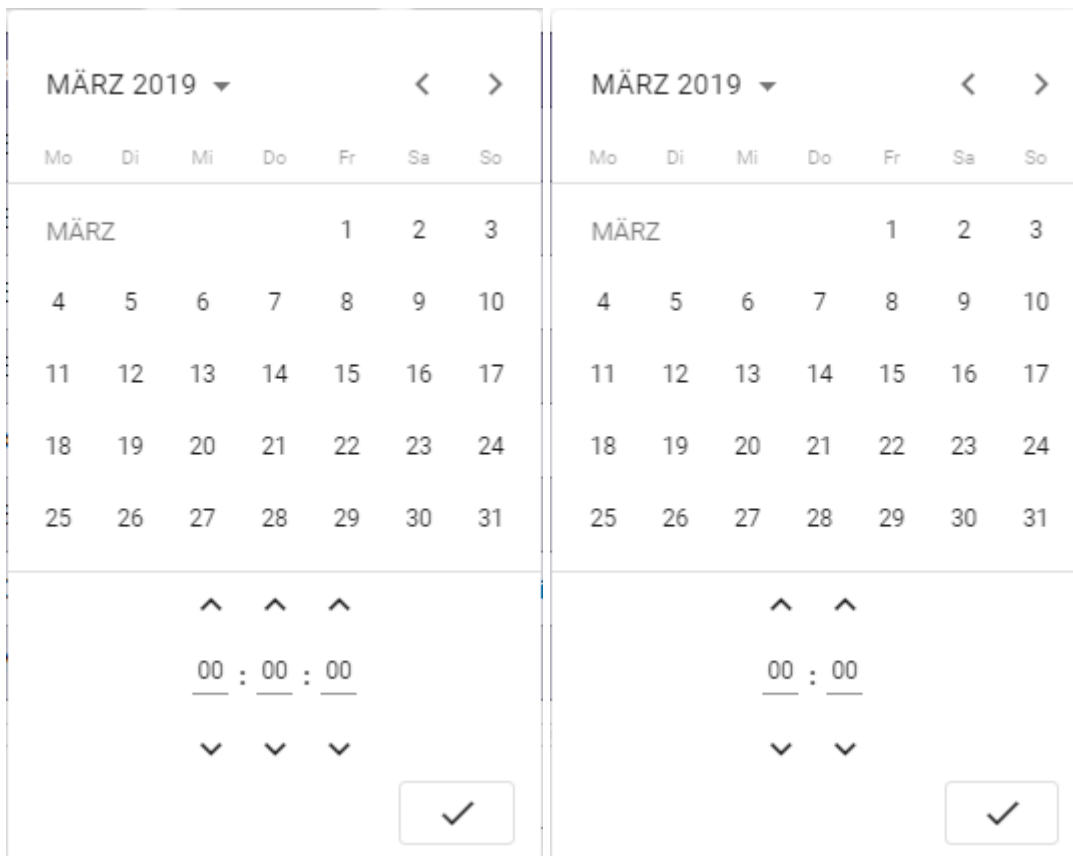
2.2.15 Applications with Multiple Modules

Web applications can now contain multiple modules, which are displayed in the application's header area.

However, only the first four modules are displayed in the interface. If more than four modules have been defined, they can be displayed and selected via the submenu .

2.2.16 New Attribute for Text Boxes

The new attribute `showSeconds` now allows to specify whether text boxes of the type `datetime` also display seconds in the date/time picker.



The image shows two side-by-side date/time picker interfaces. Both pickers are for the month of MÄRZ 2019. The left picker displays the date, time, and seconds (00 : 00 : 00). The right picker displays the date and time (00 : 00) but omits the seconds. Both pickers have a calendar view with days of the week (Mo, Di, Mi, Do, Fr, Sa, So) and a time selection area with up/down arrows and a confirmation button.

Date/Time picker with and without second display

2.2.17 New Functions within the Calendar Component

2.2.17.1 Improved Usability of the Calendar Component

Long titles of events within the calendar component are now displayed in several lines or as tooltips. The new attribute `externalLinkName` can also be used to specify a link name for external links that is displayed instead of the URL.

If an event contains a link, the mouse pointer also changes when the mouse is moved over the event.


2.2.17.2 External Links in Calendar Events

External links can now also be inserted within an event. These are implemented within the element `<EventConfiguration/>` using a `<SelectAction>`.

```
<EventConfiguration>
  <SelectAction externalLink="#event.link"/>
</EventConfiguration>
```

2.2.17.3 New Attribute for Event Configuration

If the calendar was placed within the master component of a master/detail component, until now, the detail view could not be accessed on mobile devices since it was opened by an external navigation link. If the event does not have an external navigation link, you can now navigate to the detailed view using a button. The attribute `detailLinkName` specifies the name of this button.

 The button is only displayed in the mobile view, if the calendar component is located within a master/detail component.

2.2.18 Tab Layout TabLayout Reintroduced

The formerly deprecated tab layout (`TabLayout`) can now be used again in components as well as within other layouts. All attributes available for layouts are thereby supported.

2.2.19 Defining Access Rights for Modules

It is now possible to define access rights within the `.wad` file for the single modules of a web app. can now also be defined.

In the first step, the access rights relevant for the application must be specified. The access rights can then be assigned to the individual modules. There are various ways of assigning them:

- As child element of `Module`

```
<Module>
  <AccessRights>
    <AccessRight name="Administrator"/>
  </AccessRights>
</Module>
```

- Directly within the element `Modules` using the attributes `accessRight` and `hideOnAccessDenied`

```
<Module displayName="Restricted Module" path="RestrictedModule" accessRight="Staff" hideOnAccessDenied="false">
  ...
</Module>
```

Which users or groups have which access rights is defined in the extended *X4 Web App Management*.

2.2.20 Access Rights Management via the X4 Web App Management

The X4 Web App Management has been extended and now allows to manage the access rights for the single web applications.

X4 Control Center Web Apps System Apps Hello, SP Admin

+ Add Edit Remove

Web Apps

Web App	Name	URL path	Project path	Active
WebAppPermission	My New Web App	WebAppPermission	1/WebAppPermission	✓

My New Web App

	Name	First name	Last name	Access rights
👤	Administrator	Max	Mustermann	Administrator, Customer, Staff
👤	StaffMember	Brigitte	Beispiel	Customer, Staff
👤	Customer	Andreas	Custom	Customer

2.2.21 New Translation Keys

The following values have been added to the list of standard translation keys:

New translation keys with the German values

```
backButton=Zurück  
componentNameNotDeclared = Der Komponentename in der Aktion ist nicht deklariert.  
forbiddenHeader = 403  
forbiddenText = Sie haben keine Berechtigung für den Zugriff. Wenden Sie sich an den  
Administrator.  
dataReloaded = Der ausgewählte Datensatz wurde im Hintergrund geändert. Die Seite  
wird neu geladen.  
languagesLabel=Sprachauswahl
```

2.3 New and Changed Adapters

2.3.1 New Adapters

2.3.1.1 AES Encryption

The AES Encryption adapter allows input data to be encrypted and decrypted using the AES encryption algorithm.

2.3.1.2 OPC UA Subscriber Adapter

The OPC UA Subscriber Adapter allows to connect to an OPC UA Server in order to subscribe and unsubscribe to data changes or events.

2.3.1.3 Google Drive Connector

The Google Drive Connector connects to the Google Drive cloud service and provides cloud storage data management functions.

2.3.1.4 AMQP Publisher

The AMQP Publisher allows to publish messages to an AMQP topic.

2.3.1.5 AMQP Subscriber

The AMQP Subscriber allows to manage subscriptions to an AMQP queue. Moreover, a technical process can be defined, which will be executed as soon as a message is received.

2.3.2 Changed Adapters

2.3.2.1 JDBC Connector

The root element of the JDBC Connector can now be specified with the new parameter `rootElementName`.

2.3.2.2 HTTP(S)Connector

The character encoding of the credentials can be specified with the new parameter `authenticationEncoding`.

2.3.2.3 LDAP Connector

The LDAP Connector has been extended, now allowing the connection to the LDAP server to also be established via LDAP Secure. This enables the Secure Lightweight Directory Access Protocol to be enabled for domains managed via Active Directory and allows communication via SSL/TLS (Secure Sockets Layer/Transport Layer Security).

The configuration for LDAP Secure with self-signed certificates can be made in the configuration file `X4config.xml`, see [LDAPS Configuration](#).

2.3.2.4 User Identity Adapter

The User Identity Adapter has been extended by the parameter `timezone`. It allows to define the user timezone, which is used if the parameter `debug` is enabled. The timezone is specified according to [ISO 8601 duration format](#) (e.g. `PT5H`). The adapter output contains the following additional information regarding the timezone:

```
<Timezone>
  <Offset>PT5H</Offset>
</Timezone>
```

2.3.2.5 POP/SMTP

The POP/SMTP adapter now also allows to specify the name of the corresponding sender and receiver for the adapter parameters `from`, `sender`, `to`, `cc`, and `bcc` following the pattern `max.mustermann@softproject.de` (*Max Mustermann*).

2.3.2.6 XML Validation

The adapter XML Validation has been extended by the parameter `Verbose`. It allows to specify whether the result document should contain detailed information on the validation error. The following values are thereby possible:

- `true`: The result document contains detailed information on the validation error (default)
- `false`: The adapter stops validation after the first error and doesn't output any information on the error

2.3.2.7 Custom Placeholder Storage Manager

The adapter Custom Placeholder Storage Manager has been extended by a new operation `Refresh`, which allows to reload placeholders from the database.

2.3.3 Adapter Renaming

2.3.3.1 OPC UA Publisher Adapter

The OPC UA Client Adapter has been renamed to OPC UA Publisher Adapter.

2.4 Platform Updates

2.4.1 New X4 Server Installation Packages

2.4.1.1 Ubuntu/Debian Linux

A new X4 Server installation package `X4-Server_Ubuntu-6.3.0-1.x86_64.deb` is now provided for Ubuntu/Debian systems. During the update process all configuration files beginning with version 6.0.0 of the X4 Suite are automatically migrated to the current version. Moreover, the configuration files are automatically saved under `/opt/X4_backups` (previously `/opt/X4/backup`).

2.4.1.2 Red Hat Enterprise Linux

A new X4 Server installation package `X4-Server_RHEL-6.3.0-1.x86_64.rpm` is now provided for Red Hat Enterprise Linux systems. During the update process all configuration files beginning with version 6.0.0 of the X4 Suite are automatically migrated to the current version. Moreover, the configuration files are automatically saved under `/opt/X4_backups`.

2.4.1.3 SuSe Linux

A new X4 Server installation package `X4-Server_SLES-v.v.v-r.x86_64.rpm` is now provided for SuSe Linux systems. During the update process all configuration files beginning with version 6.1.0 of the X4 Suite are automatically migrated to the current version. Moreover, the configuration files are automatically saved under `/opt/X4_backups`.

The migration for versions 6.0.x has to be performed manually by running the provided migration tool.

2.4.1.4 Windows

A new X4 Server installation package `X4ServerSetup_Rv.v.v_64bit.msi` is now provided for Windows system. It allows important configurations regarding the system database, the X4 Server and the network to be made already during the installation. During the update process all configuration files beginning with version 6.3.0 of the X4 Suite are automatically migrated to the current version. Moreover, the configuration files are automatically saved under `<X4Installation>/X4_Backup`.

The migration for versions 6.0.x, 6.1.0 and 6.2.0 has to be performed manually by running the provided migration tool.

2.5 Security

Our development and support team uses AdoptOpenJDK to develop and test the features. However, X4 Server also runs under other distributions of OpenJDK. If errors occur due to a problem in the Java distribution, please contact the Java distributor for troubleshooting.

To ensure the highest possible security, X4 Server 6.3 is provided with integrated WildFly 18.0.0 and AdoptOpenJDK 11.

Previous versions were provided with the following WildFly and Java versions.

X4 Server Version	Supported WildFly Version	Supported Java Versions
X4 Server 5.5	WildFly 10.1.0	Oracle JRE / JDK 1.8
X4 Server 6.0	WildFly 14.0.1	OpenJDK 11 / JDK 11 LTS
X4 Server 6.1	WildFly 16.0.0	OpenJDK 12 / JDK 11 LTS
X4 Server 6.2	WildFly 18.0.0	OpenJDK 13 / JDK 11 LTS
X4 Server 6.3	WildFly 18.0.0	AdoptOpenJDK 11 / JDK 11 LTS

2.6 Bug Fixes

The following bugs have been fixed with X4 Suite version 6.3.0:

2.6.1 X4 Adapter

Performance improvement in Excel Reader

There was a performance improvement when processing MS Excel files with the *Excel Reader*.

Bug fix in HTTP(S) Connector

In the *HTTP(S) Connector* an error was fixed, which occurred while evaluating the port. The port information is now correctly added to the HTTP header according to RFC7230.

Bug fixes when using custom adapters

- Adapters created within adapter projects in X4 Suite versions 6.0 and 6.1 could not be used in X4 Suite version 6.2.0. This error has been fixed.
- If custom adapters contained the string json in their name, they were not displayed in the list of available adapters after being deployed as a module. This error has been fixed.

Bug fix within Inline Content Expander

- The Operation Expand previously caused an error in the Inline Content Expander if the input document contained base64 data with spaces. This error has been fixed.
- If an error occurs, the Inline Content Expander now displays the status -1 instead of 0.

Wrong error message when using custom adapters

If an adapter was both provided as an adapter on the X4 Server and also existed as adapter project in the X4 Repository at the same time, an invalid license error message was previously displayed. Now a corresponding error message is displayed within X4 Designer.

Case Management adapter outputs empty Feature elements

The Case Management adapter no longer outputs empty Feature elements in the output XML.

File System ignores round brackets while filtering

The File System adapter previously ignored round brackets when filtering by files (parameter `filter`). You can now also filter for files that contain round brackets in their names.

JSON Validation outputs error instead of validation result

The JSON Validation adapter issued an error message instead of a validation result. This error has been fixed.

Error within Structured Text Converter

The slash (/) in the path specification (parameter `DescFile`) of the Structured Text Converter was resolved incorrectly and an error occurred. Now the slash is interpreted correctly. Moreover, double slashes (//) in the path specification are reduced to a single slash.

Error within HTTP(S) Connector

In the HTTP(S) Connector there was a problem with connecting via the HTTPS protocol. This error has been fixed.

Error within Task Management adapter

The Task Management adapter now also works in ReST web services.

2.6.2 X4 Designer

Error when moving BPM components

When moving several selected BPM components via drag & drop into a pool/lane in the BPM Editor, only one element was moved to the desired position. This error has been fixed.

Missing process name in validation report

When validating ESB projects, the name of the corresponding process was not output in case of an incorrect process. Now, the process name is output as usual.

Bug fix in BPMN sample project

In the BPMN sample project *Approve electronic invoices*, an error was fixed, which occurred when setting the case states.

Bug fixed within the View Call Hierarchy

- The function **View Call Hierarchy** is now available again for displayed results within the View Call Hierarchy view.
- The function **View Call Hierarchy** has been extended to processes originating from process libraries.

Undo/Redo not available for processes

The function Undo/Redo within the X4 Designer's toolbar is now available for all processes.

Files cannot be moved to Project/Resources folder

Until now, within Web Apps projects, only image files could be moved to the Project/Resources folder via drag & drop. Now the folder can also contain text (.txt) and XML (.xml) files.

Adapter context menu outputs error

When opening the context menu **New > Adapter** on a selected adapter, now no error is output and the new adapter can be created as expected.

Error when importing BPM projects

Now, BPM projects can be imported as usual using the *BPMN 2.0 Import Wizard*.

Error when importing BPM processes

When using the Import BPMN 2.0 Process function, process metadata was lost after the import if the imported process was created with a third-party modeling tool. This error has been fixed.

Tasks are not displayed in the Task Management Web App

When defining business data of type DateTime, the corresponding task was not displayed in the Task Management Web App. This error has been fixed.

Error while excluding and including imported files

The context menu **Exclude from project** was not available for files that were imported into the Project / Resources folder of a Web app project via the file system. Moreover, already excluded files could not be included again. This error has been fixed.

Processes provided as web service are changed in the ReST configuration after being copied

When copying processes that were provided as web services, the entry for the original process was changed in the ReST configuration after the copied process was renamed. This error has been fixed.

Process validation based on user-defined rules causes error

When using the **Validate Project** function, an error occurred if the validation was based on own validation rules. This error has been fixed.

Lanes can be moved outside the Pool

An error in the BPMN Editor which occurred when moving lanes within a pool has been fixed.

Display error in the Mapping Editor's design view

When editing mappings in the Mapping Editor's design view, the interface occasionally crashed and then displayed errors. However, the mapping could be still edited and saved in the source view. Now the design view works as usual.

Button "New" within the toolbar only creates processes

The button **New** within the toolbar now also allows to create new projects, processes and resources. The options available depend on the selected folder level in the Repository Navigator.

Processes from a process library can not be copied or pasted

Processes originating from a process library could not be copied into projects and thus reused. This error has been fixed.

Improved error message for naming conflicts in projects and libraries

When additionally providing a project existing in the X4DB as a library, a cryptic error message was previously issued. Now a more understandable message is displayed in the X4 Designer.

Wrong arrangement of layout elements

A problem with the arrangement of layout elements in business processes (.bpm), Integration Flows (.wrf) and process landscapes (.pld) has been fixed.

Condition components can be directly linked with Stop components

Condition components can no longer be directly linked with Stop components.

Creating web service configuration files at the wrong project level

Web service configuration files (.wsinc) can now only be created at the highest project level within BPM projects.

Output view does not display special characters correctly

In the Output view, umlauts and other special characters are now displayed correctly.

Inconsistent display of license information

The license information displayed in the X4 Server and X4 Designer has now been unified.

Human Tasks and Rules can be linked to multiple components

The BPM activity components Human Task and Rule could previously be linked to several components, which did not comply with the prescribed procedure. This error has been fixed.

Folder names ending on .wrf or .bpm have a wrong icon in the Repository Navigator

Folder names ending on .wrf or .bpm were displayed with a process icon within the Repository Navigator. Folder names with a .wrf or .bpm extension are no longer allowed. Moreover, folders with these extensions are excluded from the Repository when they are inserted via the file system, for example.

X4 Server Log view is not updated

If the connection between X4 Designer and X4 Server is disconnected, a corresponding message is now displayed in the X4 Server Log view within the X4 Designer. When reconnecting to the X4 Server, the X4 Server Log is displayed as usual.

Files in the file system are overwritten

If open files in the X4 Designer were changed in the file system at the same time, no message was displayed in X4 Designer until now. This meant that the files in the file system were overwritten after being saved within X4 Designer. Now a corresponding message is displayed so that the user can decide whether he wants to overwrite the file in the file system or to update the open file by discarding the changes in X4 Designer.

SOAP Web services cannot be generated from WSDL

SOAP Web services can now be generated from a WSDL definition as expected.

Debug error for JSON files of the type array

If a process contained JSON files with `type="array"`, an error was previously displayed in the Output view in debug mode because the JSON object could not be parsed. Now the error is caught and the intermediate result is displayed as text.

2.6.3 X4 Server

Deprecated JDBC database driver

The database driver for PostgreSQL has been updated to version 42.28.

Performance improvements

- There were performance improvements when reading large files.
- Creating files in large projects is now faster.

Missing Secure cookie

The Secure option got lost for the X4 Token Cookie. This error has been fixed.

Migration tool errors

- When migrating X4 Server from version 5.5.x to version 6.1. or 6.2, the database table `CASE_DOCUMENTS` got lost. This error has been fixed.
- After the migration the `User_ID`, `Group_ID` and `Role_ID` were reset, which caused conflicts when creating new users, groups and roles in the user management. This error has been fixed.
- When updating directly from version 5.x to version 6.2.0, in some cases a problem occurred when running the migration tool. To avoid this error, the migration tool for version 6.0.5 should be executed first and then the migration tool for version 6.2.0.
- If a project contained a folder named `Theme`, the corresponding project could no longer be migrated. This error has been fixed.
- After migrating projects created with version 5.x to version 6.x, warnings were displayed in the server log if the migrated processes contained a *Custom Placeholder Initializer* adapter. This error has been fixed.
- Projects that contained the *Text Replacement* Adapter were not migrated properly when updating to a newer version. This error has been fixed.

Deprecated S7 Connector library

The library used for the S7 Connector has been updated to version 2.1.

Error when using outdated adapter definition files in adapter projects

If outdated adapter definition files were used in adapter projects, the newly created adapter could not be packaged afterwards and no corresponding error message was displayed. All outdated or invalid resources are now displayed in the X4 Server Log.

Server doesn't start, if projects contain resources with invalid names

Until now, X4 Server could no longer be started if projects contained resources with invalid names, and a misleading error message was displayed in the server log. Now X4 Server can be started as usual. All resources with invalid names are no longer displayed in the Repository and are listed in the server log.

Web service runs process although max-post-size was exceeded

If a POST request was made with a file larger than allowed – default value for `max-post-size` is 10 MB in `WilFly` – the corresponding process was executed anyway using the input mode `HTTP-MetaXML`. This error has been fixed.

Projects with dynamic Human Task configurations can't be provided as module

BPM projects with dynamic human task configurations can now be provided as a module as expected.

Web apps projects provided as process library cannot be opened

Web apps projects provided as process library within X4 Designer could only be opened in a browser after a Server restart. This error has been fixed.

iXmap in XSLT mappings replaced by processing instructions

Within the `X4Common` library, the use of `iXmap` for dynamic parameterization in XSLT mappings has been replaced by the use of processing instructions.

Rule component cannot check for empty strings

Until now, the rule component was not able to check for empty strings within a case feature. This error has been fixed.

Error when using SQL Named Prepared Statements of the type BLOB

SQL Named Prepared Statements of type `BLOB` used to produce an error if the input was a chunked Base64 string. This error has been fixed.

2.6.4 X4 Activities Web Apps

Performance improvement in ListView control

There were performance improvements when processing large amounts of data in conjunction with `ListView` controls.

Bug fixes in Card control

- A problem occurring when rendering card controls has been fixed.
- Breaks are now set correctly in titles and subtitles of a Card control.
- Now, when the Card control is resized a scroll bar is provided in order to display content that does not fully fit into the element.
- Icons of actions within a card control are now scaled correctly.
- When using card controls in a flow or grid layout, the first card element could not be controlled via properties. This error has been fixed.

- The attribute `disabled` was not considered in card controls or in `Select` actions within the card element. The attribute `enabled` now replaces the deprecated attribute `disabled`. `enabled="true"` thus corresponds to the deprecated attribute `disabled="false"`.
- The `File Upload` control and the `UploadAction` action can now be used as usual in the card control.
- Actions in Card controls that are used within a `ListView` control now work as usual again.
- Card controls within the Master component of a Master/Detail component are now displayed correctly.
- A display error that occurred under iOS and was related to the use of the Card control in a List component has been fixed.
- Scroll bars in Card controls are now displayed as expected

Incorrect display of the imprint

In certain cases the imprint was not displayed correctly. This error has been fixed.

Multiple input of decimal separators

When using text boxes of the type number, multiple decimal separators could be entered. This error has been fixed.

Improvements in the mobile view

- Display names of `Select` actions are displayed with an ellipse in the mobile view of web applications, if the name exceeds the available space.
- An error has been fixed, which occurred when displaying too large logos on Android devices.
- All actions within overlay structural elements are now displayed as expected.
- When displaying images, the scroll bar is now displayed next to the image and not on the images as before.
- The zoom function can now also be fully used on mobile devices.
- Scrollbars are now displayed as expected in all supported browsers.

Bug fixes concerning validation

- An error in the validation of radio buttons has been fixed.
- The validation for Web apps project has been improved. Any violation of validation rules is now displayed in an error message in X4 Designer when trying to save the Web app.

Bug fixes in the List component

- An error with list components within tab layouts that occurred in combination with overlay structural elements has been fixed.
- When using the list component in a master element, the list view displayed more rows than the process delivered as response. This error has been fixed.
- When using comments within the `response.xml` returned by a list component, an error was previously output in the server log This error has been fixed.

Bug fixes within the TextBox control

- An error in the validation of text boxes of the type `datetime` has been fixed.
- For text boxes of the type date the date could be cleared although the text box was enabled. This error has been fixed.

- An error occurred when entering exponential values in TextBoxes of type number, so that the values could not be entered completely. This error has been fixed.
- When using the simplified data model *Simple Data Transport*, multiline texts within a TextBox control were not displayed correctly. This error has been fixed.

Detail view displays details of wrong list entry

When selecting a list entry in the master element of a master/detail component, the details of a previously selected entry were sometimes displayed in the detail view. This error has been fixed.

Bug fixes in project templates

- An error in the **Web App Controls Tutorial** has been fixed.
- Missing translations in the project templates were updated.

Error when reloading the Detail component

When reloading the detail component by navigating between components, no warning is displayed.

Bug fixes for overlays

- When executing an action in an overlay element, a loading indicator is now displayed and the buttons are enabled, if the execution takes a longer time.
- The message within an overlay was not loaded in some cases, which caused the interface to crash. Messages in overlays are now displayed as expected.

Bug fixes for the ComboBox control

- The attribute `optionsList` was ignored previously, if the ComboBox control was used within a ListView control. This error has been fixed.
- In some cases a scroll bar was displayed for ComboBoxes, although this was not necessary. This error has been fixed.

Autocompletion displays not allowed attributes

Autocompletion in X4 Activities Web Apps now only displays attributes that are allowed for the single components, controls, actions, etc.

Bug fixes for the action "Download file"

- When executing the action "Download file", an error used to occur if the name of the file to be downloaded contained an "&" character. This error has been fixed.
- Translations were not displayed if they were linked to a "Download file" action. This error has been fixed.

Display errors in Internet Explorer

- A display error occurred in Internet Explorer for list components. This error has been corrected.
- In Internet Explorer, a display error occurred when displaying calendar components. In some cases the application then crashed. This error has been fixed.
- In Internet Explorer, a corresponding distance and a hyphen are now displayed between the module navigation and the available actions.

Bug fixes for the action "Upload file"

- When using the "Upload file" action, the data passed to the processing process was previously ignored. This error has been fixed.
- After executing the "Upload file" action, the component (specified by `componentName`) to be navigated to at the end of the action was not called. This error has been fixed.
- After executing the "Upload File" action, the processing process was not executed as expected. This error has been fixed.

Bug fixes in the Task Management Web App

- Some missing translations in the Task Management Web App have now been added.
- In the Task Management Web App, a "Leave Page" dialog was always displayed if dialogs were aborted. This error has been fixed.

Bug fixes related to properties

- In Web apps, an error used to occur if the data model contained a property named *Component* or *ExternalLink*. This error has been fixed.
- Properties of type `Complex` could not handle comments in the XML file correctly until now, which led to a faulty Web App. This error has been fixed.

List elements are not saved in the data model

There was an error when updating properties, which caused data loss in the case of list items. This error has been fixed.

Change password dialog always displays the same error message

The Change password dialog used to display the same error message regardless of the cause of the error. This error has been fixed.

Axis labeling in line charts

The label of the X-axis in line charts was previously truncated if it contained more than five characters. Now the alignment of the label is changed as soon as it is longer than four characters. Moreover, a paging is displayed for chart legends containing too many entries.

Detail component is displayed above the List component

When resizing the browser window from the mobile view to the normal view, the detail component and the list component were swapped so that the detail component was displayed above the list component. This error has been fixed.

2.6.5 X4 Activities Classics

Display errors with special characters in tooltips

Special characters are now displayed correctly in tooltips.

getLocale outputs null in Firefox

The `getLocale` query in Firefox previously returned `null` if no `locale` cookie was explicitly defined. Now `getLocale` returns "default" (english) if no `locale` is set.

Attribute baseUrl is not adjusted after renaming

The `baseURL` attribute is now automatically adjusted when copying or renaming an X4 Activities Classic project.

2.6.6 X4 Control Center

Missing translations in Administration module

Within the **Administration** module, missing translations were added under **X4 Management**.

Error after reloading execution configurations

After reloading execution configurations via **Reload Configuration**, also processes were executed that were already in the past according to the execution configuration. This error has been fixed.

Synchronization error in Administration module

A synchronization error, which occurred when loading content in the Administration module was fixed.

Tabs with too long names cannot be closed

If tab names within the User Management exceeded a certain length, the corresponding tab could not be closed. The tab width has now been limited so that names that are too long are no longer displayed in full. The full name is displayed in a tooltip.

Warnings when starting X4 Control Centers

When starting X4 Control Center now warning messages are no longer displayed in the Server log.

Missing adapters are not marked as errors in the instance view

In the instance view, missing adapter links within a process are now also marked as failed process steps.

Error when validating valid e-mail addresses

The e-mail validation within X4 Control Center has now been changed to the [Validation](#) recommended by W3C.

Executing the operation `reloadProjectsOfRepository` interrupts process executions

When executing the X4 Management operation `reloadProjectsOfRepository` within the administration interface in the X4 Control Center, processes that are currently running are no longer interrupted.

Display of scroll bars in dialogs




In the User Management all dialogs were previously displayed with a scroll bar. This error has been fixed.

3 Release Notes 6.2.0

3.1 Changed System Requirements

The system requirements for X4 Suite 6.2.0 were adjusted as follows:

X4 Server



Operating system	<ul style="list-style-type: none"> • Microsoft Windows Server 2012, 2012 R2, 2016, 2019 • SUSE Linux Enterprise Server 15, Red Hat Enterprise Linux 8, Ubuntu Linux 18.04 LTS, Debian GNU/Linux 10.1 • The administration interface X4 Control Center can be used cross-platform via browser. <div>  <ul style="list-style-type: none"> • If you want to use the X4 Server in a different environment, do not hesitate to contact us for advice. • Only 64 bit operating systems are supported (x86_64). • For security reasons, a hardened configuration of the X4 Server is required to use the X4 Proxy Server. Do not hesitate to contact us for advice. </div>
Platform	<ul style="list-style-type: none"> • Runtime environment: X4 Server is based on the Java 11 platform. AdoptOpenJDK 11 is already included as runtime environment. • Application server: X4 Server uses an integrated WildFly application server in version 18.0.0. • System database: X4 Server requires a system database to manage runtime and authentication information. The following databases are supported: <ul style="list-style-type: none"> • Oracle (11g, 12c, 18c, 19c) • Microsoft SQL Server (2012 Service Pack 4, 2014 Service Pack 3, 2016 Service Pack 2, 2017) • PostgreSQL (11.5, 12.0) <div>  <ul style="list-style-type: none"> • If you have special requirements regarding the Java runtime environment or if you want to use an alternative application servers for customer-specific adaptations, do not hesitate to contact us for advice. • If you want to use the X4 Server with a different version of the above database management systems, do not hesitate to contact us for advice. </div>
Hardware requirements	<ul style="list-style-type: none"> • At least 2 processors • At least 5 GB free disk space • At least 8 GB main memory <div>  <p>Starting with a number of 500 processes to be executed, we recommend a system with at least 8 processors and 16 GB main memory, which must be available exclusively for X4 Server.</p> </div>

Connectivity / Databases	<p>More than 200 adapters are available to connect the X4 Server to your systems.</p> <ul style="list-style-type: none"> • Supported relational database systems: All JDBC-compatible databases, e.g. <ul style="list-style-type: none"> • Oracle Database • Microsoft SQL Server • IBM DB2 • PostgreSQL • MySQL / MariaDB • SQLite • Supported No-SQL database systems: <ul style="list-style-type: none"> • Apache Cassandra • Elastic Search (Version 5) • Mongo DB • Supported Cloud database systems: <ul style="list-style-type: none"> • Amazon S3 SimpleDB • Amazon S3 DynamoDB • Google BigTable • Microsoft Azure Table Storage • Further on request
---------------------------------	---

X4 Activities

Operating system	X4 Activities-based web applications can be used cross-platform via browser.
Platform	<p>X4 Activities Web Apps</p> <p>Current browser (also mobile) with enabled JavaScript:</p> <ul style="list-style-type: none"> • Google Chrome (version 83.0.4103 or later) • Mozilla Firefox (version 68.9.esr or later) • Microsoft Edge (Chromium-based / version 83.0.478.45 or later) • Apple Safari (version 13.1 or later) <div> <p>i Microsoft Internet Explorer and Microsoft Edge ("Project Spartan") are discontinued by Microsoft. Please switch to Microsoft Edge (Chromium-Based) or any other compatible browser.</p> </div> <p>X4 Activities Classic</p> <p>Current desktop browser with enabled JavaScript:</p> <ul style="list-style-type: none"> • Google Chrome (version 83.0.4103 or later) • Mozilla Firefox (version 68.9.esr or later) • Microsoft Edge (Chromium-based / version 83.0.478.45 or later) <div> <p>i Microsoft Internet Explorer and Microsoft Edge ("Project Spartan") are discontinued by Microsoft. Please switch to Microsoft Edge (Chromium-Based) or any other compatible browser.</p> </div>

X4 Designer

Operating system	<ul style="list-style-type: none"> • Microsoft Windows 8.1, 10 (version 1803 or later) • Microsoft Windows Server 2012, 2012 R2, 2016, 2019 • The X4 Web Designer can be used cross-platform via browser. <div data-bbox="483 533 1437 857"> <p> Only 64 bit operating systems are supported (x86_64).</p> <p>Only Windows operating systems allowing the execution of desktop applications are supported. Core versions of Microsoft Windows Server are not supported.</p> <p>Desktop virtualization solutions (e.g. Citrix XenDesktop or Citrix XenApp) are not officially supported. However, some customers are using X4 Designer in environments like these. Do not hesitate to contact us for advice.</p> </div>
Platform	<p>Runtime environment</p> <p>X4 Designer is based on the Java 11 platform. AdoptOpenJDK 11 is already included as runtime environment.</p> <p>X4 Web Designer</p> <p>You can access X4 Web Designer via a current browser with enabled JavaScript:</p> <ul style="list-style-type: none"> • Google Chrome (version 83.0.4103 or later) • Mozilla Firefox (version 68.9.esr or later) • Microsoft Edge (Chromium-based / version 83.0.478.45 or later) <div data-bbox="483 1339 1437 1496"> <p> Microsoft Internet Explorer and Microsoft Edge ("Project Spartan") are discontinued by Microsoft. Please switch to Microsoft Edge (Chromium-Based) or any other compatible browser.</p> </div>
Hardware requirements	<ul style="list-style-type: none"> • At least 2 processors • At least 2 GB free disk space • At least 8 GB main memory

3.2 Platform Updates

3.2.1 Java update

To ensure the full functionality of the X4 Server, Java has been updated to version 13.

3.2.2 WildFly Update

The different installation packages of the X4 server are now based on WildFly version 18.0.0.

3.2.3 Eclipse Update


X4 Designer now uses the current Eclipse version 2019-09.

3.2.4 Library update for FTP adapter

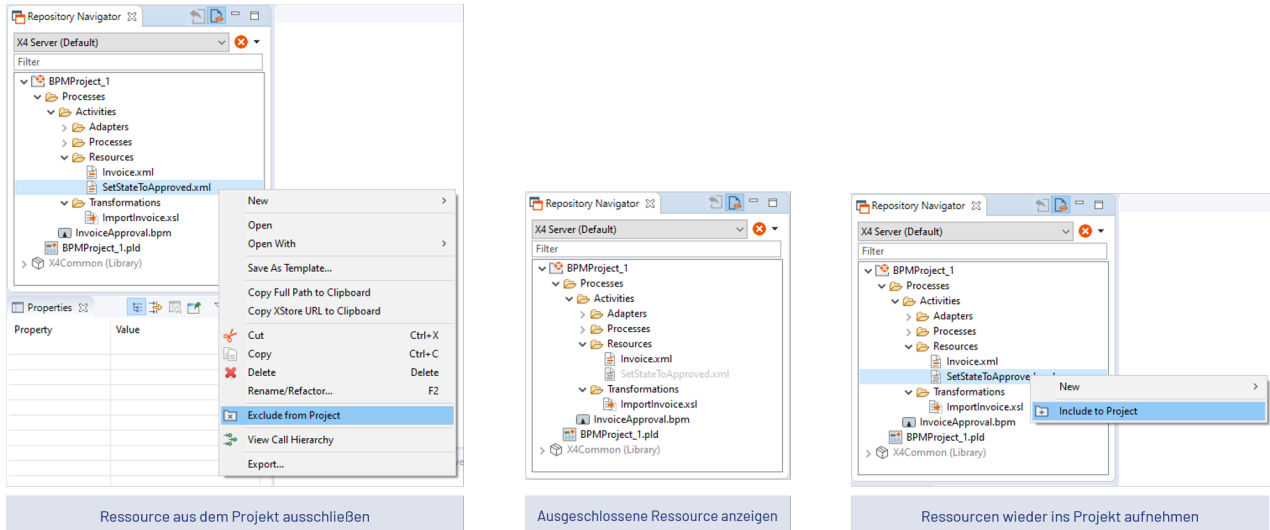
The library used for the FTP adapters has been updated to version 5.3.2. This supports additional security algorithms.

3.3 New Functions and Changes

3.3.1 Excluding and Including Files from the File System

Resources from the file system can now easily be included into a project and excluded again via the X4 Designer. The button  **Show or hide all files** within the Repository Navigator allows displaying and hiding the contents of the file system. Resources existing in the file system but which are not part of the project will be grayed out.

The context menu **Exclude from Project** enables to exclude individual resources from the project and the menu **Include to Project** to include them back into the project.



3.3.2 New Server Startup Message

After the successful startup of the X4 Server, a clearer message is now displayed in the server log.

```

C:\WINDOWS\system32\cmd.exe

#####
#
#          %/%/%/%  %/%  %/%/%  %/%/%/%  %/%/%/%/%/%  %/%/%/%  %/%/%/%/%/%  %/%/%/%/%/%  %/%/%  %/%/%  %/%/%  %/%/%  %/%/%  %/%/%
# %/%/%  %/%/%  %/%/%  %/%/%  %/%/%  %/%/%  %/%/%  %/%/%  %/%/%  %/%/%  %/%/%  %/%/%  %/%/%  %/%/%  %/%/%  %/%/%  %/%/%
# %/%/%/%  %/%/%  %/%/%  %/%/%  %/%/%  %/%/%/%/%  %/%/%/%/%  %/%/%/%/%  %/%/%  %/%/%  %/%/%  %/%/%  %/%/%  %/%/%
#          %/%/%  %/%/%  %/%/%  %/%/%  %/%/%  %/%/%  %/%/%  %/%/%  %/%/%  %/%/%  %/%/%  %/%/%  %/%/%  %/%/%  %/%/%
# %/%/%/%  %/%/%/%  %/%/%/%  %/%/%/%  %/%/%/%/%  %/%/%/%/%  %/%/%/%/%  %/%/%  %/%/%/%  %/%/%/%/%  %/%/%/%/%/%  %/%/%  %/%/%
#
######
#
#          Startup duration: 1 minutes and 40 seconds.
#
######
10:18:08,849 INFO [de.softproject.integration.server.tables.ProcessTable] (de.softproject.
integration.server.tables.ProcessTable) Process table initialized in 2237ms.
10:18:08,926 INFO [de.softproject.integration.server.services.scheduler.iXscheduler] (X4_S
cheduler) X4 Server Scheduler ON.

```

3.3.3 Deadline Management for Human Tasks

A deadline can be defined for each Human Task. The deadline is specified within the Human Task Editor under **General > Deadline**. In addition to a duration, also an exact deadline (Until) with date and time can be specified. Moreover, a status, which is automatically executed when the deadline of the process has been reached, can be specified via Case State.

Human Task Editor

Title: Rechnungsfreigabe

Description: Bitte geben Sie die Rechnung frei oder lehnen Sie sie gegebenenfalls ab.

General | Business Data | Actions | Settings

Assigned User / Group

Owner: email

Assigned User / Group: clerks

Deadline

☐ No deadline


☒ Duration: 0 Days 8 Hours 0 Minutes

☐ Until: 16.08.2019 13:40:11

Case State: Declined

OK Cancel

If the process was due before it could be processed and the process was automatically continued with a configured status, the process is automatically closed and moved to the **Expired (Verfallen)** folder within the *Task Management* web app. All tasks that exceeded the deadline and were automatically closed are displayed here.


Task Management

Hallo, SP Admin :

Offen

In Bearbeitung

Erledigt

Verfallen

Verfallen

Schlüssel	Aufgabe	Fälligkeitsdatum	Zuweisung	Sender	Datum	Erledigt
25.000€	Rechnungsfreigabe	9.7.2019	Persönlich	admin	9.7.2019	




Rechnung

Rechnungsdaten

Summe	25.000€
-------	---------

3.3.4 Highlighting of Deadlines in the Task Management Web App

In order to better highlight processes with a deadline, these are now highlighted in different colors in the *Task Management* Web App:

- : The deadline of the case was exceeded and the case was automatically closed and moved to the **Expired (Verfallen)** folder.
- : The case is due on the same day.
- : The deadline for processing the case is > 24 hours.

Task Management

Hallo, SP Admin :

Offen

Bearbeiten

In Bearbeitung
Erledigt
Verfallen

Offen					
Schlüssel	Aufgabe	Fälligkeitsdatum	Zuweisung	Sender	Datum
25.000€	Rechnungsfreigabe	12.7.2019	Persönlich	admin	9.7.2019
25.000€	Rechnungsfreigabe	9.7.2019	Persönlich	admin	9.7.2019
25.000€	Rechnungsfreigabe	9.7.2019	Persönlich	admin	9.7.2019
25.000€	Rechnungsfreigabe	9.7.2019	Persönlich	admin	9.7.2019
25.000€	Rechnungsfreigabe	8.7.2019	Persönlich	admin	4.7.2019
25.000€	Rechnungsfreigabe	7.7.2019	Persönlich	admin	4.7.2019
25.000€	Rechnungsfreigabe	6.7.2019	Persönlich	admin	4.7.2019

Rechnung

Rechnungsdaten
Summe
25.000€

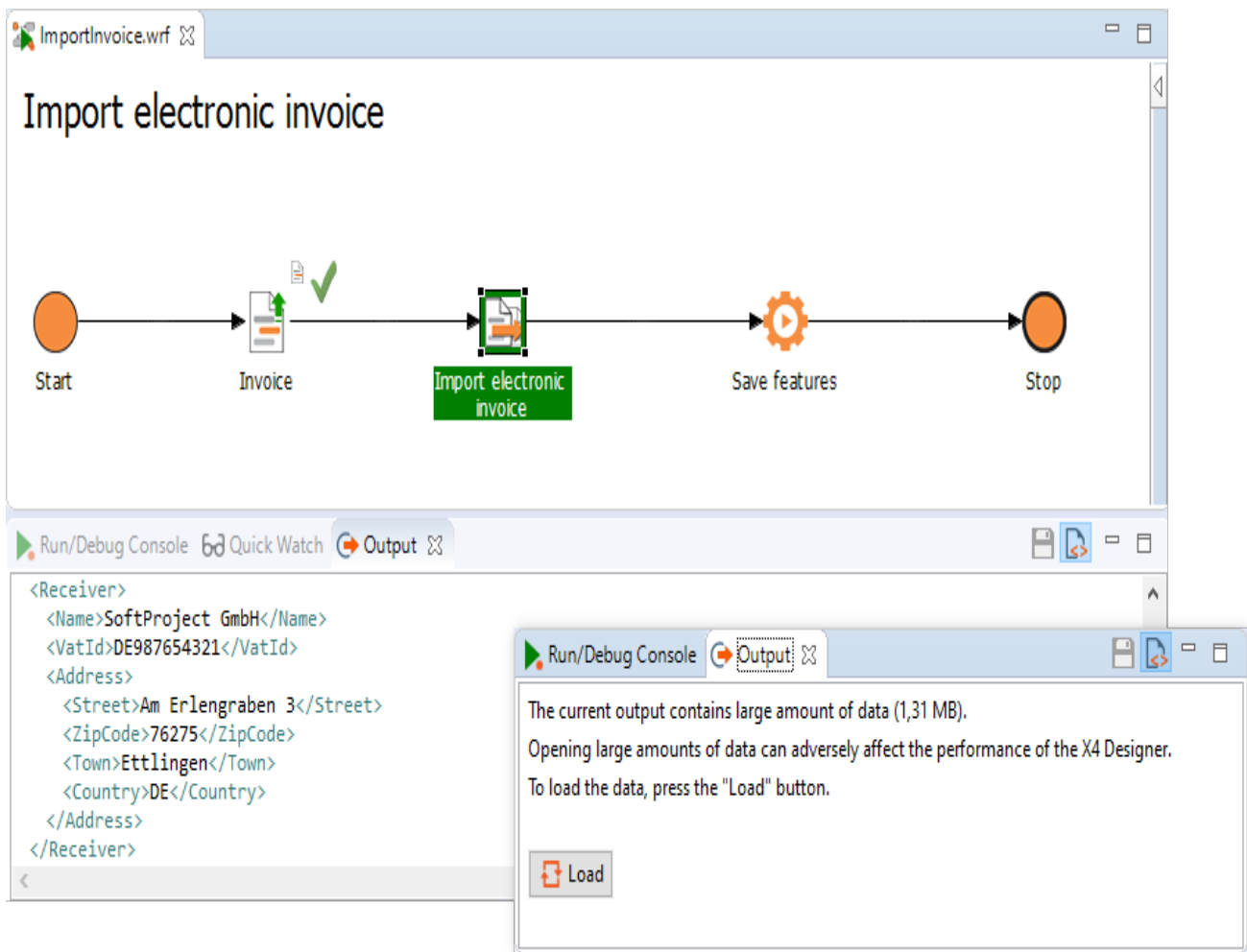
3.3.5 New Output View within X4 Designer

The output view allows to view the intermediate results of each debug step and to save and format them, if necessary.

- If the result contains content greater than 1 MB, a warning is displayed and the result can be downloaded via a button.

The following additional actions can be performed via the Output view's toolbar:

- Save content of output view:* Save the data form the output view
- Format the content of the output view:* Format the data form the output view

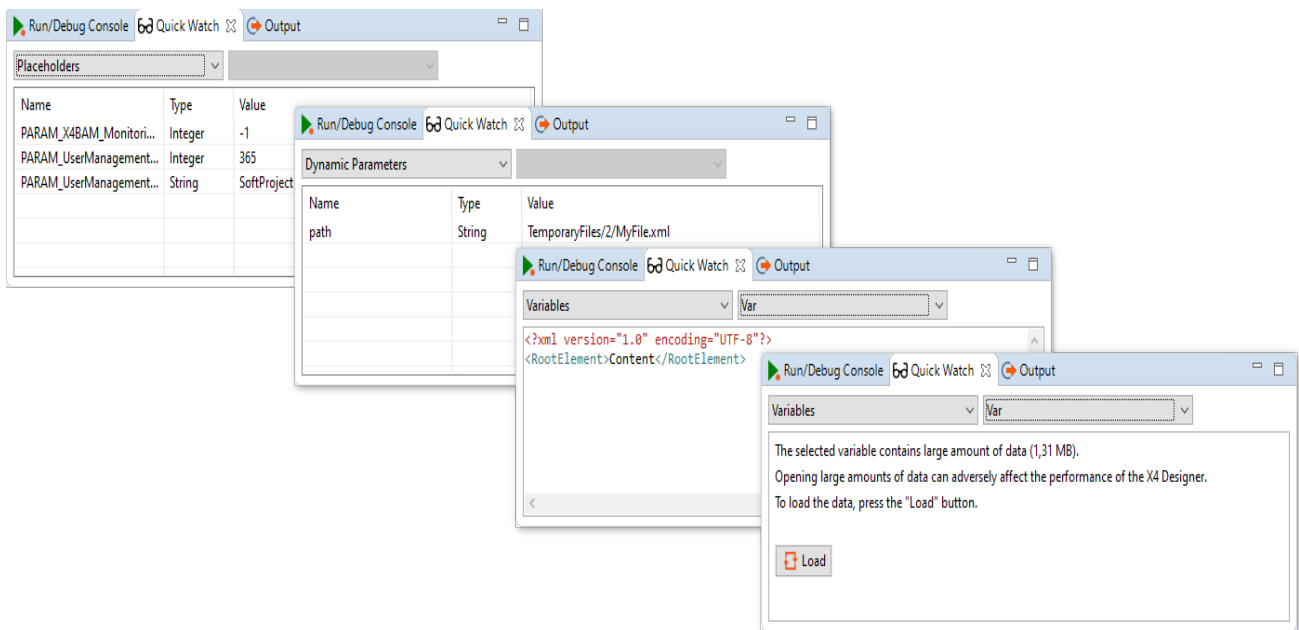



3.3.6 Extended Quick Watch View

The Quick Watch view displays placeholders, dynamic parameters and context variables with their values during debugging.

Starting with version 6.2.0 of the X4 Suite, selected variables are updated after each debug step.

- ❗ If the result contains content greater than 1 MB, a warning is displayed and the result can be downloaded via a button.

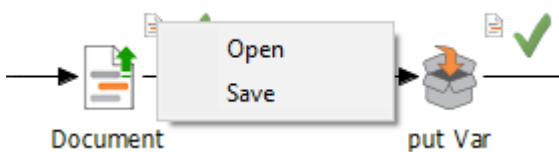


- ✓ The Quick Watch view can be opened during debugging via the menu **Debug > Quick Watch** or using the Quick Watch icon  within the toolbar.

3.3.7 Saving Intermediate Results of Debugging Steps

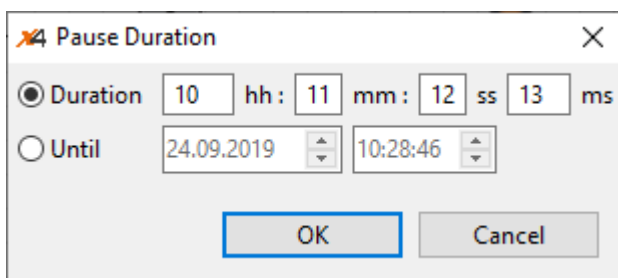
Intermediate results of debugging steps can now also be opened and saved via a context menu.

- i If the result contains content greater than 1 MB, a warning is displayed and the result can be downloaded via a button.





3.3.8 Pause Component Supports Milliseconds

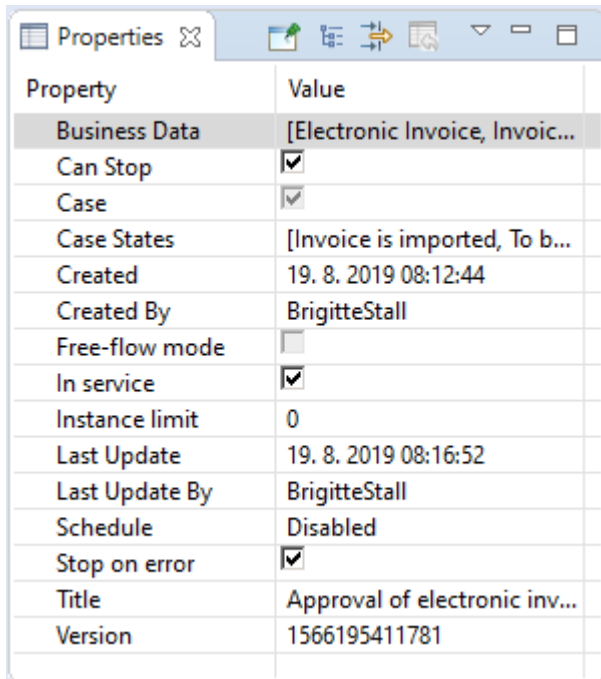
The Pause component now also allows pause durations in millisecond (e.g. *10:11:12.013*), see also Pause.



3.3.9 Extended Properties View

The Properties view now shows the most common properties of a process or process component by default. However, properties can also be displayed based on the following criteria:

-  *Show Categories*: Show properties sorted by categories
-  *Show Advanced Properties*: Show advanced properties




Property	Value
Business Data	[Electronic Invoice, Invoic...
Can Stop	<input checked="" type="checkbox"/>
Case	<input checked="" type="checkbox"/>
Case States	[Invoice is imported, To b...
Created	19. 8. 2019 08:12:44
Created By	BrigitteStall
Free-flow mode	<input type="checkbox"/>
In service	<input checked="" type="checkbox"/>
Instance limit	0
Last Update	19. 8. 2019 08:16:52
Last Update By	BrigitteStall
Schedule	Disabled
Stop on error	<input checked="" type="checkbox"/>
Title	Approval of electronic inv...
Version	1566195411781

3.4 Activities: New Functions and Changes

3.4.1 X4 Activities Web Apps

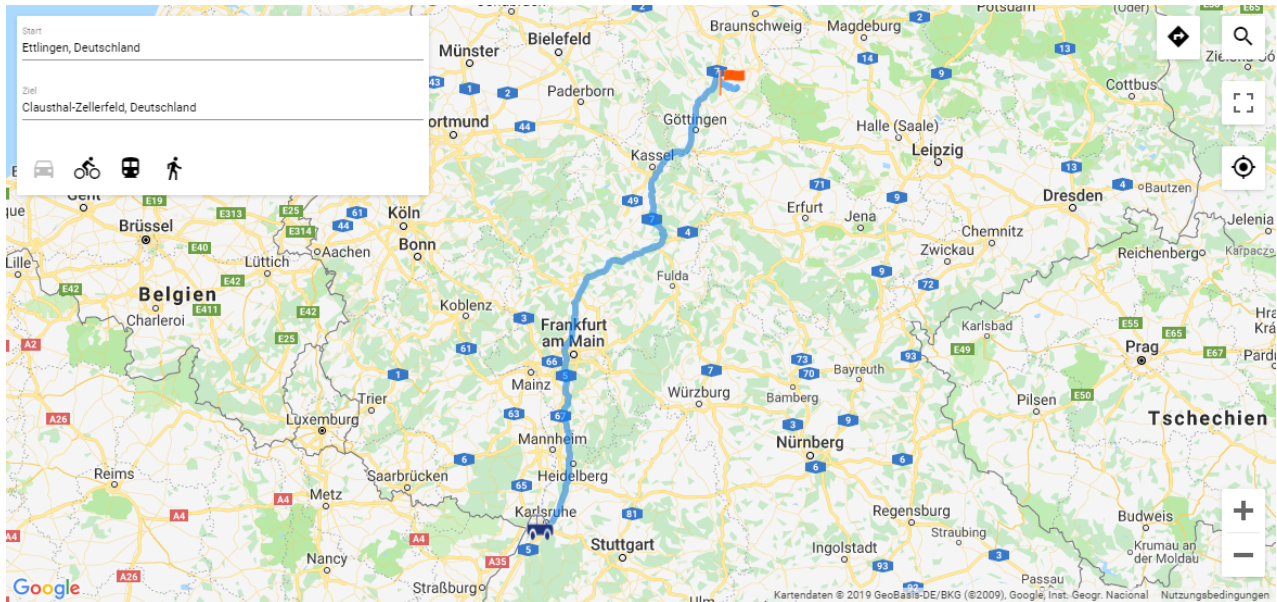
3.4.1.1 Simplified Structure for Data within a Web Application

The data model for processing data within a web application has been simplified significantly.

 Due to the changed data model, previous Web App projects can only be used in compatibility mode. Projects that were created in an older version must be migrated to use Simple Data Transport. Alternatively, you can disable the **Simple Data Transport** option for a web app project. To do this, select the project in the X4 Designer and disable **Simple Data Transport** in the Properties.

3.4.1.2 Maps Control

X4 Activities Web Apps now enables to use Maps controls allowing to integrate maps from various providers, including Google Maps, Bing Maps and OpenStreetMaps. Moreover, maps provide a search function and route calculation.



3.4.1.3 Card Control

Card controls enable to integrate cards into X4 Activities Web Apps, e.g. in order to create teasers or dashboards for applications. A card can contain a title and subtitle, various actions and a layout with any controls.



SoftProject

Headquarter Ettlingen



We have been offering products and services related to the digitization and automation of business processes since 2000. The strong demand from various industries is leading to an above-average corporate growth. Today we employ over 90 people in our head office in the technology region of Karlsruhe and our branches located in Spain and Slovakia.

Website

<https://softproject.de/en/softproject/>



Website



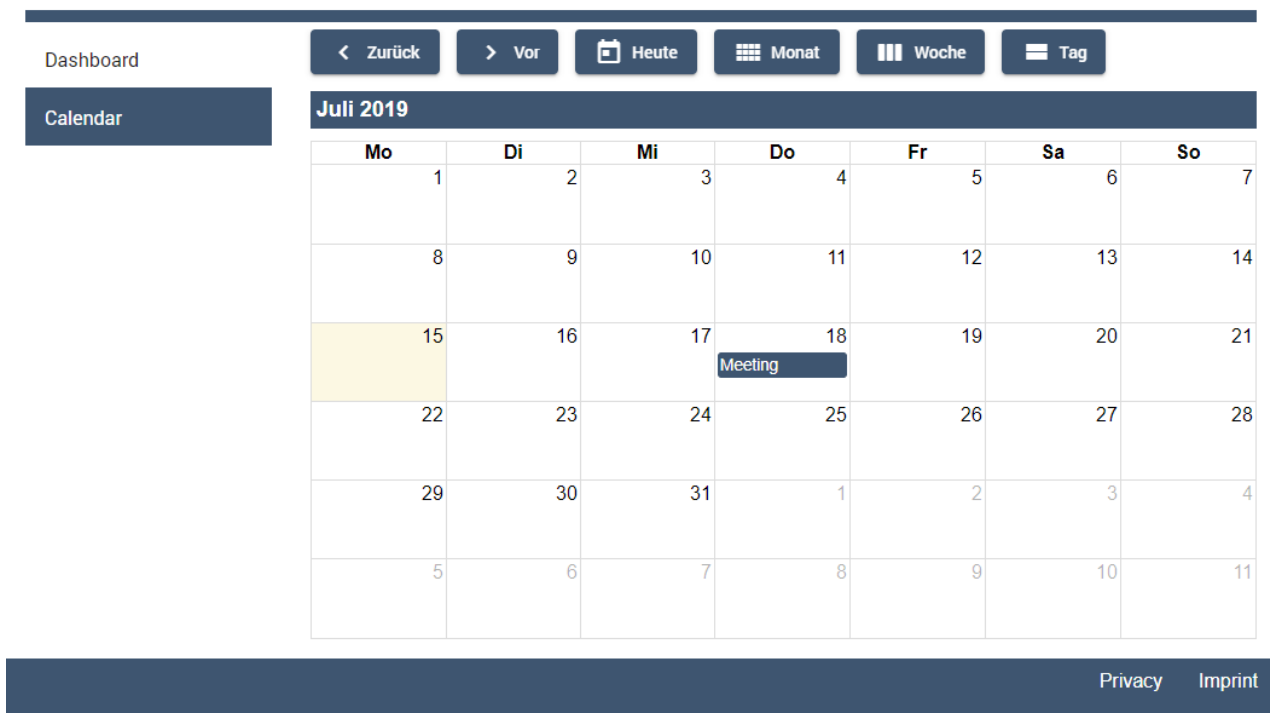
Save Picture



Delete Picture

3.4.1.4 New Calendar Component

The new calendar component allows to integrate calendar views into Web Apps interfaces. Appointments can be provided with different colors and categories and the user is offered different views to choose from, e.g. a daily, weekly or monthly view. All labeling elements can be localized and provided to users worldwide.



3.4.1.5 Extended Theme Editor

Both the color scheme for the application and the color scheme for diagrams can be defined within the extended *Theme Editor*.

- The color scheme is specified within the *Main Theme Designer*. Moreover, the colors for the hover effect for buttons and menu entries can be defined here, see Theming.

i For the hover effect for buttons and entries in the menu the following colors are used from the palette:

- Button: Changes from 500 to 400
- Menu entries: Change from A100 to A200

- Under *Chart Colors* the colors for the different charts are defined. By specifying a color under *Main Charts Color* the main color is defined. Starting from the main color, the remaining colors are automatically calculated. However, the colors can also be defined individually.



- The colors 01–12 define the single elements of a Line, Bar and Pie diagram. The colors GaugeAxisMin, GaugeAxisMiddle and GaugeAxisMax define the three axes of the gauge diagram (Gauge).
- The colors defined here are used if the attribute color or GaugeAxisMin, GaugeAxisMiddle and GaugeAxisMax are not explicitly defined for the different diagram types.

Main Theme

Main Color

#3e5570

Choose a Color...

Color Scheme

50	#ecef1	Contrast	Color...
100	#c5ccd4	Contrast	Color...
200	#9faab8	Contrast	Color...
300	#7e8ea0	Contrast	Color...
400	#5e7188	Contrast	Color...
500	#3e5570	Contrast	Color...
600	#364a62	Contrast	Color...
700	#2f4054	Contrast	Color...
800	#273546	Contrast	Color...
900	#1f2b38	Contrast	Color...
A100	#ffffff	Contrast	Color...
A200	#9faab8	Contrast	Color...
A400	#5e7188	Contrast	Color...
A700	#2f4054	Contrast	Color...

Chart Theme

Main Color

#3e5570

Choose a Color...

Color Scheme

01	#3e5570	Contrast	Color...
02	#403e70	Contrast	Color...
03	#593e70	Contrast	Color...
04	#703e6e	Contrast	Color...
05	#703e56	Contrast	Color...
06	#70413e	Contrast	Color...
07	#70593e	Contrast	Color...
08	#4b703e	Contrast	Color...
09	#55703e	Contrast	Color...
10	#3e7040	Contrast	Color...
11	#3e7058	Contrast	Color...
12	#3e6e70	Contrast	Color...
GaugeAxisMin	#228b22	Contrast	Color...
GaugeAxisMiddle	#3e5570	Contrast	Color...
GaugeAxisMax	#ff4500	Contrast	Color...



For Web Apps projects created with previous versions of the X4 Suite, a migration must be performed to take advantage of the new features.

3.4.1.6 New Color Attribute for Charts

- Line, bar, and pie/donut charts have been added a new attribute color allows chart colors to be defined individually by specifying a hexadecimal color value.
- For gauge charts the already available attributes green, normal and red have been replaced by the attributes axisMin (green), axisMiddle (normal) and axisMax (red).



All chart colors can also be defined within the Theming Editor.



For Web Apps projects created with previous versions of the X4 Suite, a migration must be performed to take advantage of the new features.

3.4.1.7 Adjustable Icon Position for Actions

The position of the icon on an action button can now be adjusted via the attribute `iconPosition`.

3.4.1.8 New Date/Time Picker

The `TextBox` control now also provides a date/ time picker (`datetime`), see also `Textbox`.

3.4.1.9 Highlighting Individual Rows in List Components

Within a list component, individual rows can now be highlighted with user-defined colors using the attribute `rowColor`. This enables, for example to highlight task with deadlines of different lengths.

3.4.1.10 Icons for Menu Components

The new attribute `iconUrl` allows to define an icon for components, which will be displayed in the menu of an application in addition to the component's `displayName`.

3.4.1.11 Hover Effect for Buttons and Menu Entries

If buttons and menu items are overridden with the cursor, a hover effect is now displayed, see also `Theming`. This enhances the user experience of X4 Activities Web Apps, as the user directly recognizes where interaction is possible.

3.4.1.12 Opening External Contents via Custom Actions

Custom actions now allow to open external links via the new attribute `externalLink`.

3.4.2 X4 Activities Classic

3.4.2.1 Optimized Properties in the UI Editor

The missing properties `State Context`, `Input Change Events`, `Clear Empty Input Values`, `UI Events`, `Default Data`, `Default State` and `Default Local State` have been added within the UI Editor.

3.4.2.2 Improved Error Handling within X4 Web Designer


If JavaScript errors occur, the error message is now not only displayed in the (browser) console, but also in the respective editor.

3.4.2.3 Configuration Changes

The contents of the configuration files `X4PortalConfig/X4PConfig.xml` and `X4PortalConfig/ExtensionPointConfig.xml` were moved to the configuration file `X4config.xml` and the

X4PortalConfig directory was removed from the X4 Server. Moreover, the processes for the "Global Configuration" were removed from the X4Common process library.

- The parameter for sending "*Can't access*" e-mails can now be configured in the configuration file X4config.xml within /x4/portal/mail (previously /X4PConfig/X4Mail), see also Konfigurationen für X4 Activities Classic.
- The URM extension points are now configured within the element /x4/urm/extensionPoints (previously directly within the root element /ExtensionPointConfig), see also Konfigurationen für X4 Activities Classic.

 When executing the migration tool for version 6.2.0 of the X4 Suite, the configurations from the X4PortalConfig files are automatically transferred to the new structure within the X4config.xml and the old files are deleted. If additional settings have been added to these files, a manual migration is required first.

3.5 New and Changed Adapters

3.5.1 Neue Adapters

3.5.1.1 URL Encoding Converter

The URL Encoding Converter allows to convert URLs or strings into a URL and vice versa.

3.5.1.2 QR Code Generator

The QR Code Generator enables to generate and to read QR codes.

3.5.1.3 Dropbox Connector

The Dropbox Connector connects to the Dropbox cloud service and provides functions for managing cloud storage data.

3.5.1.4 Apache Kafka

Apache Kafka enables data streams to be stored and processed over a distributed streaming platform. Various interfaces allow data to be written to Kafka clusters, data to be read or imported or exported from third-party systems. Due to its high fault tolerance and scalability, Apache Kafka is suitable for large amounts of data and applications, e.g. in the big data environment.

X4 Suite provides the following two adapters for this purpose::

- **Apache Kafka Publisher:** Enables to publish messages in a specific Apache Kafka Topic.
- **Apache Kafka Subscriber:** Enables to subscribe messages in a specific topic, unsubscribe or read the last message.

3.5.1.5 Case Management Statistics

The Case Management Statistics adapter provides statistics for cases (business processes) and human tasks.

3.5.1.6 OData Connector

The OData Connector enables communication with systems that provide ReST services according to the OData standard, e.g. SAP S4/Hana, Microsoft Sharepoint, Microsoft Dynamics Navision and others.

3.5.1.7 Microsoft Azure Data Lake Gen 1 Storage Connector

The Microsoft Azure Data Lake Gen 1 Storage Connector enables communication with first generation Microsoft Azure Data Lakes (based on Apache Hadoop).

3.5.1.8 YAML Converter

The YAML Converter allows to convert YAML documents into XML documents and vice versa.

3.5.1.9 SAML Calculator

The SAML Calculator signs, validates, encrypts and decrypts SAML assertions and requests.

3.5.2 Extended Adapters

3.5.2.1 POP/SMTP

The POP/SMTP adapter has been extended by the parameters `smtpSecurityProtocol` and `pop3SecurityProtocol` to support sending and receiving e-mails via TLS and SSL. Previously, this could only be configured using a properties file referenced in the parameter `propertiesURL`. When using the now obsolete parameter `propertiesURL`, a warning is issued in the server log.

Moreover, the parameters `smtpAllowAllHosts` and `pop3AllowAllHosts` have been added in order to allow all hosts.

3.5.2.2 Microsoft Excel Writer

The Microsoft Excel Writer has been extended with the following functions:

- The new attribute `wrapText` now enables specifying whether automatic line breaks in cells are allowed
- The new attribute `autoFit` allows to automatically adjusting column widths
- The attribute `width` enables to define a fixed column width
- The new attribute `height` allows to define a fixed row height.

3.5.2.3 MQTT Subscriber/Publisher

The adapters MQTT Subscriber and MQTT Publisher now allow to dynamically subscribe and publish topics without a restart of the server.

3.5.2.4 Inline Content Expander

The Inline Content Expander has been extended with the operation `Collapse` allowing parts of an XML document to be collapsed as pure text or Base64 encoded strings. The collapsed data segments are embedded in the input XML document.

3.5.2.5 Log4J Logging

Within the Log4J Logging adapter log messages of the level `FATAL` are output with the level `ERROR` for technical reasons. The log message contains `FATAL:` as prefix.

3.5.2.6 Project Access

The operation `Exists` has been added to the Project Access adapter. The operation allows checking whether the file specified in the parameter `path` exists. Moreover, the exception handling of the `Read` operation has been corrected.

3.5.2.7 CSV Converter

The parameter `inputEncoding` has been added to the CSV Converter. The parameter allows to specify the character encoding of the adapter input.

3.5.3 Outdated Adapters

The following adapters are discontinued with version 6.2.0 of the X4 Suite and will no longer be supported in future X4 Suite versions:

- *ZIP Compression (Deprecated)*: Please use the Zip Converter instead.
- *ZIP Folder Compression (Deprecated)*: Please use the Zip Converter instead.
- *ZIP in Memory Compression (Deprecated)*: Please use the Zip Converter instead.
- *Repository Explorer*: Please use the Project Access or X4 Projects adapter instead.
- *FTP Transfer (Deprecated)*: Please use the FTP Connector instead.
- *SFTP Communication (Deprecated)*: Please use the FTP Connector instead.
- *HTTP(S) Communication*: Please use the HTTP(S) Connector instead.

3.6 Bug fixes

The following bugs have been fixed with X4 Suite version 6.2.0:

3.6.1 X4 Designer

Incorrect display of selection in check boxes

When configuring an adapter, an incorrect display of the selection could occur, e.g. when scrolling. This bug has been fixed.

Refactoring of files doesn't change process labels

If a process was renamed as part of refactoring, the labels of the process were not changed. This bug has been fixed.

Update function available in the settings, although the function is not available

The function *Install/Update* in the settings of the X4 Designer was displayed, although this function is no longer available. This bug has been fixed.

Problems with the configuration of a web service

If a service URL from a *.wsinc file was entered into the configuration path of the web service of an included element and saved, then the connection to the server was interrupted. The included element was no longer displayed after saving and could not be recreated. This bug has been fixed.

***.json files cannot be saved in the folder "TemporaryFiles" of an ESB project**

In the folder "TemporaryFiles" of an ESB project, *.json files couldn't be saved. This bug has been fixed.

Partially faulty project templates

With some project templates, projects were created that did not contain all the necessary files. This bug has been fixed.

Problems with Includes of XStore URLs in the Web Service Definition

If XStore URLs were used in the Web service definition to include a Web service, the include was no longer displayed. However, the include existed so that it could not be recreated. This bug has been fixed. XStore URLs are no longer allowed to include Web services in the Web service definition.

Display problems in the design view of the mapping editor

When the view was expanded and some connecting lines between the elements were displayed and then right-clicked on the root node of the source file, no connecting lines were displayed anymore. This bug has been fixed.

3.6.2 X4 Activities Classic

Dynamic Form Panel is not updated when the model changes

The Dynamic Form Panel only displayed data that was already present when the panel was initialized. Data that was loaded asynchronously was not displayed, so the Panel might remain empty. This problem has been fixed. The widget has been modified to automatically adjust the form when the model structure changes.

The function *User can't change password* or *User must change password* has no effect

In the demo version of the X4 Suite with a H2 database, the function *User can't change password* or *User must change password* had no effect on the functions of the user. This bug has been fixed.

3.6.3 X4 Activities Web Apps

Display problems when searching for list entries

If a search was made within a list component for a list entry that did not exist, no search results were displayed, but the detail component still contained the data of the last selected list entry. This bug has been fixed.

***Image* control doesn't support the *border* attribute**

The *Image* control didn't support the *border* attribute, so images couldn't have a border. This bug has been fixed.

For nested components, properties must be defined twice

If nested components were used in a web app, properties must be defined in each component. This bug has been fixed.

No entry in text box possible

The problem occurred when the same property was accessed via data binding for the component title and the text box. If the content of the text box was then changed, the title of the component was not adjusted. This bug has been fixed.

FileUpload (control and action) does not work if the process is delivering content with CDATA content or if the *componentName* attribute was included

Both the control and the action *FileUpload* resulted in error messages in the Web App if the linked process provided CDATA content or content for the *componentName* attribute. This bug has been fixed.

Attribute *displayName* is required to display a user-defined action, but is not a mandatory attribute

To display the button of a user-defined action in a Web App, the attribute *displayName* is required. However, this attribute was not mandatory. This bug has been fixed.

Text box too large

When a text box was used in a Web App, the line for text input could extend beyond the layout. This bug has been fixed.

Warning when closing an overlay element

If data in a Web App was changed in an overlay element and the changes were confirmed with a corresponding button, a warning was displayed that the data would not be transferred. This bug has been fixed.

Problems with more than one process in a TabGroup

If more than one process was stored in a TabGroup, e.g. to fill several tabs with data, problems occurred. As a result, no data at all was displayed in a tab. This bug was fixed.

3.6.4 X4 Control Center

Incorrect validation in password policy management form

There was a validation error in the password policy management form. If the *Unlock automatically after...* option deactivated, a value could still be entered. Additionally an error during saving was displayed if the option was deactivated. This bug has been fixed.

The "Cancel" button is always available in the Scheduler

In the Scheduler, the *Cancel* button was always available in the detail view, even if no changes were made at all. This bug has been fixed. The *Cancel* button is now only available in dialogs, no longer in detail views.

Expired column type "text" exchanged

The column type "text" was expired by MS SQL. Therefore the column type was changed.

Incorrect display of "ü"

The character for the umlaut "ü" was not displayed correctly in the Control Center. This bug has been fixed.

Error message when first logging in to the X4 Control Center

An error message appeared the first time logging in to the X4 Control Center. This bug has been fixed.

3.6.5 Adapters

Cobol Copybook Reader: Operation is successful even though required parameter is missing

The adapter *Cobol Copybook Reader* was used in a process without errors, although the required parameter *DescFile* was not set. However, the XML document output by the adapter was empty. This bug has been fixed.

HTTP(S) Connector: Adapter ignores setting for proxy authentication

The adapter ignores the value of the *proxyUsePreemptiveBasicAuth* parameter, so in some cases no connection to the server could be established. This bug has been fixed.

3.6.6 X4 Server

Warning messages at server startup

Some warning messages were displayed when starting the X4 server. This bug has been fixed.

Sporadic problems when starting the server

In rare cases the X4 server did not start reliably. This bug was fixed by an update from WildFly 16 to WildFly 18.

4 Release Notes 6.1.1

The following bugs have been fixed with X4 Suite version 6.1.1:

4.1 Adapters

Counter: Problems with the migration of processes

If processes were migrated from version 5.X of the X4 Suite to version 6.X, problems occurred with the counter, so that counting was not always correct. This bug has been fixed.

Text Replacement: Changed operation name

The operation of the adapter was called *Generate* mistakenly. This bug has been fixed. The operation was renamed to *replace*.

Task Management: Not necessary information *readOnly*

At the input of the adapter for the operation *EditTask* the attribute *readOnly="true"* had to be defined to execute the operation successfully. This bug has been fixed.

Task Management: *state* necessary, but not a mandatory attribute

The parameter *state* of the adapter is required to execute the adapter. Without the parameter set, the process was executed, but had no output. This bug has been fixed. The parameter *state* must now be specified.

JMS: Missing parameter value for parameter *msg_type*

The parameter value *map* was not available for the parameter *msg_type*. This bug has been fixed.

4.2 X4 Activities Web Apps

Header cannot be filled by user input in Web App

The header within a Web App couldn't be filled by a user input in a text box. This bug has been fixed.

Display issues in TabGroup

When navigating between different tabs within a TabGroup it could happen that information from the previous tab was still displayed in the new tab. When leaving and re-displaying a TabGroup it could happen that the title was no longer displayed. For components loaded into a TabGroup, the data flashed and controls were displayed empty. These bugs have been fixed.

Error with empty values in date-picker

If no value is set in a date-picker, then the Web App could not be executed any further. This bug has been fixed.

Error with message for element *FileUpload*

If a message was used in the *FileUpload* element to return a file, the corresponding button was deactivated and no further file could be uploaded. This bug has been fixed.

Bar chart is not displayed correctly

A bar chart defined after a *ListView* was not displayed correctly; the axes were displayed, but the bars and labels were not visible. This bug has been fixed.

Little distance at TabGroup

With TabGroups there was very little distance between the label of a tab and the content of the tab, so that it was not always clear which tab was active, depending on the set color scheme. This bug has been fixed. The distance was increased.

Properties in the upload action's response are not mapped

A property was not mapped correctly during the upload action, so the upload action did not work correctly. This bug has been fixed.

4.3 X4 Designer

Default repository structure is not checked for copies

If a folder was copied, it could be copied to any location. This allowed the default repository structure to be bypassed. This bug has been fixed.

Incorrect export of BPM processes

When exporting BPM processes it could happen that not all files were exported. This bug has been fixed.

4.4 X4 Server

Problem with ReST configuration when renaming projects

If a project was renamed, the ReST configuration was not adjusted accordingly. This bug has been fixed.

Processes with instance limit can only be executed once

Processes that set an instance limit of 1 could only be executed once. Each subsequent call of the process was not executed. This bug has been fixed.

Error forwarding human tasks

If the option *Task can be forwarded* was activated for a human task, a server error occurred when forwarding the human task and the human task was not forwarded. This bug has been fixed.

5 Release Notes 6.1.0

5.1 Platform Updates

5.1.1 Java Update

To ensure the full functionality of the Server, Java has been updated to version 12.

5.1.2 WildFly Update

The different installation packages of the X4 Server are now based on WildFly version 16.x

5.1.3 Angular-Update

X4 Activities Web Apps now uses the current Angular version.

5.1.4 Updates Installation Packages

- **Docker installation:** The Docker installation package (.tar) provided for the X4 Server now also supports MS SQL as a system database.
- **Red Hat Enterprise Linux installation:** The installation package for Red Hat Enterprise Linux now includes all required libraries and RPM modules. Thus, manual installation of the libraries and module is no longer required, see also Installation and Update on Red Hat Enterprise Linux Systems.
- **SuSe Linux installation:** The installation package for SuSe Linux now includes all required libraries and RPM modules. Thus, manual installation of the libraries and module is no longer required, see also Installation and Update on SuSe Linux Systems.

5.1.5 Version Check within X4 Designer

To avoid data loss, when connecting the X4 Designer to the X4 Server, it is now checked whether the two versions are compatible with each other. In case of incompatibility the connection is not established and an error message is displayed both in the X4 Designer and in the X4 Server.

5.2 X4 BPM: New Functions and Changes

5.2.1 Adding Documents to a Case

With the current release, cases are also able to contain documents. The settings enabling to add, edit and delete documents to a case are made within the *Human Task Editor's* tab **Settings**.

The screenshot shows the 'Human Task Editor' window with the 'Settings' tab selected. The window has a title bar with the X4 logo and standard window controls. The 'Title' field contains 'Rechnungsfreigabe'. The 'Description' field contains 'Bitte geben Sie die Rechnung frei oder lehnen Sie sie gegebenenfalls ab.' Below these fields are four tabs: 'General', 'Business Data', 'Actions', and 'Settings'. The 'Settings' tab is active and contains three sections: 'Advanced' with three checkboxes ('Task can be declined', 'Task can be forwarded', and 'Enable access via API'), 'Documents' with three checkboxes ('Enable Documents', 'Documents can be added/edited', and 'Documents can be deleted'), and 'Dynamic Configuration' with a 'Process' field and three buttons ('Create', 'Delete', and 'Open'). At the bottom right are 'OK' and 'Cancel' buttons.

Title
Rechnungsfreigabe

Description
Bitte geben Sie die Rechnung frei oder lehnen Sie sie gegebenenfalls ab.

General **Business Data** **Actions** **Settings**

Advanced
☒ Task can be declined
☒ Task can be forwarded
☐ Enable access via API (Task will not be longer available in Task Management Web App)

Documents
☒ Enable Documents
☒ Documents can be added/edited
☒ Documents can be deleted

Dynamic Configuration
Process
 Create Delete Open

OK Cancel

- **Enable Documents:** Allow processing documents
- **Documents can be added/edited:** Allow adding and editing documents
- **Documents can be deleted:** Allow deleting documents

The documents are then displayed for the corresponding case in the *Task Management Web App*.

5.2.2 Managing Documents via the Task Management Web App

The *Task Management Web App* now also allows managing documents. The possibility to add, edit and delete documents must be enabled within the *Human Task Editor's* tab **Settings** for this purpose.

Task Management

Hallo, SP Admin

Offen

In Bearbeitung

Erledigt

Abbrechen

Herunterladen

Hochladen

Dokument löschen

Neues Dokument

In Bearbeitung

Schlüssel	Aufgabe	Fälligkeitsdatum	Zuweisung	Sender	Datum
SP-93758392190619	Eingangsprüfung	16.5.2019	Personlich	admin	13.5.2019

Bitte prüfen Sie alle Daten sorgfältig.

Expose

Eigentümer

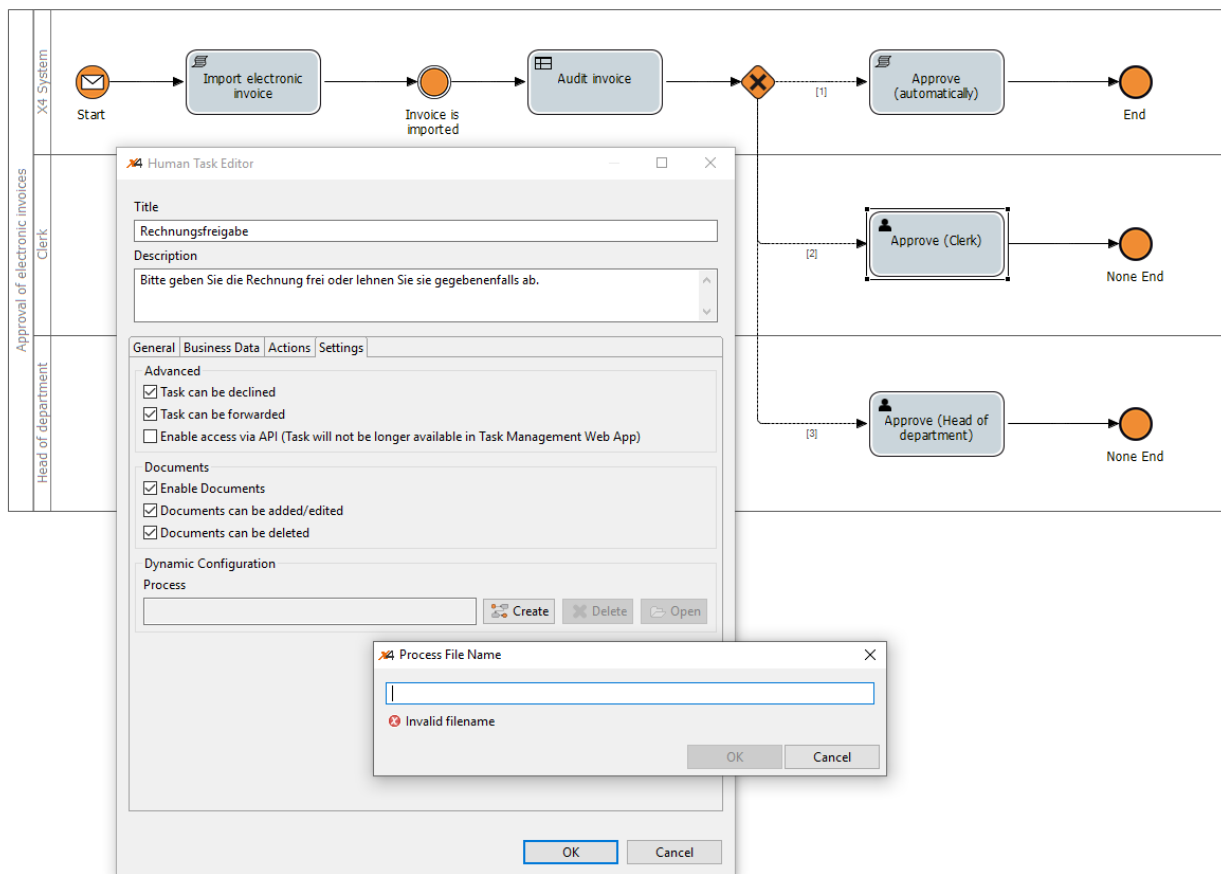
Dokumente

Titel	Dateiname	Ersteller	Erstellt am	Bearbeiter	Bearbeitet am
Küche	kitchen.jpeg	x4	13.5.2019		
Außenansicht	haus.jpeg	x4	13.5.2019		

5.2.3 Dynamically Configurable Human Tasks

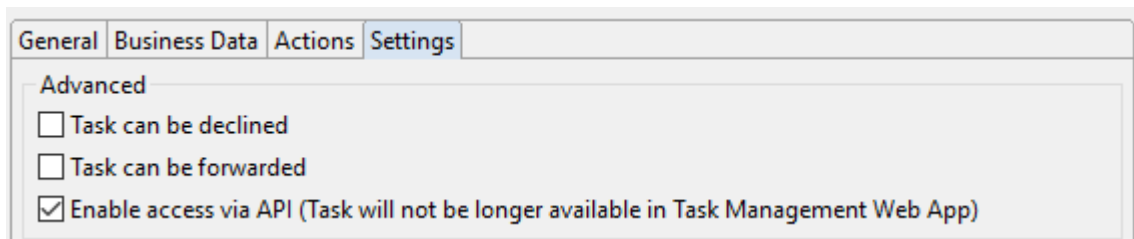
Now, human tasks can be configured both via the *Human Task Editor* and dynamically using technical processes. The corresponding process is created and managed via the *Human Task Editor* and saved directly under the corresponding BPM process.

Approval of electronic invoices



5.2.4 Accessing Human Tasks via API

Human tasks modeled and automated with the X4 Suite can also be accessed via an API. This allows human tasks to be displayed and edited in other applications besides the *Task Management Web App*. The web service-based interface offers all functionalities available in the *Task Management Web App* and is enabled via the property **Enable access via API** within the *Human Task Editor*.



5.3 X4 ESB: New Functions and Changes

5.3.1 New Adapters

5.3.1.1 Case Management Documents

The Case Management Documents adapter allows accessing documents which have been added to case.

5.3.1.2 Task Management

The Task Management adapter allows accessing human tasks.

5.3.1.3 XML to CSV Converter

The XML to CSV Converter enables to convert XML files to the CSV format.

5.3.1.4 **Web App Translation**

The Web App Translation adapter allows localized values for defined translation keys to be returned.

5.3.2 Changed Adapters

5.3.2.1 Apache Cassandra Connector

The Apache Cassandra Connector has been extended with the current release, now also supporting Prepared Statements.

5.3.2.2 Changed Output Format for Working Time Calculator

The output format for the Working Time Calculator's operation `AddWorkingTimeMinutes` now corresponds to the ISO date format `yyyy-MM-ddTHH:mm:ss`, e.g. `2019-12-24T21:50:00`.

5.3.2.3 User Identity Adapter

The User Identity Adapter now also outputs the set language of the user currently logged-in.

5.4 X4 Activities: New Functions and Changes

5.4.1 X4 Activities Web Apps

5.4.1.1 New Element `<TabGroup>` for Tabs in Master/Detail Components

The new element `<TabGroup>` allows tabs to be used in master, detail and overlay structure elements of master/detail components, see also Tab layout.

5.4.1.2 Dynamic Images with the Image Control Element

The image control element has a new attribute `value`. The attribute can be used with data binding, allowing graphics within an X4 Activities Web App to be displayed dynamically.

5.4.1.3 New Actions

New actions can be defined for Web applications:

- Aktion "Datei hochladen"
- Aktion "Datei herunterladen"

i The action "Download File" not only supports the download of data from a process, but also base64 type properties can be downloaded. the attribute `data` must be used instead of the attribute `process`.

Example Download Base64 File

```
<Property name="data" type="Base64"/>
...
<DownloadAction fileId="tst" fileName="test.ext" data="#data"/>
```


5.4.1.4 Changes for File Link

An inconsistency within the interface for the file link has been fixed. The previous input's structure was as follows:

```
<StringProperty name="fileId">...</StringProperty>
```

This input's structure has been adapted to all other process inputs and looks as follows:

```
<Action>  
  <StringProperty name="fileId">...</StringProperty>  
  <StringProperty name="fileName">...</StringProperty>  
</Action>
```

 Already available Web applications using the control element <FileLink> have to be checked!

5.4.1.5 New Control Element

A new control element can be defined for Web applications:

- File Upload in order to upload files to the server

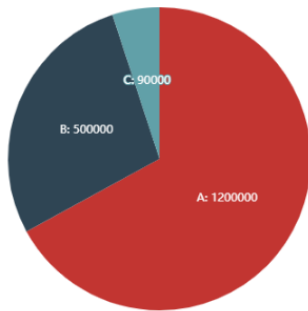
5.4.1.6 Action „Select“ Opens an External URL

The new attribute `externalLink` allows to integrate an external URL, which is opened in a new tab or window when clicking the Aktion "Auswählen".

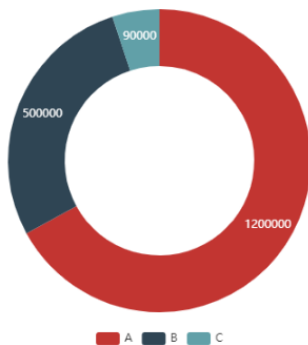
5.4.1.7 Chart Controls

Diagramme can now be integrated into X4 Activites Web Apps.

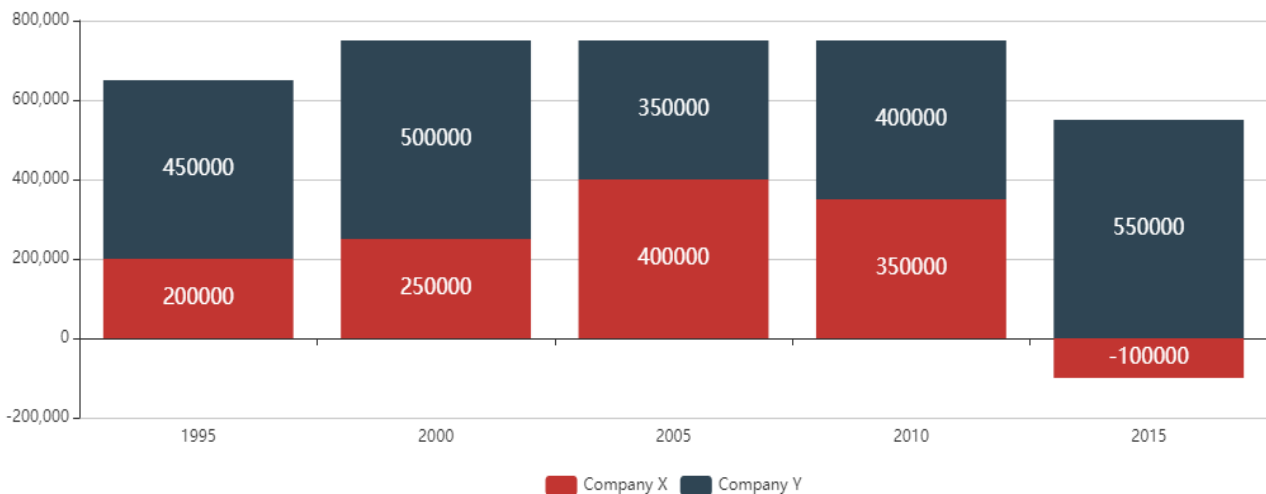
ABC-Analyse / Profit from different item groups



ABC-Analyse / Profit from different item groups



Employee Satisfaction



5.4.1.8 New Attribute showInMenu for Components

The new attribute `showInMenu` can be used to specify whether components of a web application are to be displayed in the menu.

The following values can be defined:

- `true` (default): The component is displayed by default
- `false`: The component and all sub-components are hidden

If no component is displayed in the menu, the entire menu is hidden. The content area then extends across the entire width.

5.4.2 Activities Classic

5.4.2.1 User Region in Bing Maps Widget

Now, the Bing Maps Widget supports the user region with two additional parameters for language selection.

5.4.2.2 Auto-completion for Login Dialogs

The parameter `x4p.login.disableAutocomplete` has been added to the `web.xml` of an X4 Activities Classic application, see also Application-specific configuration. The parameter can be used to disable auto-completion for login input fields (the HTML attribute `autocomplete="off"` is added to the input elements). The function is disabled (`false`) by default and must be explicitly enabled (`true`).

 This setting has no effect on the behavior of password managers integrated in browsers.

5.5 Bug Fixes

The following bugs were fixed with release 6.1.0 of the X4 Suite.

Technical processes: Misleading error message when executing inactive processes

The error message issued when executing inactive processes (property `in_service=false`) via a process starter has now been adapted to the issued process state -949.

Technical processes: No preselection for process validation via the context menu

Processes that are to be checked for errors via the context menu **Validate** are now preselected in the validation dialog.

Technical processes: Parallel SOAP Requests cause error

An error in the processing of parallel SOAP requests has been fixed with the current release.

X4 Designer: Files with the same name are overwritten

When importing files having the same name as already existing files, the original file was overwritten without any prior warning. This error has now been corrected.

JDBC Connector: Error when using the parameter *connectionURL*

Using the *JDBC Connector* with the parameter `connectionURL` caused a problem with connection pooling. This bug has been fixed in this version.

GDV Message Writer: Errors in handling absolute paths

The *GDV Message Writer* can now handle absolute paths as usual. In addition, leading slashes (/) in the path are also resolved correctly.

Adapter: Adapter parameter Password is displayed in plain text

Adapter parameters representing a password are no longer displayed in plain text.

Adapter projects: Error when deleting operations in adapter definitions

An error occurring when deleting operations in the adapter definition (.nad) of an adapter project has been fixed with the current release.

Adapter Editor: Incorrect marking on licensed adapters

Due to an error, licensed adapters were displayed as unlicensed in the Adapter Editor. This error has been fixed with the current version.

Classic projects: Webservice definitions are overwritten

In Classic projects – old projects that were migrated to version 6.0.0+ – the existing web service definition was overwritten when a new web service definition was created. New web service definitions are now saved under the name specified in the save dialog.

Error handling: Missing error message for time-out error

If a time-out error occurred while executing the **Clean-Up X4 Project** function, no error message was issued in the X4 Designer. Now, a corresponding error message is displayed.

Error handling: Inappropriate error message when importing projects

If an error occurs when importing manually zipped projects to the X4 Designer, a corresponding error message is now displayed within the X4 Designer.

Error handling: Misleading error message when using unlicensed adapters

When using unlicensed adapters in an adapter project, a corresponding error message is now displayed within the X4 Designer when the project is packed as an adapter.

Error handling: Error message in Web App projects

Error handling in Web app projects has been improved. When errors occur in a `.dpr`-, `.imprint`- or `.wad` file, a corresponding error message is now displayed within the X4 Designer.

Webservice Configuration Editor: Incorrect SOAP version is set

An error occurring when setting the SOAP version in the *Webservice Configuration Editor* has been fixed with the current release.

XSL Editor: XML input cannot be assigned

XML inputs can now be assigned as usual via the context menu **Assign Input**.

XSLT Editor: Custom sorting of attributes is changed

After saving an XSLT file with a custom attribute sorting, the sorting was changed when the file was reopened. This bug has now been fixed.

X4 Control Center: Incorrect sorting for instances

All instances displayed in the X4 Control Center (dashboard and instance view) are now sorted in descending order based on the start date.

X4 Control Center: Password fields are filled in automatically

For administrators in the user and rights management, passwords of other users were automatically filled with the password stored in the browser. This error has been fixed.

X4 Activities Web Apps: Internet Explorer error for internationalized applications

When using the Internet Explorer for internationalized web applications, a caching error occurred, so that only the first defined language was displayed. For internationalized pages, the languages can now be switched as expected.

X4 Activities Web Apps: Server error when navigating via buttons

Navigating to a sub-component using action buttons is now possible.

X4 Activities Web Apps: Display problems in Internet Explorer

A display error occurring in Internet Explorer for list components has been fixed.

Activities Classic: Multiple opening of error dialogs

Previously, multiple error dialogs were opened when the same error occurred multiple times in a Web applications. Now, only one dialog is opened per error category and the number of errors of this type is displayed in the dialog header.

Activities Classic: Error when uploading deleted files

After deleting an uploaded file, the file could not be uploaded again immediately. This error has now been fixed.

Activities Classic: Error when opening the preview

When creating an example project using the X4 Web Designer, an error occurred, if the Open Preview function was used. This error has now been fixed.

5.6 Discontinued Functions

5.6.1 Discontinued X4 Server Services

The configuration file `X4config.xml` allows various X4 Server services to be enabled and disabled within the element `server > services`. With the current release, the following configuration elements have been removed from the file:

- `<quartzschedulerDS>`
- `<watchdog>`
- `<remoteevents>`



To avoid errors when starting the server, make sure you are using a current configuration file or that you have deleted the discontinued services from your configuration file.

6 Release Notes 6.0.5

The following bugs have been fixed with X4 Suite version 6.0.5:

6.1 Adapters

Processes cannot be debugged with some adapters

Some adapters had problems with the debug mode. Thus, processes that contained these adapters could not be executed in debug mode. This bug has been fixed.

FTP Transfer: No error message if file was missing

If the corresponding file was not found when sending or receiving a file, no error message was issued. This bug has been fixed.

PDF Merger: Wrong sorting

The *PDF Merger* adapter sorted pages alphanumerically, not numerically. This caused PDF files with multiple pages to be output in the wrong order. This bug has been fixed.

JDBC Connector: Error Message for Prepared Statements in SQLite Database

If prepared statements were executed for an SQLite database, an error message was issued and the statement was not executed. This bug has been fixed.

File System: Data loss during *Append* operation

If two processes appended data to the same file using the operation *Append*, data could be lost. This bug has been fixed.

IMAP: Error message for operation *Move*

If an e-mail should be moved using the *Move* operation of the adapter, an error message appeared even though the e-mail was moved. This bug has been fixed.

IMAP: Error with empty optional parameter *maxMessages*

If the optional parameter *maxMessages* was not filled, an error message was displayed in the server log. This bug has been fixed.

Microsoft Excel Writer: Typo in the *FillTemplate* attribute

There was a typo with the allowed values of the attribute *FillTemplate*. *VericalAlignment* was used instead of *verticalAlignment*. This bug has been fixed.

Microsoft Excel Writer: Error using empty cells

If no value was defined for a cell during the *FillTemplate* operation, e.g. to adjust only a formatting, an error message appeared. This bug has been fixed.

XML Signature: Problems with the operation *Check signature*

An error message appeared in the server log during the operation *Check signature* and the operation was not executed. This bug has been fixed.

Bing Maps: Missing parameters

No parameters were displayed for the Adapter *Bing Maps*. This bug has been fixed.

Microsoft Azure Blob Storage Connector: Error during some operations

Some operations could not be executed with the Microsoft Azure Blob Storage Connector due to certain access rights settings. This bug has been fixed.

CSV Converter: Converting CSV files with Byte Order Mark (BOM) causes problems

XML files converted with the CSV Converter from CSV files with Byte Order Mark could not be opened in X4 Designer and could not be processed in processes. This bug has been fixed.



The Byte Order Mark is now removed when a CSV file with BOM is processed with X4 Suite.

6.2 X4 Control Center

Differing times in the scheduler

If a new execution was created in the Scheduler, the time was partially displayed in a different time zone in the execution overview. This bug has been fixed.

Display error within User Management

In the X4 Control Center's User Management, the data for available groups was displayed even though the Role Administration tab was selected. This bug has been fixed.

Error message when opening the Application Listener

Since the capitalization was respected in files, an error message occurred when opening the Application Listener. This bug has been fixed.

Error when validating e-mail addresses

E-mail addresses that consist of a single letter before the "@" have been invalidated by the X4 Control Center even though they are allowed by the standard. This bug has been fixed.

Erroneous umlauts in the e-mail with reset password

If the password was reset in the X4 Control Center, the umlauts were not displayed correctly in the corresponding e-mail. This bug has been fixed.

Dashboard does not work if files are excluded in the project

If files were excluded in a project, the dashboard did not work. This bug has been fixed.

6.3 X4 Designer

Problems when updating the X4 Designer

If the repository was updated in the X4 Designer and a file was opened by double-clicking, sometimes all other files were no longer displayed in the Repository Navigator. This bug has been fixed.

Activity within a BPMN process cannot be deleted after debugging

After debugging BPMN processes, activities within this process could no longer be directly deleted. Deletion was only possible, if the process was closed and reopened. This bug has been fixed.

Incorrect display when changing licenses

If you switched from a license that contained the *Adapter Development Kit* (ADK) to a license without ADK license, adapters that were no longer licensed were still displayed as licensed. This bug has been fixed.

Missing Undo/Redo buttons

When editing XML or XSLT files, no buttons were displayed for the *Undo* or *Redo* functions, although the functionality was available. This bug has been fixed.

Incorrect display of the *Export Configuration* icon

The icon for the *Export Configuration* function was displayed incorrectly. This bug has been fixed.

Project cannot be created via tool bar

In X4 Designer, a new project could not be created using the corresponding button in the tool bar. This bug has been fixed. Now new files can be created via the tool bar button and only files that are allowed in the currently selected folder are offered.

Message "SUCCESSFULLY" in server log incorrect

Due to a different font "SUCCESSFULLY" was not readable in the server log of the X4 Designer at server start. This bug has been fixed.

Problems restoring the default view

If the Repository Navigator was closed in X4 Designer and the default view was restored, an error message was issued. The same error message was displayed when the window was added again using the view settings. This error has been fixed.

Wrong tool-tip for Connection

In the palette of the BPM Editor the tool-tip of the *Connector* was displayed for the *Connection* component. This bug has been fixed.

Renamed process are not reopened automatically

If an opened process was closed during renaming, it was not reopened automatically. This bug has been fixed.

Missing labels for process landscapes (PLD)

If a process landscape (.pld) was copied to the clipboard or exported as a png file, the labels were not transferred. This bug has been fixed.

Copy and paste of rule components corrupted BPM processes

If a rule component was copied and pasted in a BPM process, the process could no longer be opened. This bug has been fixed.

No update in the Webservice Configuration Editor when moving a process

If a process was moved from one project to another, the path in the Webservice Configuration Editor was not automatically updated. The path in the Webservice Configuration Editor was not updated until the editor was manually closed and reopened. Multiple changes could result in incorrect paths being saved. This bug has been fixed.

Display problems when editing statement files

If a statement file was opened in the database editor, then sometimes no or not the complete database structure was displayed. This bug has been fixed.

Problems using the database editor with SQLite databases

Problems occurred when using the database editor with SQLite databases. If the JDBC Connector to be used was dragged and dropped into the field for the database connection, an error message was displayed. This bug has been fixed.

Error when executing statements

If the button *Execute Statement* for a statement was clicked in the statement editor, an error occurred and the statement was not executed. This bug has been fixed.

6.4 X4 Activities Web Apps

Properties could contain an umlaut or "ß" in the name

Properties could contain umlauts and "ß" in the name. However, these characters are not supported and web application did not work. A validation for property names was added, now only allowing the letters a-z, A-Z and numbers from 1-9.

Controls in Web Apps ignore the attribute *verticalAlign*

The attribute *verticalAlign* for control elements within X4 Activities Web Apps had wrong values and no influence on the display within the Web application. This bug has been fixed. The attribute was removed.

Redundant scroll bar in Web App navigation for nested components

If nested components were used in a Web App, a horizontal scroll bar was displayed in the navigation of the Web App. This bug has been fixed.

Home bar indicator on iPad Pro overlays buttons

For certain Apple devices (iPad Pro, iPhone X, iPhone XS, iPhone 11, iPhone 11 Pro), the Home bar indicator overlaid the action buttons in the Web App and they could no longer be used. This bug has been fixed.

Display error in detail structure element

If a search without result is executed in the list structure element of a master/detail component, the data of the previously selected entry was still displayed in the detail area of the component. This bug has been corrected.

Inconsistent size of controls

The size of the controls within the same layout was different. This bug has been fixed.

Error returning an empty property of type *Decimal*

If a property of type *Decimal* without value was returned, an error message appeared. This error has been fixed.

Delete action does not work for DateTime picker

The delete action had no effect on the content of the DateTime picker. This bug has been fixed.

Problems loading a list component using a button

If a list component was updated or loaded via button, it could happen that the Web App did not react anymore. This bug has been fixed.

Loading display does not disappear

The loading display in the list component didn't disappear, if no data was found. This bug has been fixed.

Display problems with the scroll bar

If a detail component was higher than the container, it could happen that the scrollbar was not fully displayed. As a result, the entire content could not be displayed. This bug has been fixed.

Error in template „Web App Controls Tutorial“

Due to an error in the "Web App Controls Tutorial" project template, the *New* and *Update* actions did not work correctly. This bug has been fixed.

Dynamic setting of parameter *componentName* does not work in list component

If the parameter *componentName* is to be set dynamically in a list component and loaded from a process, an incorrect value has been entered. This bug has been fixed.

6.5 X4 Activities Classic

No new files can be created for migrated projects

If an web portal project was migrated, no new files could be added. This bug has been fixed.

6.6 X4 Server

Comments are lost during project import

When importing Web App projects, the comments in the *.wad file were lost. This bug has been fixed.

Problems with the migration tool

The migration tool for updates to version 6.0 had problems with UUIDs, so that the update was partially not performed. This bug has been fixed.

Help text in the migration tool

The help text in the migration tool for the parameter "-v" was slightly misleading and contained a syntax error. This bug has been fixed. The help text has been improved.

Problems with the migration of processes with relative paths

If the migration tool for updating the X4 Suite installation was called with a relative path, the project file was not created correctly and migrated projects could not be opened. This bug has been fixed.

Error message at server startup due to empty custom placeholder

An error message was issued at server startup due to an empty custom placeholder. The error prevented the Custom Placeholder Manager from being opened and the value from being corrected via the user interface. This only affected systems with Oracle DB. This bug has been fixed.

Error message after deleting a Web App project

If a JDBC URL was used for the database connection, error messages were issued after deleting a Web App project because the automatic update did not work. This bug has been fixed.

7 Release Notes 6.0.4

The following errors have been fixed with release 6.0.4 of the X4 Suite:

Migration tool: Folders with a dot in the name are migrated

The migration tool also migrated folders with a dot in their name, such as .git or .svn. Due to this unwanted behavior, these folders appeared as a project in the X4 Designer after the migration. This problem has been fixed, folders with a dot in their name are ignored during migration.

Adapter: Empty output adapter outputs the input instead of an empty output

The empty output adapter output the input instead of an empty output. This error has been fixed.

Adapter projects: Name and Process required for operations can be empty

For adapter projects, the specifications Name and Process are required for operations. Despite this, no error message appeared if any of these fields were left blank and the project could be saved. Now a corresponding error message is displayed.

Adapter projects: Error while saving

Adapter projects could be saved without an error message if a process was defined in the operation that did not exist. This problem has been fixed, now a corresponding error message is displayed.

X4 Web Designer: Wrong error in the X4 Web Designer

There was a wrong error in the X4 Web Designer. This problem has been fixed.

X4 Web Designer: Opening the sample project in Internet Explorer 11 leads to error message

If the sample project was opened in the X4 Web Designer in Internet Explorer 11, an error message was displayed in the X4 Server Log. This problem has been fixed.

X4 Activities Web Apps: Problems in project template „Customer Relationship Management / Simple CRM“

If references of a customer were deleted in the project template "Simple CRM", e.g. the country assignment, then the customer was also deleted. This error has been fixed.

X4 Activities Web Apps: Problems in project template "Basic Tutorials / Web App Controls Tutorial"

There were several problems in the project template “Web App Controls Tutorial”. The element `<FileLink>` had no function and if an entry was deleted from a list in the Web App, all entries were deleted. These problems have been fixed.

Server: Problems with folder names in the X4 Repository

If a folder existed in the X4 repository whose folder name began with a dot, then no files were recognized in the X4 repository at all. This problem has been fixed.

Server: Problems when updating via the Red Hat installation package

After updating the X4 Server via the Red Hat installation package, some files from the previous version were still available. This problem has been fixed. Backup copies of older installations are now created in the subfolder `opt/x4_backups`.

Server: Problems when updating via the Suse Linux installation package

After updating the X4 Server via the Suse Linux installation package, some files from the previous version were still available. This problem has been fixed. Backup copies of older installations are now created in the subfolder `opt/x4_backups`.

8 Release Notes 6.0.3

The following errors have been fixed with release 6.0.3 of the X4 Suite.

Adapter: GDV Message Reader does not process attachments correctly

For messages with more than one attachment the GDV Message Reader did not output the last attachment of the message. This error occurred in the GDV version 2013. Attachments are now processed and output as expected.

Adapter: Adapter projects can contain multiple adapter definitions.

Due to an error, more than one adapter definition (.nad) could be created in adapter projects. This error has now been corrected.

Incorrect deletion of projects

In rare cases, an error occurred when deleting projects, and the corresponding projects were hidden in the Repository Navigator but not deleted from the file system. Neither a corresponding error message was displayed. This has now been fixed.

Mapping Editor: Delayed response in the Design view

When using the Mapping Editor in the Design view, there was a delayed response when elements were clicked. This error occurred under Citrix XenApp and Citrix XenDesktop and has now been fixed.

Extension of the migration tool

The migration tool has been extended in order to avoid errors when executing adapters for which no operations have been set. This error only occurred when no migration scripts were executed when updating to X4 Suite versions < 5.5.0.

X4 Control Center: Error after logging in to X4 Control Center

After successfully logging in to the X4 Control Center an error message about missing permissions was displayed. This error was corrected with the current release.

X4 Control Center: Error when saving e-mail addresses

If a user account was created without an e-mail address and a limited validity period, the e-mail address could no longer be saved afterwards. This error has now been fixed.

X4 Activities Web Apps: Misleading message after successful saving of entries

After successfully editing and saving entries within detail components, the message "Do you really want to leave this page?" is no longer displayed when clicking on a new entry.

X4 Activities Web Apps: Web app projects can contain multiple web app definitions

Due to an error, more than one web app definition (.wad) could be created in web app projects. This error has now been corrected.

X4 Web Designer: Missing adapter definitions in sample projects

All adapter definitions are now delivered in the sample projects of the X4 Web Designer.

X4 Web Designer: Error message when uploading documents

When uploading documents in Internet Explorer, an error message was previously displayed even though the document was uploaded correctly. This error has now been corrected.

9 Release Notes 6.0.2

9.1 New Features 6.0.2

Refreshing Files in the X4 Repository

There is now only one update function left in the X4 Designer. This function corresponds to a server-side update, in which the repository is first updated in the server and then transferred to the X4 Designer.

Project Migration when Importing Projects

Projects can now be imported even if the version of the project to be imported does not match the version of the existing X4 Suite installation. Projects are migrated automatically during import.

9.2 Bug Fixes 6.0.2

Cobol Copybook Wizard: Problems

The errors related to Drag & Drop in the Cobol Copybook Wizard have been fixed. Now the cpy file or the output file can be added by Drag & Drop. In addition, the destination folder for the output file can now be selected and the wizard saves the last settings. The TempResult file is automatically updated when it is regenerated.

Inline Content Expander: Problems with Linebreaks

If the body element contained line breaks, difficulties arose when using the Inline Content Expander adapter. This problem has been solved.

SAP Adapter: Debugging Problems

Processes in which the SAP Adapter was used experienced difficulties during debugging. This problem has been solved.

BCrypt Calculator Adapter: Typo in Output

There was a typo in the output of the BCrypt Calculator Adapter. This error has been fixed.

Designer: Problems with the Hierarchy

When displaying the hierarchy using **Call Hierarchy**, no hierarchy was displayed. This problem has been solved.

Designer: Problems with Rename / View Call Hierarchy

Errors could occur when using the **Rename/Refactor** and **View Call Hierarchy** functions. This problem has been solved.

Designer: Problems with Folder Names that Contain a Dot

If a folder was created whose name contains one or more dots, the characters after the last dot were truncated. This problem has been fixed.

Designer: Problems with the "In Service" Flag

If the "In Service" flag was deactivated in a process and the process was started via the X4 Control Center, problems occurred. This problem has been solved.

Designer: Problems Opening Processes from the Process Validator

If a process was opened from the process validator, changes in that process were not saved. This problem has been fixed.

Designer: Process Validator Does not Work for BPM Processes

The process validator could be started for BPM processes via the validation wizard, but did not output any results. This problem has been fixed.

Designer: Problems with the Undo Function for Human Tasks

If a Human Task was deleted and restored with Ctrl+Z, all settings were deleted. This problem has been fixed.

Designer/Server: Error with References if ReST config file is missing

If the ReSt config file did not exist, errors occurred when searching and updating references. This problem has been solved.

Activities Web Apps: No Paging in Overlay

Paging within a list component that was contained in an overlay did not work. This problem has been solved.

Activities Classic: Action „Upload Files“ in the X4 Web Designer did not work

The "Upload Files" action in the X4 Web Designer now not only inserts files into the destination folder, but also inserts them back into the project file.

X4 Control Center: Validity Period in User Management

Previously, a date could be entered for the **Valid until** field that was before the **Valid from** date. This problem has been solved.

Server: Problems with JNDI Registration

The JNDI registration caused error messages when shutting down the server. This problem has been solved.

Server: Error when the controlcenter Attribute is Missing

If the `controlcenter` attribute was missing during logging, an error message was issued so far. Now logging is switched off if the `controlcenter` attribute is missing.

Server: Error with Missing JCo Libraries

If the server was stopped and no JCo libraries are included in the system, error messages were displayed in the server log. This problem has been fixed.

Server: Faulty Back-up of the Debian Installation Package

During a Debian installation, an attempt was made to back up a file with an incorrect file path. This did not create a back-up of a single file. This problem has been fixed.

Integration Flows (Technical Processes): Misleading error message when executing inactive processes

The error message issued when executing inactive processes (property `in_service=false`) via a process starter has now been adapted to the issued process state -949.

Integration Flows (Technical Processes): No preselection for process validation via the context menu

Processes that are to be checked for errors via the context menu **Validate** are now preselected in the validation dialog.

Integration Flows (Technical Processes): Parallel SOAP Requests cause error

An error in the processing of parallel SOAP requests has been fixed with the current release.

X4 Designer: Files with the same name are overwritten

When importing files having the same name as already existing files, the original file was overwritten without any prior warning. This error has now been corrected.

JDBC Connector: Error when using the parameter *connectionURL*

Using the *JDBC Connector* with the parameter *connectionURL* caused a problem with connection pooling. This bug has been fixed in this version.

GDV Message Writer: Errors in handling absolute paths

The *GDV Message Writer* can now handle absolute paths as usual. In addition, leading slashes (/) in the path are also resolved correctly.

Adapter: Adapter parameter Password is displayed in plain text

Adapter parameters representing a password are no longer displayed in plain text.

Adapter projects: Error when deleting operations in adapter definitions

An error occurring when deleting operations in the adapter definition (.nad) of an adapter project has been fixed with the current release.

Adapter Editor: Incorrect marking on licensed adapters

Due to an error, licensed adapters were displayed as unlicensed in the Adapter Editor. This error has been fixed with the current version.

Classic projects: Webservice definitions are overwritten

In Classic projects – old projects that were migrated to version 6.0.0+ – the existing web service definition was overwritten when a new web service definition was created. New web service definitions are now saved under the name specified in the save dialog.

Error handling: Missing error message for time-out error

If a time-out error occurred while executing the **Clean-Up X4 Project** function, no error message was issued in the X4 Designer. Now, a corresponding error message is displayed.

Error handling: Misleading error message when importing projects

If an error occurs when importing manually zipped projects to the X4 Designer, a corresponding error message is now displayed within the X4 Designer.

Error handling: Misleading error message when using unlicensed adapters

When using unlicensed adapters in an adapter project, a corresponding error message is now displayed within the X4 Designer when the project is packed as an adapter.

Error handling: Error message in Web App projects

Error handling in Web app projects has been improved. When errors occur in a `.dpr-`, `.imprint-` or `.wad` file, a corresponding error message is now displayed within the X4 Designer.

Webservice Configuration Editor: Incorrect SOAP version is set

An error occurring when setting the SOAP version in the *Webservice Configuration Editor* has been fixed with the current release.

XSL Editor: XML input cannot be assigned

XML inputs can now be assigned as usual via the context menu **Assign Input**.

XSLT Editor: Custom sorting of attributes is changed

After saving an XSLT file with a custom attribute sorting, the sorting was changed when the file was reopened. This bug has now been fixed.

X4 Control Center: Incorrect sorting for instances

All instances displayed in the X4 Control Center (dashboard and instance view) are now sorted in descending order based on the start date.

X4 Control Center: Problems with AutoFill

For administrators in the user and rights management fields were sometimes filled automatically. This error has been fixed.

X4 Activities Web Apps: Server error when navigating via buttons

Navigating to a sub-component using action buttons is now possible.

X4 Activities Web Apps: Display problems in Internet Explorer

A display error occurring in Internet Explorer for list components has been fixed.

Activities Classic: Multiple opening of error dialogs

Previously, multiple error dialogs were opened when the same error occurred multiple times in a Web applications. Now, only one dialog is opened per error category and the number of errors of this type is displayed in the dialog header.

Activities Classic: Error when uploading deleted files in the X4 Web Designer

After deleting an uploaded file in the X4 Web Designer, the file could not be uploaded again immediately. This error has now been fixed.

Activities Classic: Error when opening the preview in the X4 Web Designer

When creating an example project using the X4 Web Designer, an error occurred, if the Open Preview function was used. This error has now been fixed.

10 Release Notes 6.0.1

The following errors were fixed with release 6.0.1 of the X4 Suite.

Error when terminating and restarting services

When installing the X4 Suite as a service, services could no longer be properly terminated and restarted due to an error. This error has now been fixed.

Processes in web service definitions can't be renamed

In X4 Suite version 6.0.0 processes within web service definitions (.wsinc) could not be renamed and the function Call Hierarchy was ignored. This bug has now been fixed.

Migration error when using the Oracle database

When executing the migration tool, an error occurred when using an Oracle system database <12.2. The migration can now be performed correctly again.

Error within PDF Report template

An error has been fixed within the PDF Report template A4_landscape.rep.

Deleting files within classic projects causes error

An error occurring when deleting files within classic projects has been fixed with the current X4 Suite version.

Keyboard shortcuts for copy and paste cannot be used for projects

An error occurring when copying and pasting projects using the keyboard shortcuts Ctrl+C, Ctrl+V was fixed.

UUIDs are also copied when copying projects

When copying projects, the UUID is no longer adopted, but a new UUID is generated.

Adapters are not migrated properly

When migrating adapters via the migration tool, all adapters are now properly migrated to the current version. The migration tool was revised for this purpose.

Web service configuration files can't be opened after their migration

After being migrated to the current version 6.0.0, web service configuration files (.restconfig) can now be opened with the X4 Designer as usual.

Execution time for process steps is displayed incorrectly in run/debug console

The execution time for individual process steps in the run/debug console is now displayed as in previous versions of the X4 Suite.

Operation SetFeatures causes error within the Case Management adapter

An error occurring when executing the operation SetFeatures has been fixed in the Case Management adapter.

Projects containing opened processes can not be renamed

When renaming projects, an error occurred if there were opened processes within the project. This error has now been corrected.

Files cannot be renamed if the new filename with a different case already exists.

When renaming files, an error occurred if the new file name already existed with a different upper/lower case. This error has now been corrected.

In the component X4 Activities Web Apps, the attribute disabled cannot be bound to a property

If the disabled attribute was bound to a property in the X4 Activities Web Apps component, an error occurred. This error has now been corrected.

11 Release Notes 6.0.0

11.1 Platform Updates

11.1.1 New Product Names

All components of the previous X4 BPM Suite – i.e. X4 ESB, X4 BPM and X4 Activities and their respective tools – will be aggregated under the product name *X4 Suite*. Moreover, the spelling of the X4 Control Center has been standardized with regard to other tools such as the X4 Web Designer.

11.1.2 Designer Installation Package

The X4 Designer can now be installed via its own installation package, see Installing, updating and uninstalling the X4 Designer.

11.1.3 New Server Installation Packages

New X4 Server installation packages are now provided for different operating systems:

- **Debian installation package (.deb) for Ubuntu and Debian Linux:** The console-based Debian Package Manager allows to automatically install and uninstall the X4 Server on an Ubuntu or Debian Linux system, to register and start the X4 Server as a service, and to manage the service easily, see also Installation and Update on Ubuntu/Debian Linux Systems.
- **Installation package (.rpm) for Red Hat Enterprise Linux:** The X4 Server can be installed, updated, registered as a service, started and managed automatically on a Red Hat Enterprise Linux system based on an RPM package, see also Installation and Update on Red Hat Enterprise Linux Systems.
- **Installation package (.rpm) for SuSe Linux:** The X4 Server can be installed, updated, registered as a service, started and administered automatically on an Open Suse Linux system based on an RPM package, see also Installation and Update on SuSe Linux Systems
- **Installation package (.exe) for Windows:** The installation package allows to install the X4 Server on Windows systems – if required also as NT service, see also Installing the X4 Server on Windows systems.
- **Docker-Installation package (.tar) for the X4 Server**

11.1.4 Databases

SQLite is now also supported as database. The required database drivers for the operation of the X4 Server under PostgreSQL, Microsoft SQL Server and SQLite are included in the installation package.

11.1.5 Migration Tool for Updates

A migration tool is now available to support migrations, see Installation and Migration of the System Database and the X4DB.

11.1.6 Java Update

To ensure the full functionality of the Server, Java has been updated to version 11.

11.1.7 WildFly Update

The different installation packages of the X4 Server are now based on WildFly version 14.0.1.

11.1.8 Usage of UTF-8

UTF-8 is now supported on all operating systems, e.g. in the text editor.

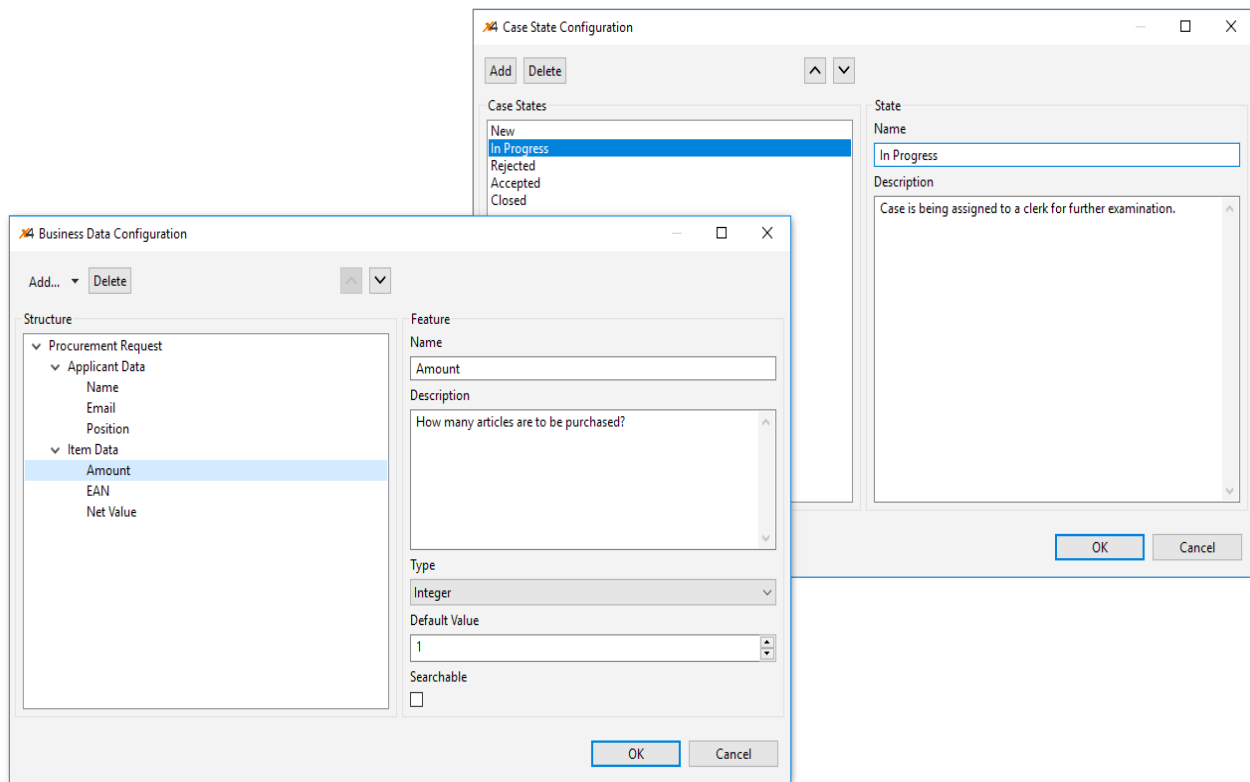
11.2 X4 BPM: New Functions and Changes

11.2.1 Case Management – Implementing Tasks and Workflows

11.2.1.1 Defining Technical Data Structure and Case States

To map processes with X4 BPM, it is necessary to define the required structure of the business data and the state values for the business process. These can now be easily defined and edited within the process properties of business processes (.bpm).

- Using the process property **Business Data**, any number of features can be created, edited and deleted in a three-level hierarchical structure – each with name, description, data type and default value.
- With the process property **Case States** any number of states can be created and deleted – each with name and description.



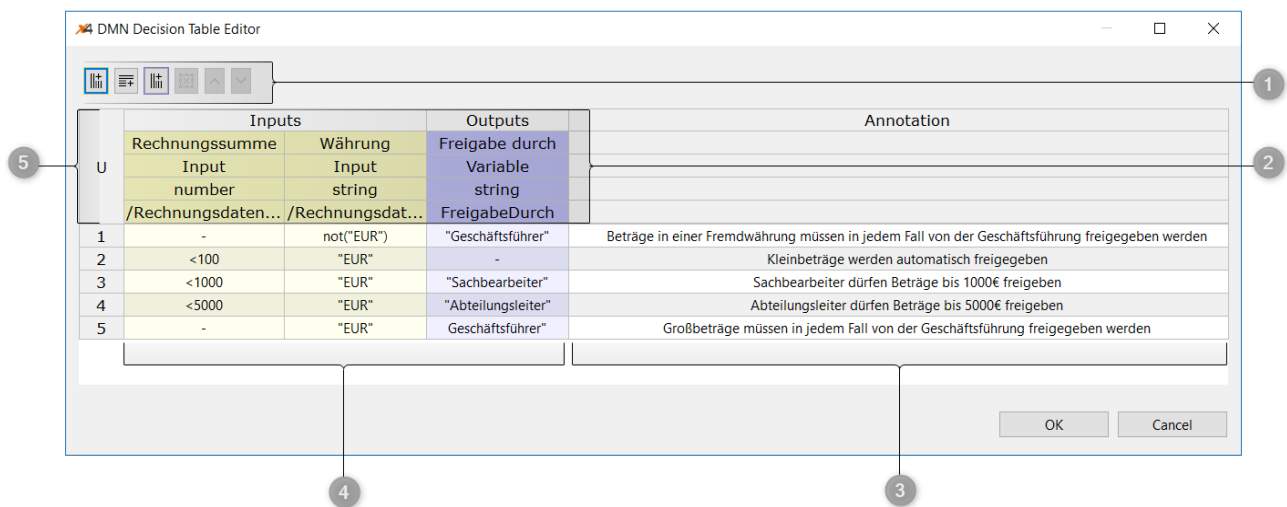
11.2.1.2 Setting Case States Dynamically in Technical Processes

The new Case Management adapter allows to set a new case state dynamically within technical processes, which are linked as subprocesses of a business process with defined process states at the runtime of the business process.

11.2.1.3 BPM Rules – Modeling Decision Tables according to DMN 1.1

In BPM Rules, decisions can be created as decision tables according to DMN 1.1. The rule component is used to insert decision tables into business processes and to define rules for decisions. BPM Rules also allows to automatically check these rules and return the result to the business process for further processing.

Rules are defined within the DMN Decision Table Editor.



1	Functions for editing decision tables
2	Settings for defining input and output
3	Free comments on the defined rules
4	Rules determining how inputs are to be transformed into outputs
5	Hit-Policy: Setting for selecting the results

11.2.1.4 Setting a Case State with Intermediate Events

The state of a case that is to be processed at the runtime of the current business process can also be set with Intermediate Events. All case state values defined process-wide are available for selection within the intermediate event's property Case State.

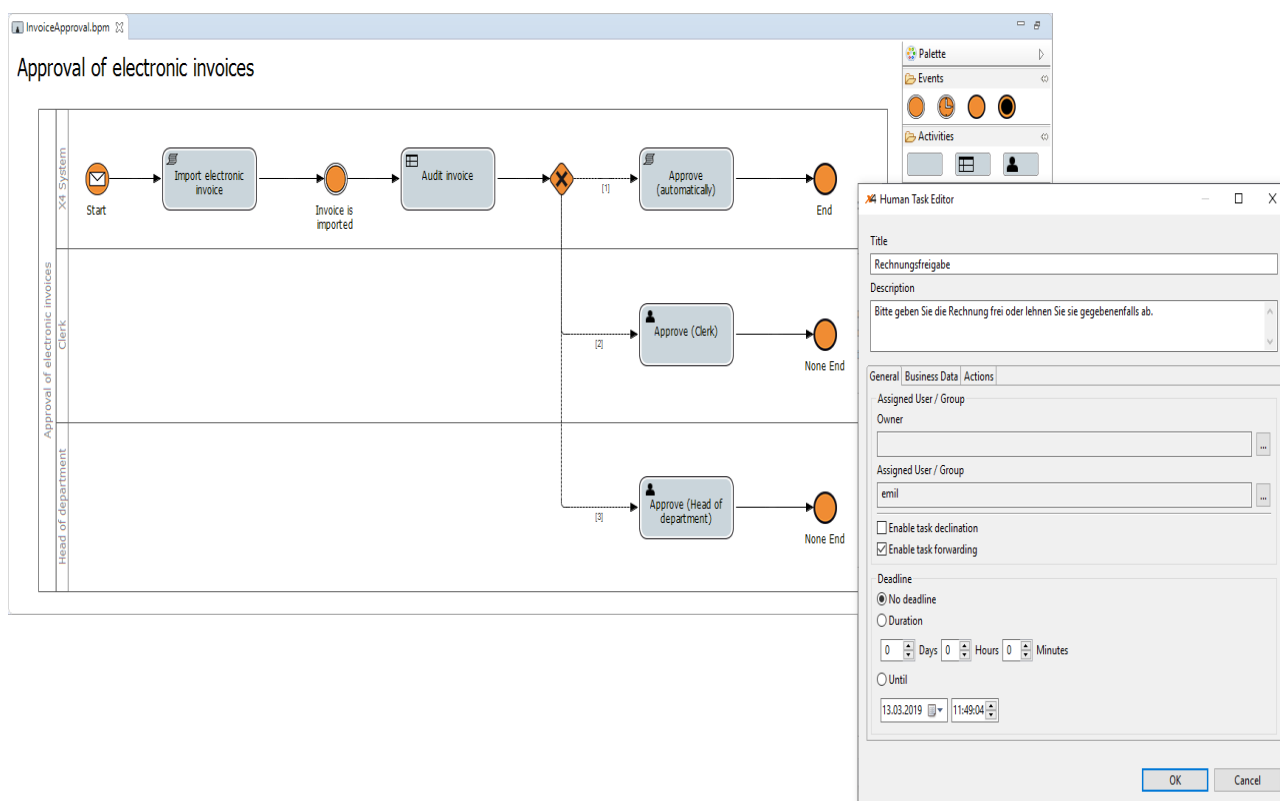
11.2.1.5 Evaluating Case States with the Condition Editor

The **Condition Editor** within the BPMN Editor has been enhanced so that process developers can now also use case states of the current business process as evaluation criteria for conditions. This means that process execution can now also be influenced based on case states by defining branches with corresponding conditions.

11.2.1.6 Defining tasks with the Human Task Editor

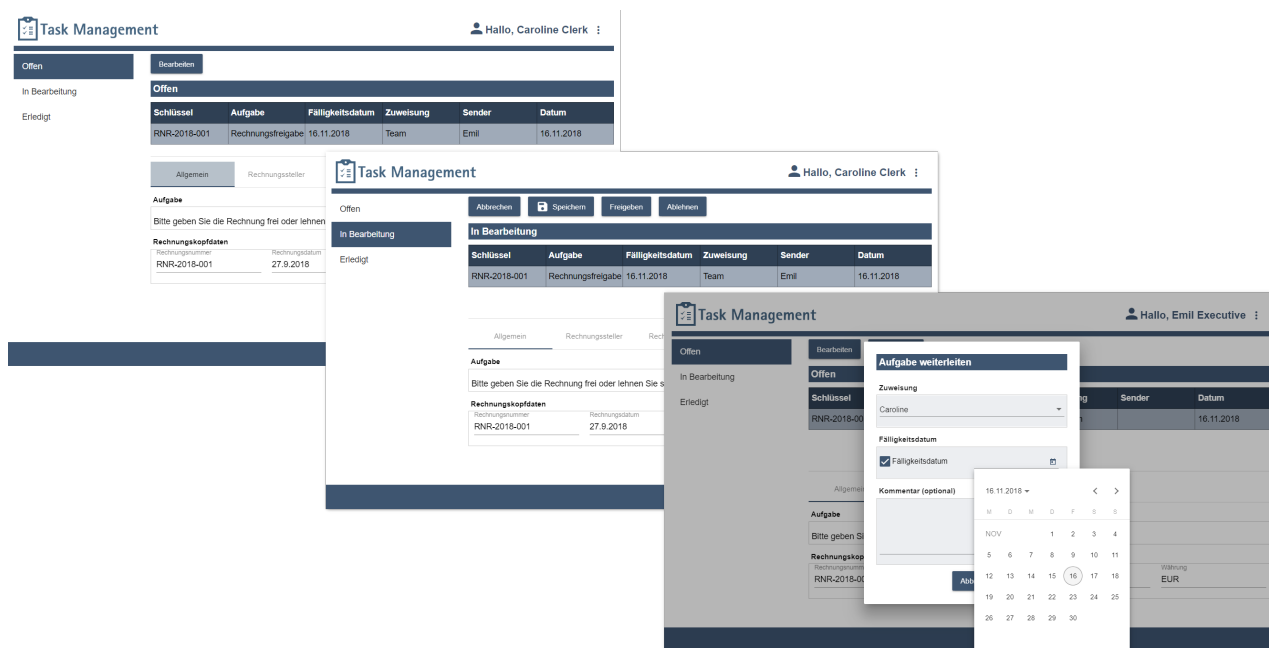
In order to better map human interactions in business processes, Human Tasks can be used to model business processes.

To simplify modeling, a new Human Task component was added to the BPMN Editor palette. The newly developed **Human Task Editor** can be opened by double-clicking on the Human Task. It enables the configuration of the Task Management Web App.



11.2.1.7 Editing Tasks in the Task Management Editor

Process participants can edit the tasks assigned to them within the Task Management interface. The configurations made in the Human Task Editor influence the appearance and the available editing options within the Task Management Web App.



11.3 X4 ESB: New Functions and Changes

11.3.1 New Functions and Changes in the X4 Server

11.3.1.1 Improved Logging Configuration for the X4 Server

The logging configuration of the X4 Server can now be easily done via the configuration file X4config.xml, see also Logging for the X4 Server and for X4 BAM.

Asynchronous Logging

X4 loggers can now also write messages asynchronously to the database, which reduces runtime of the processes. The following optional attributes can be specified:


- `async`: Defines if the messages are to be written asynchronously or synchronously.
- `queueSize`: Maximum number of messages waiting for asynchronous processing. If the queue is full, all subsequent processes that want to write messages must wait.

Authentication Cache

To ensure that user data does not have to be checked for correctness on every request, its validity can be cached for a short period if required. This reduces the load on the connected systems and significantly improves the performance and response time of the services and interfaces. The cache is valid for each security realm definition and can be deactivated if required.

Sample configuration

```
<cache>
  <!-- default values for the authentication cache -->
  <login>
    <enabled>true</enabled>
    <!-- time in seconds when the cache entry expires between two requests -->
    <accessExpiresInSeconds>10</accessExpiresInSeconds>
    <!-- time in seconds when a cache entry expires after creation -->
    <expireLatestInSeconds>60</expireLatestInSeconds>
  </login>
</cache>
```

 In case of an update the x4-client.jar under X4\Server\wildfly-10.1.0.Final\modules\system\layers\base\de\softproject\x4\client\main must be updated in order to provide this function.

11.3.1.2 Parameterizable ReSTful Web Services

For technical processes that were provided as ReSTful web service, HTTP requests can now be used more efficiently. Thus, the X4 ESB's web service interface now provides HTTP request information (e.g. HTTP header and query parameters) for each operation of a ReSTful or SOAP web service. This information is provided in the technical process's context as placeholders, when enabling option **Placeholder** for the desired service operation.

As an example, it is now possible to access the following placeholders from within XSL mappings, see [Providing ReSTful Web Services](#):

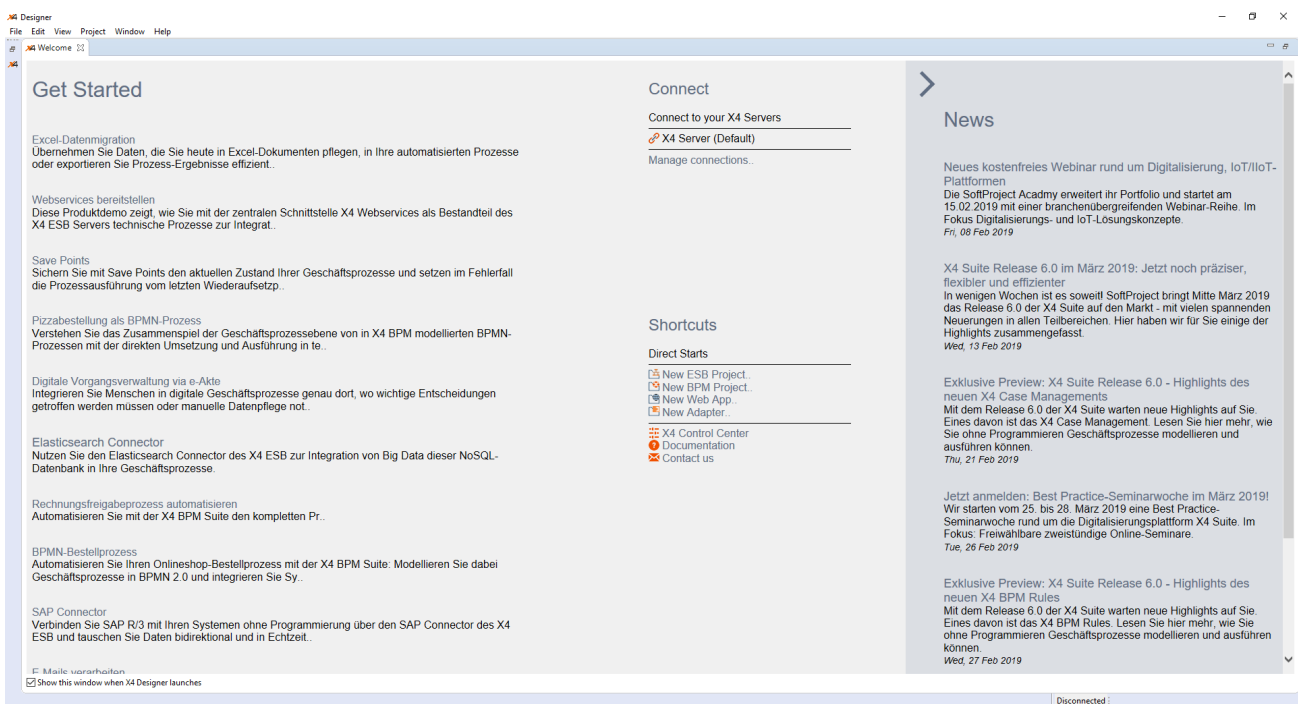
- Placeholder `%REQUEST_METHOD%` enables access to the method used in the HTTP request.
- `%REQUEST_PARAMETER_<Name>%` enables access to individual HTTP request parameter values.
- `%REQUEST_HEADER_<Name>%` enables access to individual HTTP headers.

In combination with the HTTP(S) Output Parameter adapter, it is now possible to define also output parameters for web services within technical processes.

11.3.2 New Functions and Changes in the X4 Designer

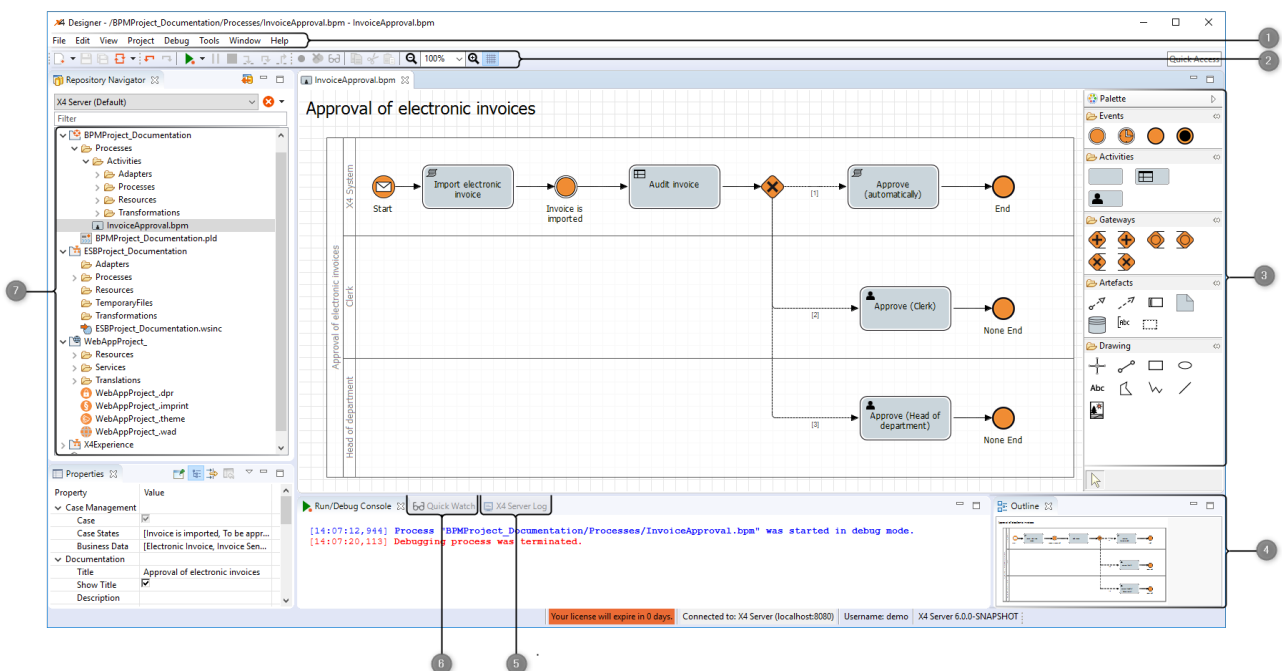
11.3.2.1 New Welcome Page in the X4 Designer

When starting the X4 Designer, users are now greeted with a new welcome page. In addition to process examples, the most important news about the X4 Suite and SoftProject are also available here. In this new section, users have access to the most important functions of the X4 Suite and can directly start modeling their processes.



11.3.2.2 X4 Designer in a New Look

With version 6.0 the X4 Designer shows itself from a new side. Beside a fundamental revision of the menu, the toolbar and the palette, the X4 Designer has now been extended by new views. This makes working with the new tool much easier, more intuitive and more efficient.



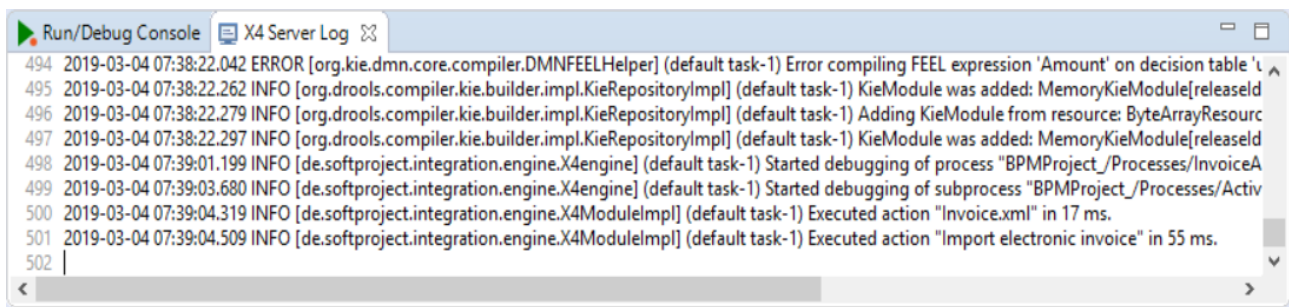
The Innovations in the Overview:

1. Revised menu
2. Toolbar with modernized icons
3. Revised palette with new components for Human Tasks and Rules
4. Outline view in which the complete process diagram is displayed as an image
5. X4 Server log view to track server status and errors in the X4 Server log from within the X4 Designer.
6. Quick Watch view to display placeholders, dynamic parameters, and context variables with their values during debugging.
7. New project types with predefined project structures to make projects more clear and concise.
8. Improved context menu adapted to the new project structure


11.3.2.3 Improved Usability

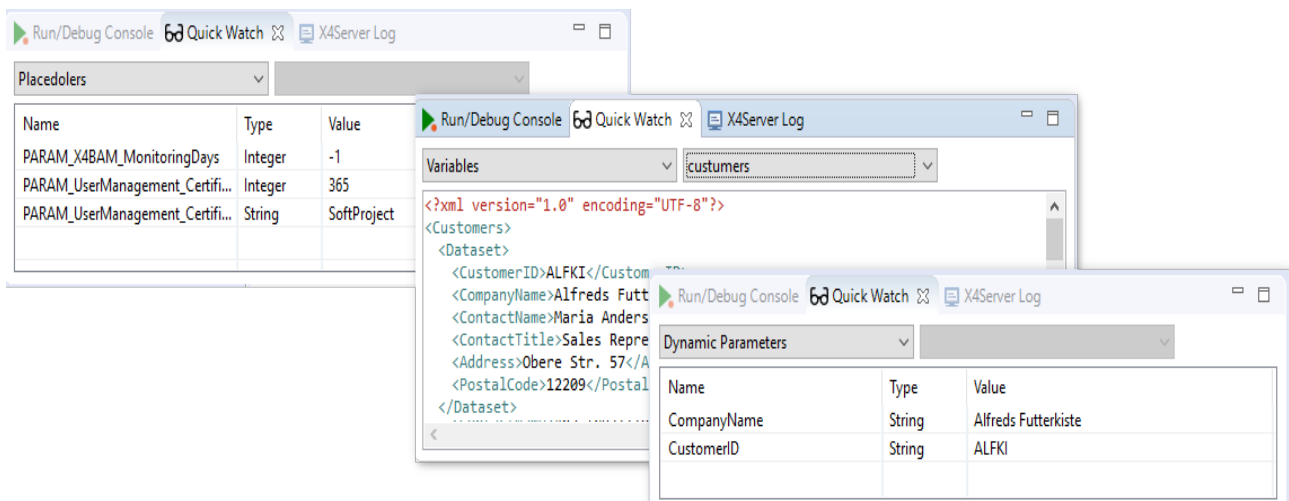
Server Log within the X4 Designer

The server log can now be opened directly in the X4 Designer as view via the menu **View > X4 Server Log**. This allows developers to track the server status and especially errors in the server log from within the X4 Designer.



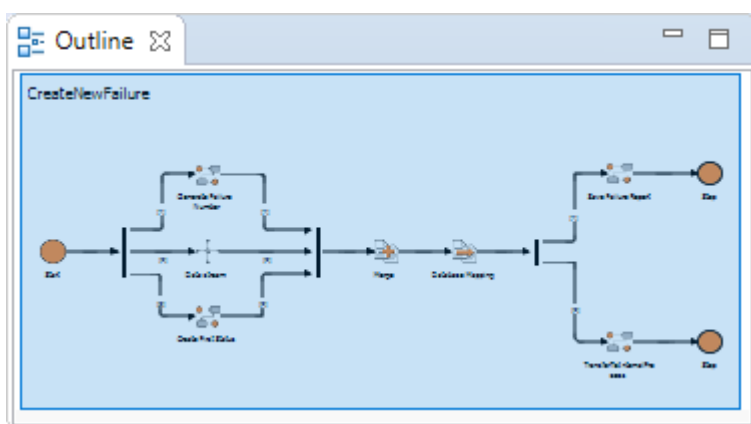
Quick Watch

The new Quick Watch view allows viewing placeholders, dynamic parameters and context variables with their values during debugging. The Quick Watch view can be accessed during debugging via menu **Debug > Quick Watch** or via the Quick Watch icon  in the toolbar.



Outline View

The revised outline view now shows the complete process diagram as an image. By clicking on the different areas of the diagram, it is easy to navigate through the process, even if it is larger than the size of the Designer window. The outline view can be accessed via the menu **View > Outline**.



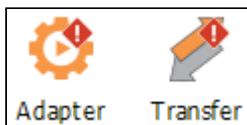
Graphical Representation of the Read/Write Operation for Document Components

To show at a glance which value was defined for the component property **Operation**, for process components of type **XML** and **Document**, it is now displayed in the component symbol, if the linked file is read or written into the technical process.



Warning in Case of Incomplete Component Configuration

In technical processes, a warning symbol is now displayed for process components that have not yet been completely configured – for example, if the **Operation** property has not yet been set for an adapter component. This means that you can now see at a glance if mandatory properties have not yet been set for process components.



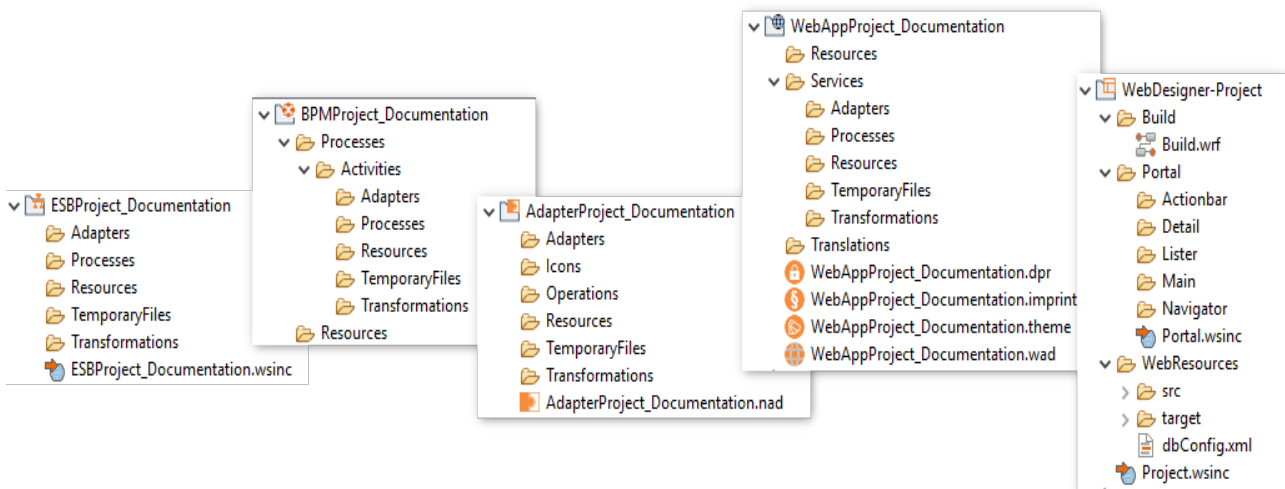
11.3.2.4 New Project Types

With the new version the X4 Designer now offers the possibility to create different project types with an already predefined folder structure. This allows projects to be clearly arranged and also supports less experienced users when working with the X4 Designer.

The following project types can be created via the menu **File > New > Project Type** or via context menu **New > Project Type**:

Project Type	Usage
ESB Project	Within ESB projects, all technical processes, the adapters used, XSL transformations, and resources that are required for creating executable technical processes are stored.
BPM Project	In BPM projects, business processes are modeled in BPM standard notation and, if required, linked to executable technical processes.
Adapter Project	Within adapter projects, new adapters for the X4 Suite can be created using the various tools of the X4 Suite. An ADK license is required to use this X4 Suite feature.
Web App Project	Web applications can be created with the X4 Suite component X4 Activities Web Apps, see also Creating and Declaring a New Web App Project. The predefined structure of the Web App project contains files for the Web App definition, the imprint, language files for multilingual interfaces, and an editor for design adjustments in the web application interface.

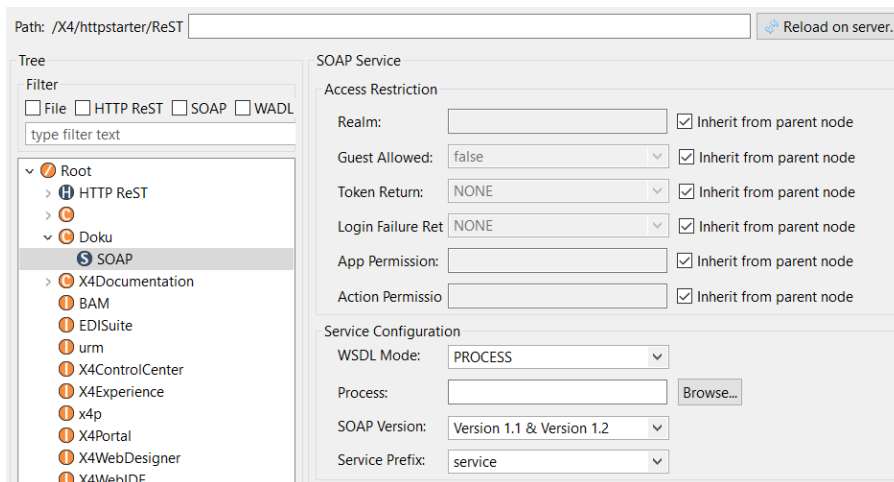
In addition, Web Portal Projects created with the X4 Web Designer are also displayed as projects in the X4 Designer.



11.3.2.5 Providing WSDL Definitions via Technical Processes

If a WSDL definition needs to be generated dynamically during runtime or if HTTP forwarding is not supported by the SOAP client, the *WebService Configuration Editor* now allows to create a WSDL definition automatically using a technical process and to return the request with HTTP content. The result of the process is returned in its original form.

In order to provide a WSDL definition, select WSDL mode PROCESS within the section **Service Configuration**.



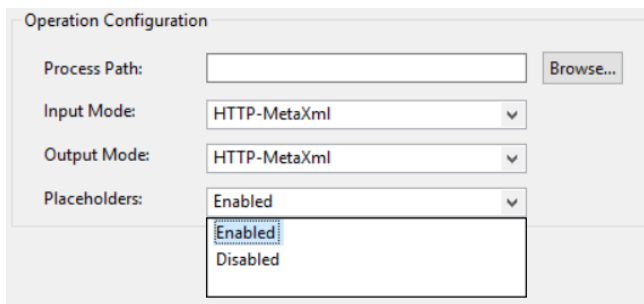
11.3.2.6 Easier Use of Placeholders

If technical processes are to be prepared for variable environmental conditions, placeholders can significantly simplify process modeling. During the runtime of the technical process, these placeholders are replaced by previously defined values. User-defined placeholders are grouped according to business or technical criteria so that they can be used specifically. For example, only the placeholders that are actually relevant for a process can be used.

With the new version 6.0.0, placeholders can now be used even more easily

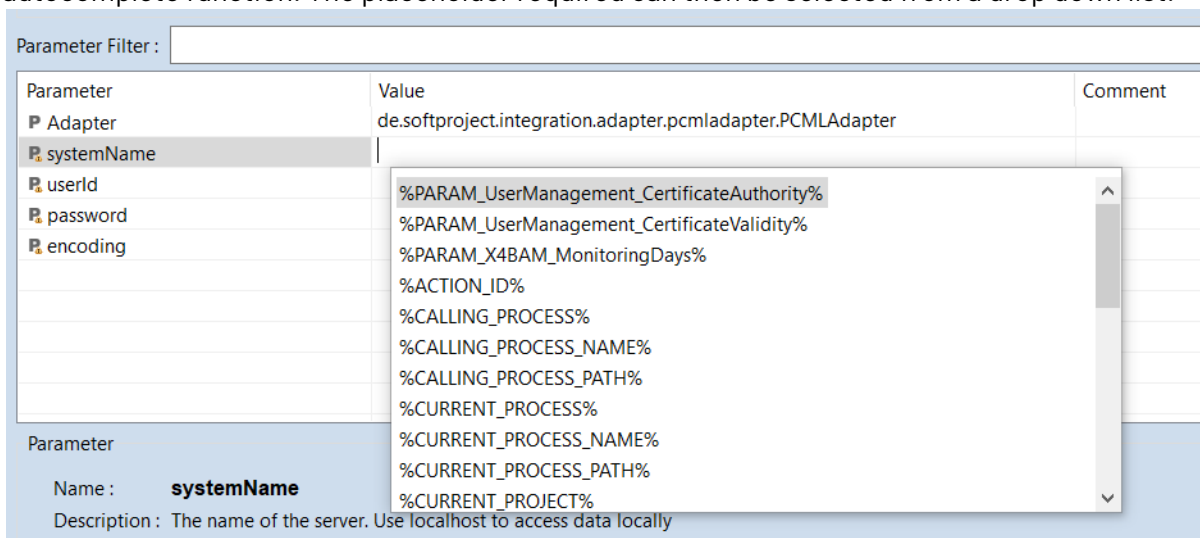
Placeholders for Web Services

Within the Webservice Configuration Editor additional placeholders can be enabled to be used exclusively for webservices. They allow enabling parameter handling for this ReSTful webservice or SOAP webservice operation, and hand over HTTP request information to the technical process context as placeholders (as a more efficient alternative to Input Mode HTTP-MetaXml), see also System Placeholders)



Placeholders in Adapters

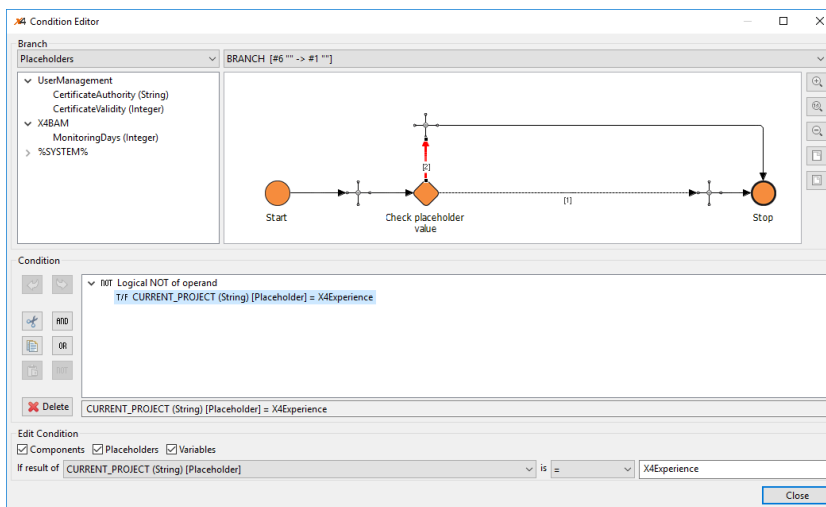
Placeholders can be used both using custom parameters in the adapter properties and for all text fields in the Adapter Editor itself. To make input easier, you can use Ctrl + Space to provide an autocomplete function. The placeholder required can then be selected from a drop down list.



Using Context Variables and Placeholders in Condition Components

In the Condition Editor, it is now possible to define conditions that consider also defined context variables in the current process, as well as currently available placeholders (system or custom placeholders), in addition to checking the execution state of process components, see Condition.

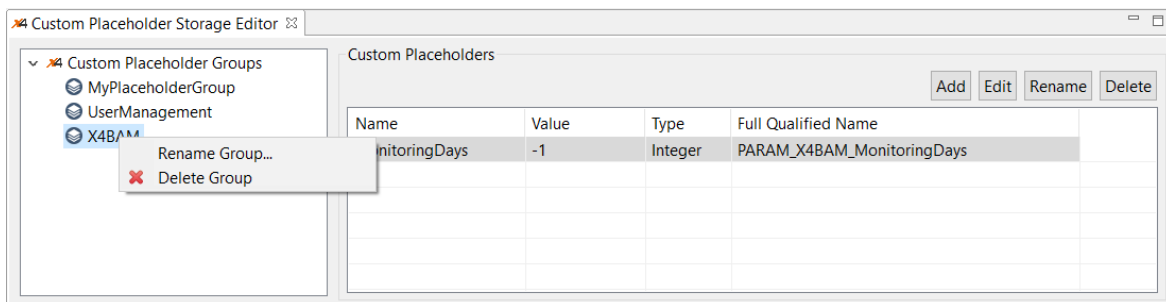
This new feature makes it much easier to model execution branches directly inside a technical process – without requiring XSL mappings with `ConditionState` instructions. In addition, by considering context variables and placeholders, process modelers can now handle far more environment-specific conditions in a quick and easy way.



In BPMN business processes, *Exclusive Gateways* you can now also evaluate context variables with the *Condition Editor*. These context variables need to be defined within technical processes that are linked to the parent business process as *Activity* or *Event*. Context variables must be initialized directly within the technical processes, not within its subprocesses.

Smart Renaming of Placeholders and Placeholder Groups

When renaming placeholders and placeholder groups within the *Custom Placeholder Storage Editor*, all references to those groups and placeholders are now updated automatically. A new wizard supports you with renaming and updating references to save time, and to avoid errors from manual adjustments, see also Managing Custom Placeholders and Placeholder Groups)



11.3.2.7 Installing Licenses during Runtime

Licenses can now also be installed during runtime before their expiry. X4 Designer provides under **Help > About X4 Designer** a dialog for this purpose. Button **New license** allows you to install a new license without shutting down the X4 Server, see *Installing licenses*.



11.3.2.8 New Counter Component

The counter component in the Process Editor palette has been fundamentally revised. For the implementation of counting loops in processes, an initial value (Start), an end value (End) and the counting steps (Step Size) can now be specified. XSLT mappings can also be used to set the properties dynamically, and the current index can be stored in a variable using `indexName`.

11.3.3 New and Modified Adapters

11.3.3.1 New Adapters

Big Data

Amazon S3 DynamoDB Connector

The Amazon S3 DynamoDB Connector connects to Amazon S3 DynamoDB, a fully managed NoSQL database service that provides fast and predictable performance with seamless scalability. The adapter stores data in Amazon S3 DynamoDB Storage and enables the use of the X4 Suite to persist data in cloud environments.

Apache Cassandra Connector

With the Apache Cassandra Connector a connection to an Apache Cassandra database can be established.

Google Cloud Storage BigTable Connector

The Google Cloud Storage BigTable Connector enables to connect to Google Cloud BigTable, a highly-available NoSQL data store that relieves the database management workload.

Cloud

Amazon S3 Simple Storage Connector

The Amazon S3 Simple Storage Connector enables a connection to the Amazon S3 Simple Storage. This allows the X4 Suite to be used to persist data in cloud environments.

Amazon SimpleDB Connector

The Amazon SimpleDB Connector enables a connection to Amazon SimpleDB, a highly available NoSQL data store that relieves the database administration workload.

Google Cloud Storage Objects Connector

The Google Cloud Storage Objects Connector allows objects in the Google Cloud to be saved, searched, downloaded and deleted.

Microsoft Azure Blob Storage

The Microsoft Azure Blob Storage Connector enables the connection to a Microsoft Azure Blob Storage.

Microsoft Azure Table Storage

The Microsoft Azure Table Storage Connector enables the connection to Microsoft Azure, a cloud computing platform from Microsoft that provides Cloud Cosmos DB Table Storage.

Compression

ZIP Converter

Zip Converter can zip and unzip files and folders in memory or in the file system. Various encryption and compression options are available for encryption.

ERP

Abas ERP Connector

The newly developed Abas ERP Connector establishes a connection to the ERP system Abas via its interface jedp.

File Processing

Transliteration Adapter

The Transliteration Adapter transliterates text from one format into another, e.g. Text aus einem Format in ein anderes, z. B. von UTF-8 nach LATIN1 (ä → ae etc.).

Insurance

Audatex DV90 Converter

The new Audatex DV90 Converter for the automotive industry reads in an Audatex DV90 calculation document and outputs its data as an XML document for structured further processing in technical processes on the X4 ESB Server.

GDV VU/VM (library)

The industry-specific GDV VU/VM library provides the insurance industry with a collection of technical processes and adapters with which data can be converted from and to XML in different versions according to the GDV VU/VM standard.

Internet of Things

IEC 61850 Client

The IEC 61850 Client connects to an MMS server and reads the device and node information. The connector thus provides a basic interface for the internationally established communication standard IEC 61850 for the automation of switchgears. It acts as a client and can receive messages as classic client-server communication.

Modbus TCP Connector

The Modbus TCP Connector connects to devices via Modbus TCP protocol.

MQTT Publisher

The MQTT Publisher enables the publishing of messages in a MQTT Broker.

The MQTT protocol provides a simple method for sending messages via a publish/subscribe model. This makes it particularly suitable for messaging in the Internet of Things environment, such as low-power sensors or mobile devices such as telephones, embedded computers or microcontrollers.

The MQTT Publisher is usually used together with the *MQTT Subscriber*.

MQTT Subscriber

The MQTT Subscriber enables to subscribe to a topic in an MQTT Broker.

The MQTT protocol provides a simple method for sending messages via a publish/subscribe model. This makes it particularly suitable for messaging in the Internet of Things environment, such as low-power sensors or mobile devices such as telephones, embedded computers or microcontrollers.

The MQTT Subscriber is usually used together with the *MQTT Publisher*.

OPC UA Client Connector

The OPC UA Publisher Adapter connects to an OPC UA Server to read or write data from/to a machine in an X4 business process.

Simatic S7 Connector

The new industry-specific SIMATIC S7 Connector for industry enables the connection of Siemens Simatic S7 from technical processes. Data can be read out from the controller as well as transmitted to it. An XML input structure can be used to determine which data is to be read or written. Simatic S7 of the 400-1500 series can be connected.

Office

WorkingTime Calculator

The Working Time Calculator can be used to calculate working times. With version 6.0 of the X4 Suite, the new adapter replaces the outdated working time calculation functions in the Java class `de.softproject.xsl.WorkingTimeCalculator`, which were provided for use within XSLT mappings.

Security

Antivirus

The Antivirus adapter connects to a ClamAV server, an open source (GPL) antivirus engine. Input files are checked for viruses at runtime of the adapter.

BCrypt Calculator

The BCrypt Calculator creates and verifies Salted BCrypt Hashes.

JSON WebToken Calculator

The JSON WebToken Calculator generates, verifies and processes JSON WebTokens.

Password Generator

The new Password Generator generates a random password based on password policies defined in the adapter parameters.

Random Number Generator

The Random Number Generator generates random numbers based on a specified configuration.

UUID Generator

The UUID Generator generates universal unique identifiers (UUIDs).

Web Services

HTTP(S) Output Parameter

The HTTP(S) Output Parameter sets additional HTTP header information or overwrites existing HTTP header information in the HTTP response of an X4 process that was called using the ReST service. This makes it possible to define output parameters for ReSTful web services.

SSH Connector

The SSH Connector connects to a SSH servers via Secure Shell Protocol.

X4 Tools

Case Management

The Case Management adapter forms the interface for the *X4 Case Management*.

X4 Projects

The X4 Projects adapter enables access to projects within the X4 repository. This adapter replaces the Repository Explorer.

Project Access

The Project Access adapter enables access to files within a project, in process libraries and adapters. This adapter replaces the Repository Explorer.

User Identity Adapter

The User Identity Adapter can be used to retrieve information about the currently logged on user, such as user name, first and last name, e-mail address, and groups to which this user is assigned.

11.3.3.2 Modified Adapters

Communication

FTP

The FTP Connector adapter has been extended by the parameters `accountInfo` and `loginCommands Url`, so that besides login and password further FTP login mechanisms are available.

Databases

JDBC-Adapter

The JDBC adapters JDBC Connector, JDBC Iterator and JDBC Metadata Explorer have been extended by additional parameters so that they can now also connect to a JDBC-compatible database using the connection URL and the corresponding credentials.

File Processing

Base64 Converter

The Base64 Converter has been extended by the parameter `encoding`, which can be used to specify the encoding used to transform a base64 encoded byte stream into a string and vice versa.

Office

Microsoft Excel Writer

The formatting of individual cells can now be controlled using various attributes with the extended Microsoft Excel Writer. Possible formatting options include font, text alignment, font style, fill color, and borders.

Microsoft Word Properties

The Microsoft Word Properties adapter has been extended to support Microsoft Word files with the extension `.docx`. The date format has also been changed.

PDF Processing

PDF Image Adder

The PDF Image Adder has been extended with a new feature that allows it not only to add graphics to an existing PDF document, but also merge graphics into a new PDF document. The graphics can be specified both as URL and as Base64 encoded string.

PDF to Image Converter

A new parameter `page` has been added to the PDF to Image Converter. This parameter can be used to define which page of the PDF document is to be output as an image.

Security

PEP Adapters

An additional parameter `positiveErrorCode` has been added to the PEP Adapter configuration. This causes the documented domain error codes (`-500`, `-503`, `-403` and `-401`) to be output as positive status values and processes do not necessarily terminate with an error message in the server log if a domain error occurs. Due to the positive status values, the process continues to run while the error can be handled.

LDAP Connector

The parameter `java.naming.referral` has been added to the LDAP Connector. With this parameter can be defined how referrals should be handled.

Web Services

HTTP(S)Connector

The HTTP(S)Connector adapter has been extended and now supports client certificates to validate the request. For this purpose, the adapter has been extended to include a parameter `useClientCertificate` and corresponding parameters for using a keystore.

The behaviour of the connector based on the Apache HttpClient in version 4 can now be individually controlled via additional parameters (`redirectsEnabled`, `circularRedirectsEnabled`, `maxRedirects`) regarding the execution of URL forwarding for a server response with HTTP status 301 Moved Permanently.

11.3.3.3 Renamed Adapters

Previous Name	New Name	Main Class	Category
AS/400 PCML Connector	AS/400 PCML	<code>de.softproject.integration.adapter.pcmladapter.PCMLAdapter</code>	Communication
DV90	Audatex DV90 Converter	<code>de.softproject.integration.nativeadapter.NativeAdapter</code>	Insurance
EDIFACT	EDIFACT Adapter	<code>de.softproject.integration.adapter.edifact.EdifactAdapter</code>	EDI
Excel Reader	Microsoft Excel Reader	<code>de.softproject.integration.adapter.excel.ExcelReader</code>	Office
Excel Writer	Microsoft Excel Writer	<code>de.softproject.integration.adapter.excel.ExcelWriter</code>	Office
Filesystem Bulk	File System Bulk	<code>de.softproject.integration.adapter.filesystem.Bulk</code>	Communication
gzip Compression	gzip Converter	<code>de.softproject.integration.adapter.GZipAdapter</code>	Compression
HTTP(S)	HTTP(S)Connector	<code>de.softproject.integration.adapter.http4.HttpClient4Adapter</code>	Web Services
LDAP	LDAP Connector	<code>de.softproject.integration.adapter.ldap.Ldap</code>	Security
Log4j Logging	Log4J Logging	<code>de.softproject.integration.adapter.log4j.Log4jAdapter</code>	X4 Tools
MongoDB	MongoDB Connector	<code>de.softproject.integration.adapter.mongodb.MongoAdapter</code>	Databases

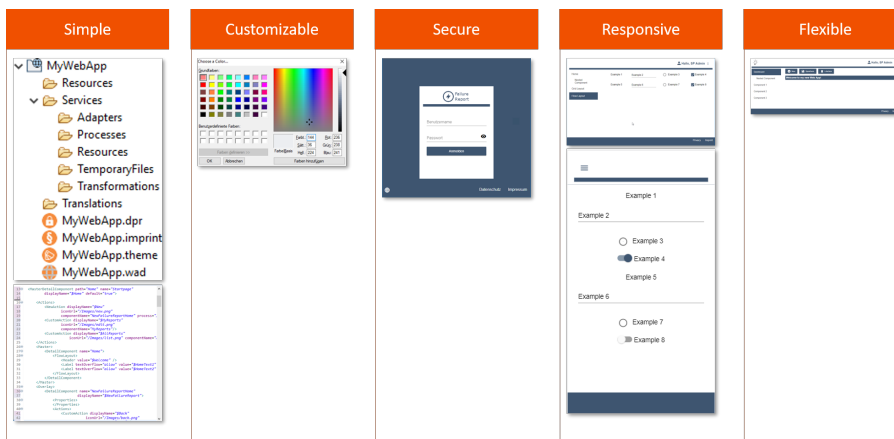
Previous Name	New Name	Main Class	Category
OPC Client	OPC Client Connector	<code>de.softproject.integration.adapter.opc.OpcAdapter</code>	Internet of Things
Properties Reader	Java Properties File Reader	<code>de.softproject.integration.adapter.properties.PropertiesReader</code>	File Processing
ReST Stream Support	X4 Streaming Support	<code>de.softproject.integration.adapter.reststreamsupport.RestStreamSupportAdapter</code>	Web Services
Word Properties	Microsoft Word Properties	<code>de.softproject.integration.adapter.wordheaderadapter.WordHeaderAdapter</code>	Office
Word to Text Converter	Microsoft Word to Text Converter	<code>de.softproject.integration.adapter.Word2XML</code>	Office
PEP	PEP Adapter	<code>de.softproject.integration.adapter.pep.PEPAdapter</code>	Security
POP / SMTP	POP/SMTP	–	E-Mail
SZF Converter	SZF Reader	<code>de.softproject.integration.adapter.szfreader.SzfReader</code>	Insurance
XML Signature Adapter	XML Signature	<code>de.softproject.integration.adapter.digitalsignature.DigitalSignatureAdapter</code>	Security
XOP/MTOM	XOP(MTOM)	<code>de.softproject.integration.adapter.xop.Adapter</code>	Web Services

11.4 X4 Activities: New Functions and Changes

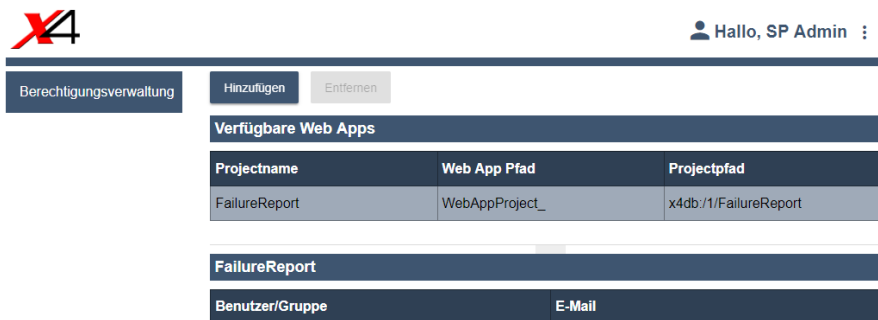
11.4.1 X4 Activities Web Apps

With the X4 Suite component X4 Activities Web Apps a web application can be created without programming. To create a web application, the desired page structure is described in XML. This structure is automatically implemented by the X4 Suite as web application. Processes can be directly integrated into these web applications and data can be processed in the background. The web applications are optimized for display and use on smartphones, tablets, and classic desktop PCs and can be displayed in multiple languages using language files. Thus, X4 Activities Web Apps can be used as an alternative to classic X4 Activities.

In a web application created with X4 Activities Web Apps, a login page is available by default, colors, logos icons, etc. can be customized. An imprint and a data protection statement can also be provided.



Users and permissions can be managed via the corresponding X4 Control Center application X4 Web App Management.



11.4.2 X4 Web Designer

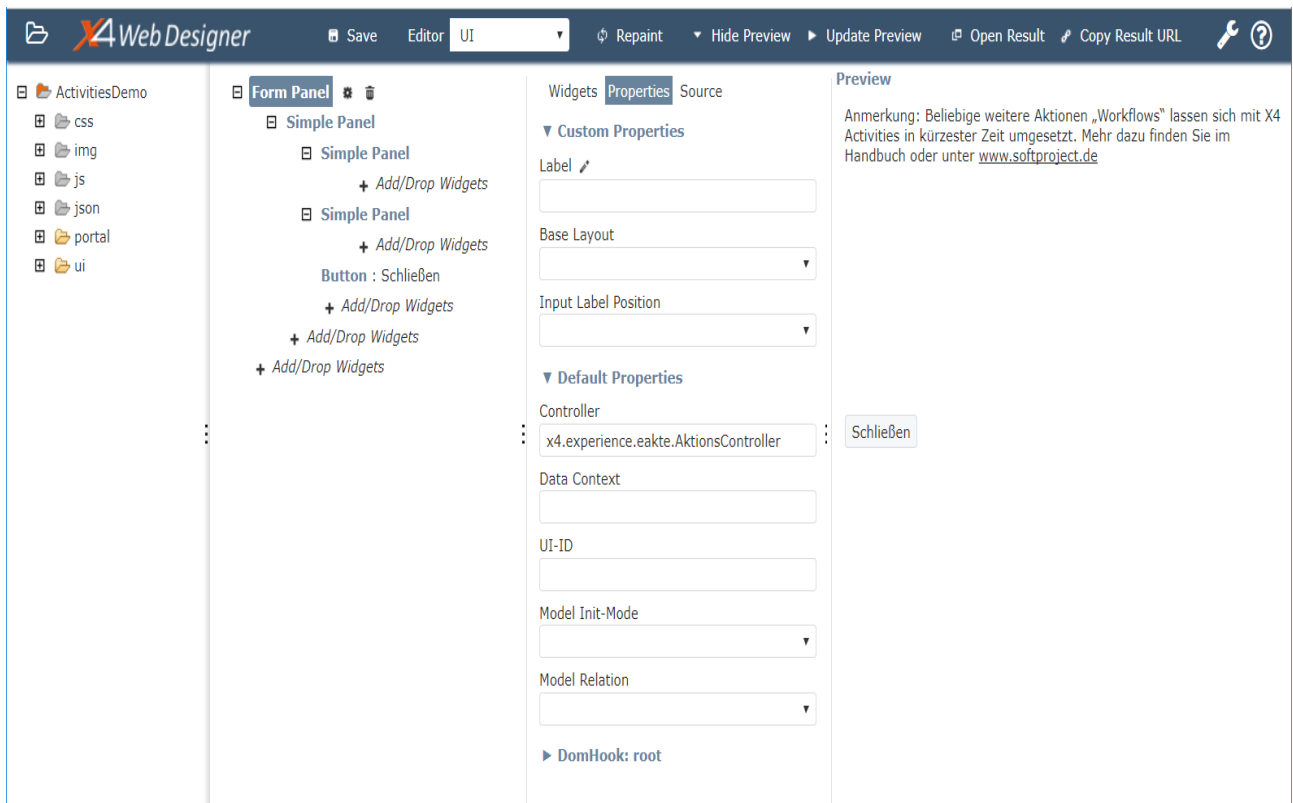
11.4.2.1 New Widgets

In the X4 Web Designer, the following widgets are now available from the UI editor's palette:

- UI Widget: i18n Schema Validation Group to define validation and formatting rules via JSON schema
- UI Widget: i18n Validation to define a validation and formatting rule for a form area within an i18n Validation Group Widget

11.4.2.2 Flexible Editor Areas

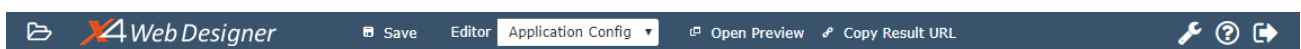
The individual areas within the X4 Web Designer's UI Editor can now be flexibly enlarged or reduced as required via sliders.



11.4.2.3 Preview Function Possible from All Views

To make it easier to preview web portals and detail pages, additional entries have been added to the context menu in the navigation tree of the Web Designer. The URLs of the generated files (Result URL) can now also be copied directly using the new context menu, both for UI files and for all Activities Configurations.

In addition, the **Open Result in Portal** button in the Application Configurator header has been renamed to **Open Preview**.



11.4.2.4 Login and Logout Mechanism

With the current Web Designer version, a new login and logout mechanism has been implemented. When the Web Designer is initially loaded or the session token is lost, a dialog is now displayed that the user can use to log on. The additional cookies required by Activities are also set. When logging out, the cookies are removed and the page is reloaded, and the login dialog is displayed again.

Login

Username

Password

Login

For logged in users, a logout button  is also displayed in the interface.

With the implementation of the new login and logout mechanism, the JavaScript-API was enhanced by the function `x4.cookie.get(name: string): string`, see Asynchronous Actions and ReST. The function expects the name of a cookie and returns its value, or `null` if the cookie does not exist.

11.4.2.5 New Attribute for Datasource Fields

With the optional attribute `format` for datasource fields the number format for number columns (INTEGER, FLOAT, DECIMAL) can now be defined according to [GWT NumberFormat](#), e.g. `0.00` for two decimal places or `0.00 €` for a Euro amount, see also Datasource Definition for the List View.

In addition, an input field for the number format has been added to the *Datasource Editor*, which is automatically displayed for number columns.

11.4.2.6 File Upload Panel Widget: New Events for Uploaded Files

Events can now be triggered in the File Upload Panel Widget when the uploading is complete or has failed. The following events are available:

- `file-upload-ready`: Triggered when upload was completed successfully
- `file-upload-failed`: Triggered when upload failed

11.4.2.7 New Attribute for Configuring the Web Application


For the configuration of the web application, an optional attribute `contentType` is now available for the `application` element, see Main Config. This allows specifying how a specified URL is to be opened:

- `NAVIGATOR` (default): Loads Navigator-Config
- `EXTERNAL_LINK`: Opens the specified URL in a new window

In the *Application-Config Editor*, the `Base URL` field was renamed in `Content URL` and the additional `Content Type` field was added to the applications.

11.4.2.8 New Configuration File for Database Connections in Web Designer

The configuration of database connections is now done per project via the configuration file `<Projekt>/WebResources/dbConfig.xml`. This allows to configure the used database settings such as JNDI name and database type directly in the Web Designer project. To edit the file, the so-called **Expert Mode** must be activated.

 The file `WebIDE_Instance/Config/dbTypes.xml` has been moved to `<Projekt>/WebResources/dbConfig.xml`. In all existing projects, this adjustment must be made during migration to 6.0.0.

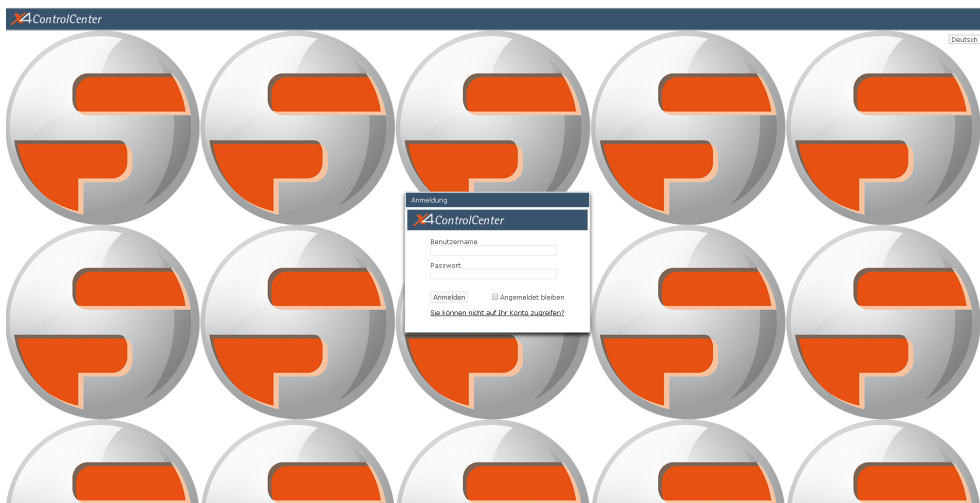
11.4.2.9 X4 Web Designer Generates *.wsinc Files

The X4 Web Designer now generates *.wsinc files instead of *.restconfig files because these includes do not only contain ReST services.

11.4.3 X4 Activities Classic

11.4.3.1 Configurable Login and Logout Screens for Portals based on X4 Activities

For the login and logout screen of portals based on X4 Activities, a background image can now be specified. The formatting of the background image can be controlled via various CSS properties, see [Adjusting the Styling of X4 Activities Applications](#).



11.4.3.2 Show and Hide Header and Footer of Activities Applications

Header and footer of Activities applications can now be shown and hidden in the web.xml with the help of a configuration parameter. This function is required, for example, if the portal is to be integrated into an existing web portal.

The configuration can be made via the new parameter `x4p.application.embeddedMode` in the application-specific configuration. With the value `false` (default) header and footer are displayed as usual, with the value `true` header and footer can be hidden.

11.4.3.3 Possibility to Deactivate Password Changes

For Activities applications it is now possible to define in the user administration of the X4 Control Center by activating and deactivating the parameter **User can't change password** if users are allowed to change their password independently or not.

Neuer Benutzer

Profil | Metadaten | Gruppen | Rollen | Zertifikat

Benutzername: Vorname:

Passwort: Name:

Gültig von: E-Mail-Adresse:

Gültig bis:

☒ Aktiv

☐ Benutzer darf Passwort nicht ändern

☒ Benutzer muss Passwort ändern

11.5 Administration: New Functions and Changes

11.5.1 Providing Process Libraries

Process libraries can now only be provided as modules within the X4 Server and no longer via the X4 Designer, see also Providing Process Libraries.

To provide process libraries the following steps are required:

1. *Installing the process library:* Place the process library as ZIP or jar file under `Server\X4DB\X4modules`.
2. *Configuring and providing the process library:* Configure and provide the process library on the Server via the file `modules.xml` (`Server\X4DB\X4modules\`).

11.5.2 Starting and Stopping the JCo 3 Server via JMX

The JCo3 Server can now be started and stopped via JMX. For this the two new operations `startSAPJcoServer` and `stopSAPJcoServer` were added in the MBean `de.softproject.X4.SAPJCo3Starter`.

11.5.3 User Management

11.5.3.1 Design Refresh

The X4 Control Center's User Management component has been updated in this release, so that the detail view to manage users, groups, roles and permissions are now more clear and easier to use.

The screenshot shows the X4Control Center interface with the 'User Management' tab selected. The 'Users' section is active, displaying a table of users and a detailed profile for the 'admin' user.

User Name	First Name	Name	Active	Valid from	Valid until	Meta...	Last Modified By	Last Modified	Created By	Created
admin	SP	Admin	<input checked="" type="checkbox"/>	2019-03-08	2019-03-15		admin	2019-03-08 08:16	admin	2019-03-08 08:16

The 'admin' user profile is shown with the following details:

- User Name:** admin
- First Name:** SP
- Password:** (masked)
- Name:** Admin
- Valid from:** Valid from
- Valid until:** Valid until
- E-mail address:** E-mail address
- ☒ Active
- ☐ User can't change password
- ☐ User must change password

Buttons: Save

11.5.3.2 New and changed parameters for managing users

To restrict the validity of a user account, the parameters **Valid from** and **Valid until** have been added. In addition, by enabling and disabling the parameter **User can't change password**, administrators can define whether or not users can change their password themselves.

To allow the creation of company-based user accounts within the User Management, it is no longer mandatory to specify a first name. Moreover, the field **Last name** has been renamed to **Name** to emphasize that, for example, organization names can also be entered here.

The 'Create User' dialog box is shown with the 'Profile' tab selected. The fields and options are as follows:

- User Name:** User name
- First Name:** First name
- Password:** (masked)
- Name:** Name
- Valid from:** Valid from
- Valid until:** Valid until
- E-mail address:** E-mail address
- ☒ Active
- ☐ User can't change password
- ☒ User must change password

Buttons: Save, Abort

11.5.3.3 New Role

The new role **X4 JMX Administrator** allows the access to the JMX administration within the administration interface to be controlled, see User Management Roles.

11.6 Deprecated Functions

11.6.1 Axis2 Webservices

Support for Axis2 web services has been removed.

11.6.2 WS Starter and WS2 Starter

Both the WS Starter and the WS2 Starter were discontinued with version 6.0.0 of the X4 Suite, see [WebService Starter \(Deprecated\)](#).

11.6.3 TimeHelper

The date and time functions of the Java class `de.softproject.xml.TimeHelperDate` for use within XSL mappings are obsolete and will be discontinued in future versions of the X4 Suite. Instead, standard XSLT 2.0 functionalities can be used.

11.6.4 WorkingTime Calculator

The working time calculation functions of the Java class `de.softproject.xml.WorkingTimeCalculator`, which were previously provided for use within XSL mappings, will be replaced by the Working Time Calculator adapter with version 6.0 of the X4 Suite.

11.6.5 Repository Explorer

With Release 6.0.0, the Repository Explorer will be replaced by the two new adapters [X4 Projects](#) and Project Access.

11.6.6 .evt Files within X4 Designer

With the current release, .evt files have been consolidated with .wrf files.

11.7 Bug Fixes

The following errors have been fixed with release 6.0.0 of the X4 Suite:

11.7.1 Activities

11.7.1.1 X4 Web Designer

Error in the Application Config Editor

A problem with the Application Config Editor has been fixed so that menu item icons are now displayed correctly.

Error in the Merge View

Within the merge view, changes now can be merged with the previous status as usual.

Invalid Address Call after Drag & Drop Action in X4 Web Designer Editor

Moving a button in the action bar of the *Actionbar Config* editor of the X4 Web Designers via Drag & Drop caused an invalid address call in the Mozilla Firefox browser. This bug has now been fixed.

Error when Managing File Names with Special Characters

Files with special characters (e.g. umlauts or spaces) that were added in the X4 Web Designer via the upload dialog could not be opened or deleted. This bug has now been fixed.

Error when Duplicating a UI Widget in the UI Editor

An error occurred when duplicating a UI widget with UI-ID in the structure tree of the UI editor. The UI-ID of the duplicated widget is now removed and a warning is displayed to the user.

Selection of a Date via Datepicker Widget Not Possible

Due to a change in the initialization routine of the Datepicker widget, the selection of a date was not taken over if an ID attribute was assigned in the DomHook. This bug has now been fixed.

Error Message when Creating a Folder Named Test

In the X4 Web Designer, an error occurred when creating a folder named *Test* or *test*. This bug has now been fixed.

No Automatic Update of the Page after Deleting a File

After deleting a file in the navigator of the X4 Web Designers, the file list may not have been updated. If the file was also edited in the editor, it remained open after being deleted. This bug has now been fixed.

List Area displays Content from other Navigator Nodes

In certain cases, it could happen that the list area for a selected navigator node displayed the content of another navigator node. This behavior occurred if the other navigator node had been selected by the user recently and the user quickly switched to the next navigator node without content of the other navigator node already being listed. This bug has now been fixed.

List Area: No Tooltip Set for List Entries of the Type ENUM_IMAGE

For list area entries of the field data type ENUM_IMAGE, a label text can be stored in the `displayName` attribute. However, this label text was not displayed to the user as a tooltip when the cursor was moved over the graphic. This bug has now been fixed.

Incorrect Build Context Menu Function Creates 0 Byte Target Files

In the navigator view of the X4 Web Designers, when calling the context menu function *Build* for all files below this navigator node in the target folder, the files already created could be replaced by files of 0 bytes in size. If necessary, all affected files had to be saved manually in the X4 Web Designer to solve the problem. This bug has now been fixed.

UI Framework: Bindings Break When Deleting Models

If the model instance of a view was deleted, for example, due to structural changes to the data, the view was retained, but the binding no longer worked. If the model is now removed from a view, the view is also removed. If only a value referenced in a binding is deleted instead of the complete model, this is now described by a corresponding error message in the console.

Renaming Files within the WebResources

When renaming files within the *WebResources*, the directory in which the file is located is now rebuilt. Thus, the original file no longer remains in the target directory.

Updated Values in the Selection List Are Not Displayed

When displaying Web Portal Projects in Internet Explorer 11, updated values in selection lists were not displayed correctly. This bug has now been fixed.

Embedding an Icon in the ApplicationConfig Editor does not work

Embedding an icon in the ApplicationConfig Editor of the X4 Web Designers did not work because the property was wrongly named `iconURL` instead of `icon Url`. This problem has now been fixed by renaming the property to `iconUrl`.

User Is Logged Out after Opening the Preview

If the preview was opened in the X4 Web Designer and switched to another browser tab, the user was logged out. This bug has now been fixed.

Selectbox Does Not Transfer the Selected Value to the Model

The UI binding did not work for a Selectbox with dynamic option list and the initially selected value was not transferred to the model. This bug has now been fixed.

Error Generating a Form in the UI Editor

If a form with attributes that are not valid identifiers for UI bindings was generated in the UI Editor, an error was reported. Now also properties that are not valid identifiers in the UI binding syntax of the UI editor are supported. A new API method has been added and the ReST API adapted (see UI Framework Core (`ui/ui.js`) and Asynchronous Actions and ReST (`async/async.js`)).

Incorrect Form validation with undefined Values

When the Custom Formatters was used, the form validation did not work for undefined model values, but only if an empty string was stored. This problem has been fixed, the validation now also works with undefined values.

11.7.1.2 Activities

No Updating of List View Data after Layout Changes

In a list view with columns of type `String`, the data was not displayed after adjusting the column layout. This behavior only occurred if the automatic storage of the column configuration in `LocalStorage` was activated. This bug has now been fixed.

Incorrect Transmission of Principal Data during Access Check

In certain scenarios, when using web portals based on X4 Activities, not the respective principal data of the logged on user was transmitted to the X4 Server based on the Basic Auth Headers, but the admin principle. Under certain circumstances, this allowed unauthorized access to pages or functions of the portal. This error has been fixed and no longer occurs.

User and Password Stored in Cookie

X4 Activities has stored username and password in the X-X4UAP Cookie in plain text. This behavior has been fixed.

Lister with Generic Database Type Does Not Work

Older Oracle versions (up to 12) do not support the paging mechanism of the lister with `dbtype=oracle`, so the lister should work with `dbtype=generic`, but this caused an error message. The problem has been fixed by changing the parameter name from `PK_COLUMN` to `DATASOURCE`.

Dialog with ConfirmCloseHandler cannot be closed

A dialog that was provided with the `ConfirmCloseHandler` could not be closed on the software side, e.g. via a cancel button. This bug has now been fixed.

Drag & Drop does not work

Within the X4 Web Designers, dragging and dropping a folder did not work. This bug has now been fixed.

Background Image of the Login Screen Is Not Customizable

Due to the incorrect MIME type of the Custom CSS Service, changes that affect the background image of the login screen were not displayed. This bug has been fixed by correcting the MIME Type to `text/css`.

X4 Control Center Is Not Displayed when Logging Off and Logging On Frequently

If a new user was created in the X4 Control Center and logged off and back on very frequently, the X4 Control Center was no longer displayed correctly after some operations. This bug has now been fixed.

Applications in the Menu Are Not Displayed

Applications in the Application Bar were not displayed. This bug has been fixed.

Lister Process Does Not Work with ElasticSearch 6.x

Since ElasticSearch 6.x now requires a correct MIME type specification for each request, the lister no longer worked. This bug has been fixed.

11.7.2 Administration

11.7.2.1 X4 Control Center

Incorrect Filter Function in Group Administration

Within the group administration an error with filtering on groups was fixed.

Incorrect Display in User Administration

When opening the detail view of users, groups, roles and permissions, a display error occurred in the Google Chrome browser, which has now been fixed.

Incorrect Count of Incorrect Login Attempts

Counting incorrect login attempts in the X4 Control Center now works as expected.

User Cookies for X4 Control Center Are Not Set

When jumping to the X4 Control Center via the X4 Designer, user cookies are now set as expected.

Scheduler: Upper/Lower Case of Entries Cannot Be Changed

In the *Scheduler* component, it was no longer possible to correct the path to the technical process for upper/lower case in execution configurations. This bug has been fixed.

Unsorted Log Entries

The log entries in the monitoring area of the X4 Control Center were unsorted. This problem has been fixed, log entries are now sorted by log time.

User Names with More than 233 Characters Can Not Be Saved

In the X4 Control Center, no users with user names longer than 233 characters could be created. This problem has been fixed.

Button *Request Password* Leads to an Error Message

The button *Request Password* in the X4 Control Center did not send a password to the stored e-mail address, but led to an error message. This bug has now been fixed.

Login Dialog Is Not Always Displayed

After logging out and calling the X4 Control Center again via URL, no login dialog appeared and the user was mistakenly displayed as logged in. This bug has been fixed.

Role Management in Pop-up Window Does Not Work

User roles could not be set within the pop-up window of the user settings in the X4 Control Center. Changes made were not applied. This bug has been fixed.

11.7.3 X4 BPM

11.7.3.1 BPM-Editor

Text Color Within an Annotation

If an annotation was created within a business process, the color of the text could not be changed. Colors that were set in the text input dialog were not adopted. This bug has now been fixed.

Display Error in BPMN 2.0 Import Wizard

In the BPMN 2.0 Import Wizard, the *Input* and *Output* labels were not completely displayed with certain screen settings. This bug has now been fixed.

11.7.4 X4 ESB

11.7.4.1 Adapter

Error in JMS Adapter

The JMS Adapter previously issued an internal error if the header `msg_property` contained blanks, semicolons, and so on. This bug has now been fixed.

HTTP(S) Adapter: Error with Unfilled Parameter proxyHost

If the adapter parameter `proxyHost` is not filled, no more errors are displayed in the server log.

HTTP(S) Connector: Proxy Credentials Not Passed Correctly

The *HTTP(S)Connector* did not correctly pass the value of the `proxyUsername` parameter to the proxy server, so authentication on a proxy server that requires authentication was not possible. This bug has been fixed.

HTTP(S) Connector: Incorrect Character Encoding Despite Specification for MIME Type

Although the MIME type and character encoding was correctly defined for documents, e.g. `application/json; charset=UTF-8`, the *HTTP(S)Connector* ignored the specified character encoding and always interpreted the document as *Windows 1252*, which could lead to incorrect umlauts, for example. This bug has been fixed.

PDF Metadata: Adapter Cannot Be Created

The PDF Metadata adapter can now be created as usual in the X4 Designer.

PDF Metadata: Operation `SetMetadata` Is Ignored

The `SetMetadata` adapter operation is now executed as expected.

JDBC Connector: NamedPreparedStatements Do Not Handle Elements in Namespaces Correctly

A bug with *NamedPreparedStatements* has been fixed, so that namespaces are now processed correctly.

Excel Writer: Embedded Functions Disappear after Transformation

Up to now, embedded functions such as VBA macros were erroneously removed with a transformation by the Excel Writer. This error has now been corrected by a library update.

IMAP Connector: Double Quotation Marks in XML Output for Operation Receive Message

The *IMAP Connector* output attribute values with double quotation marks for operation *Receive Message* in the result XML document. This bug has now been fixed.

Word Properties: Error Message in Server Log

When the *Word Properties Adapter* was executed, a `java.lang.UnsupportedOperationException` was output in the log of the X4 ESB Server. This bug has been fixed.

LDAP-Connector: No Search with or within the Root Node Possible

With the LDAP Connector no search was possible that concerned the root node. This error was fixed with an additional parameter `java.naming.referral` (see [New and Modified Adapters](#)).

XML Iterator: Files are not closed

The XML Iterator did not close files anymore. The `XMLEventreader` was removed but not closed, which meant that the file could not be accessed again. This problem has been fixed.

MIME Multipart Converter: Problems with Carriage Return

If there was a carriage return in a multipart message before the start of the actual message, errors were triggered in the MIME Multipart Converter. This problem has been fixed.

JDBC Adapter: Incorrect Status Code

Status code 1 was incorrectly output for database queries that did not produce a result. This problem has been fixed, if no result is found in a database query, the status code 0 is now output.

11.7.4.2 X4 Designer

WebService Configuration Editor: Wrong Display of Inherited Values with pepApp and pepAction

When using the option `Inherit from parent` node for `pepApp` and `pepAction` the wrong values were displayed. Now the correct values from the parent node are displayed as expected.

Process Components under the Process Title Could Not Be Selected

If a title was defined in process diagrams using the **Process Title** property, then process components that were possibly under the process title could not be selected with a mouse click. This bug has now been fixed.

Display Error when Adapting the Process Title

If a process title was defined in process diagrams using the **Process Title** property and this was subsequently replaced by a shorter title, display errors occurred. This bug has now been fixed.

Process Title Is Not Changed Automatically When Copy/Paste/Replace Is Used

The process title is now changed properly when a process is created using Copy/Paste/Replace.

Condition Component with Branches Cannot Be Duplicated by Copy/Paste

If, in a technical process, a **Condition** component including the branches it contains was copied and pasted into the drawing area, the branch was only pasted incompletely. This bug has now been fixed. If necessary, only the conditions for the copied branches have to be adapted.

Starting the Debug Mode Sometimes Required Several Clicks

In the 64-bit version of the X4 Designer, the debug mode for testing processes could not always be started immediately. This bug has now been fixed so that a second click on the **Debug** icon in the toolbar is no longer necessary.

Labeling of Process Components with Hidden File Extensions

If in the preferences of the X4 Designer under **Preferences > Process Designer** the display of file extensions for process component labels is deactivated in the Process Designer, the corresponding file extension (e.g. .xsl for XSL mappings) was still displayed when editing these process component labels. This bug has now been fixed.

Mapping Editor: Incorrect Interpretation of Replacement Characters

Replacement characters for transformations are now correctly interpreted again after editing in the Mapping Editor.

Statement Editor: Semicolon at the End of Each SQL Statements

When creating SQL statements graphically in the *Statement Editor* of the X4 Designer, a semicolon character (;) was added at the end of each generated SQL statement, which could lead to errors in Oracle databases, among others. This behavior has now been corrected.

More Meaningful Error Message when Opening Not Well-Formed XML Documents

The XML editor now issues a more meaningful error message when opening XML documents that are not well-formed.

Missing Autocompletion for Placeholders in Transfer Adapters

The autocomplete for placeholders via Ctrl + Space is now available in all transfer adapters.

Missing Validation when Creating Invalid Placeholders

Invalid placeholders are now already validated when they are created in the X4 Designer.

Copying a Process also Copies the Values of the Metadata Created and Created by

When copying a process, the original values of the metadata **Created** and **Created by** were copied instead of updating them. This bug has now been fixed.

Designer Corrupts Reports due to Invalid XML

If a report (*.rep) with invalid XML was saved and reopened, the character encoding was lost. Therefore, all non-ASCII characters, such as umlauts and Euro characters, were replaced by wildcards and had to be corrected manually. This problem has been fixed by setting the UTF-8 encoding by default.

Multiple Selection Is Lost in Debug Mode after Moving

If a process with several steps was started in debug mode and a selection of several components was moved, the selection was lost. This error has now been fixed, the selection is retained when continuing the debug process.

Error with *.rep Files with Special Characters in File Name

In the X4 Designer, *.rep files containing special characters in the file name (e.g. brackets) could not be processed and led to a NullPointerException. This bug has now been fixed.

Processes Cannot Be Debugged in a Detached Window

In the X4 Designer it is possible to detach processes and display them in a separate window. In this separate window it was not possible to start the debug mode. This bug has been fixed and processes in a detached window can also be debugged using button or shortcut.

11.7.4.3 X4 Server

ReST Starter: Performance Loss because Content-Length Was Not Determined

When ReSTful Webservices were executed, the Content-Length for web service responses was not always determined and set as the response header. Now the behavior has also been corrected for ReSTful web services without activated streaming mechanisms, which can considerably optimize the data transfer. The corresponding response header cannot be overwritten by the HTTP(S) Output Parameter Adapter.

Growing Number of Server Log Entries when Starting and Stopping the SAP JCo3 Server

Each time the SAP JCo 3 server was started and stopped, the number of log entries in the X4 Server log increased. This error no longer occurs.

Error Installing X4 Suite in Folders with Spaces

When installing the X4 Suite test version X4Setup.exe in folders containing a space in the folder name, there are no more errors in the server log.

Debug Mode Is Not Terminated

In some cases, the debug mode was not terminated correctly, which is why all other processes were also executed in debug mode. All status information was retained, resulting in an overload of the memory. This bug has now been fixed.

Vulnerability to XML Bomb Attacks

For XML files with many entities that were sent to the server via SOAP request, the X4 Suite tried to execute this request. This led to a massive consumption of resources and was a potential attack possibility for hackers. This issue has been resolved.