

# Business object

🌐 Language: [Deutsch](#) · [English](#)

## 💡 Business object

The heart of every Nuclos application: business objects define your data model – table, forms and API are generated automatically.

KONZEPT

LOW-CODE

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## What is a business object?

In Nuclos all of your company's data is organised in **business objects (BO)**. A business object corresponds to an **entity** in the data model – an abstraction of real things such as *customer*, *article* or *order*. From the BO, Nuclos automatically derives the database table, the forms and the REST/rule API.



### BO and process

A business object may – but need not – have a [status model](#). Use it to model processes, e.g. *ordered delivered paid*.

Menu: [Configuration](#) [Business object](#)

## 1. Create, edit, delete a business object

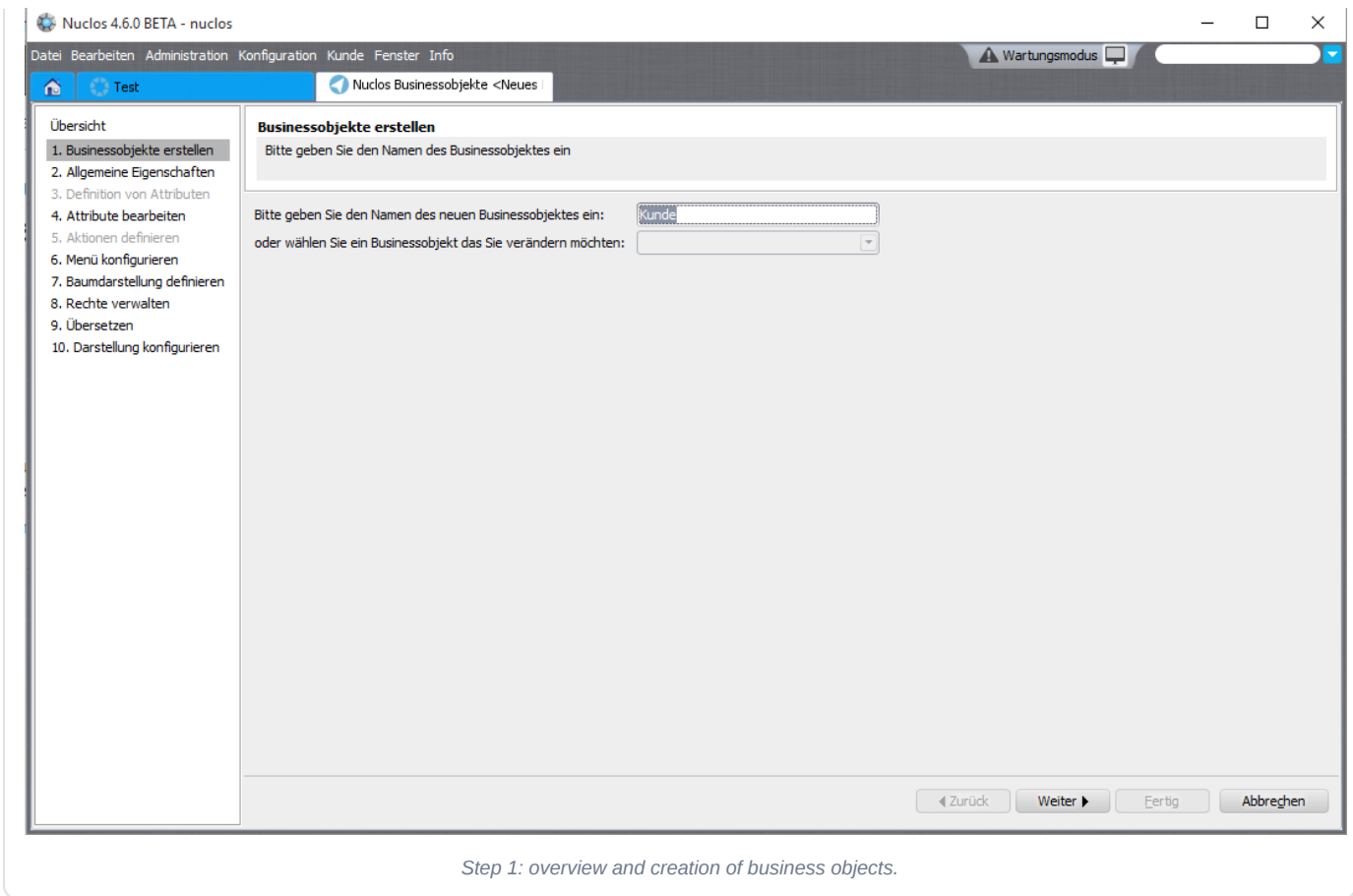
The first page of the BO wizard lists the existing business objects (filterable and sortable).

- **Create:** enter a name and choose a *Nuclet*. The name is the basis for the table name; the internal name may have at most 25 characters. Duplicate names are only allowed in different Nuclets.
- **Edit:** select the BO and continue with *Next*.
- **Delete:** removes metadata **and** the database table. Only possible once no other BO references it.



### Caution

Deleting removes all data **irreversibly**. A deleted BO cannot be restored.



## 2. General properties

- **Label/window title, table name / internal BO name** (basis of the method names in the BusinessRule API).
- **Editable?** – if unchecked, the BO is read-only (e.g. interface data, fixed value lists).
- **Menu path** (separate sub-folders with \), **custom icon, keyboard shortcut**.
- **Search form required/opened directly, split view, history**.
- Enable a **status model** (then it becomes mandatory) and an **identifier prefix** (e.g. KU0716-00001).
- **Mandator dependency** incl. initial fill and uniqueness per mandator.
- Technical variants: **virtual BO** (view), **write proxy**, **thin BO** (IDs only, more performance), **proxy BO/interface**, **generic BO**, **object generator for cloning**.



Nuclos Businessobjekt: Kunde

Übersicht

1. Businessobjekte erstellen
2. Allgemeine Eigenschaften
3. Definition von Attributen
4. Attribute bearbeiten
5. Aktionen definieren
6. Menü konfigurieren
7. Baumdarstellung definieren
8. Rechte verwalten
9. Übersetzen
10. Darstellung konfigurieren

**Attribute bearbeiten**

Fügen Sie Attribute hinzu, ändern Sie vorhandene oder löschen Sie welche. Die Reihenfolge der Attribute wird in Listen und Unterformularen als Standard für die Spalteneinstellungen verwendet.

| Anzeigename       | Beschreibung      | Datentyp     | Feldbreite | Nachkommastellen | Eindeutig                           | Historie                 | Pflichtfeld                         | Feldname         | Javatyp | Berechnet                |
|-------------------|-------------------|--------------|------------|------------------|-------------------------------------|--------------------------|-------------------------------------|------------------|---------|--------------------------|
| Kundennummer      | Kundennummer      | Ganzzahl     | 9          |                  | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | kundennummer     | Integer | <input type="checkbox"/> |
| Name              | Name              | Text         | 255        |                  | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>            | name             | String  | <input type="checkbox"/> |
| Firma             | Firma             | Referenzfeld | 255        |                  | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>            | firma            | String  | <input type="checkbox"/> |
| PLZ               | PLZ               | Ganzzahl     | 9          |                  | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>            | plz              | Integer | <input type="checkbox"/> |
| Ort               | Ort               | Text         | 255        |                  | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>            | ort              | String  | <input type="checkbox"/> |
| Strasse           | Strasse           | Text         | 255        |                  | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>            | strasse          | String  | <input type="checkbox"/> |
| Hausnummer        | Hausnummer        | Ganzzahl     | 9          |                  | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>            | hausnummer       | Integer | <input type="checkbox"/> |
| Hausnummer Zusatz | Hausnummer Zusatz | Text         | 255        |                  | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>            | hausnummerzusatz | String  | <input type="checkbox"/> |
| Email             | Email             | Email        | 255        |                  | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>            | email            | String  | <input type="checkbox"/> |
| Telefon           | Telefon           | PhoneNumber  | 255        |                  | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>            | telefon          | String  | <input type="checkbox"/> |
| Kommentar         | Kommentar         | Memo         | 4000       |                  | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>            | kommentar        | String  | <input type="checkbox"/> |

Attribut hinzufügen    Attribut entfernen    Attribut bearbeiten

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Step 4: maintain the business object's attributes.

## Data types

| Data type                        | Java type         | DB type | Length     | Note                                            |
|----------------------------------|-------------------|---------|------------|-------------------------------------------------|
| Text                             | java.lang.String  | varchar | 255        | Standard text field                             |
| Memo                             | java.lang.String  | varchar | 4000       | Multi-line text                                 |
| Text (Large Object)              | java.lang.String  | clob    | 2147483647 | Very long text                                  |
| Integer                          | java.lang.Integer | number  | 9          | Whole number                                    |
| Decimal (9,4)                    | java.lang.Double  | number  | 9          | Format via pattern, e.g. #, ##0.00              |
| Yes/No                           | java.lang.Boolean | number  | 1          | Mandatory, no null values                       |
| Date                             | java.util.Date    | date    | –          | Format via pattern, e.g. dd.MM.yyyy             |
| Reference field                  | java.lang.String  | varchar | 255        | Reference to another business object            |
| Lookup field                     | java.lang.String  | varchar | 255        | Pick from reference BO, only the text is stored |
| E-mail / PhoneNumber / Hyperlink | java.lang.String  | varchar | 255/1000   | Special data components                         |
| Document / Image / Binary (LOB)  | –                 | blob    | –          | Files and images                                |
| Auto number                      | java.lang.Integer | number  | 9          | Automatically incremented                       |
| Encrypted text                   | –                 | varchar | 255        | Stored encrypted                                |

## Key attribute properties

- **Display name** (label), **description** (tooltip), **data type**, **min/max** (numbers/dates), **multilingual**.
- **Field name** (identifier in rules/layout), **DB column name**, **attribute group** (for status-dependent rights).
- **Mandatory**, **unique** (possibly combined), **indexed**, **default value**.
- **Calculation expression** (Groovy, live in the form, see [client-side rules](#)) vs. **calculation rule** (data source/database object on read) and **calculate on request only**.
- **Background colour** (Groovy or data source), **history**, **hidden**, **modifiable** (overrides group/status rights).

## Reference field / relation

A reference points to another business object or to an [integration point](#). Options: *cascade delete*, *search field* (LOV) and a display pattern of concatenated attributes, e.g. \${kundennummer} - \${name}. A **value list provider** can be assigned across attributes.

Nuclos Businessobjekt Kunde

Attribute bearbeiten

Übersicht

1. Eigenschaften
2. Werteliste
3. Verknüpfung zu anderen Businessobjekten
4. Nachschlage-Businessobjekte definieren
5. Haupt-Businessobjekt für Autonummer
6. Übersetzungen
7. Allgemeine Eigenschaften

**Verknüpfung zu anderen Businessobjekten**

Verknüpfung zu anderen Businessobjekten

Verweis auf Businessobjekt: Firma

Kaskadierend löschen ☐

Suchfeld ☐

firmenkuerzel  
name  
firmenart  
geschaeftsfuehrer  
createdAt  
createdBy  
changedAt  
changedBy

> \${firmenkuerzel} \${name}

◀ Zurück Weiter ▶ Fertig Abbrechen

Reference field/relation to other business objects.

## 5.–6. Actions, contexts and menu

With **actions** you design several layouts/processes for one BO (e.g. *company* vs. *private customer*). **Contexts** control which subform BOs the web client search includes. The **menu path** can be refined per action; with *New?* the input form opens directly.

Nuclos Businessobjekt Kunde

Menü konfigurieren

Konfigurieren Sie die Menüeinträge für dieses Businessobjekt. Wenn Sie keine Einträge definieren, wird ein Standard-Menüeintrag generiert.

| Menüpfad (Deutsch) | Aktion | Menüpfad (British English) | Neu?                     |
|--------------------|--------|----------------------------|--------------------------|
|                    |        |                            | <input type="checkbox"/> |

◀ Zurück Weiter ▶ Fertig Abbrechen

Step 6: configure the menu.

## 7. Labelling and tree view

**Title** (window title/history/tree) and **info** (tooltip) are built from attributes + static text, e.g. `${kundenname} (${kundennummer}) - ${nuclosState}`. In the **tree view** you embed referencing BOs as well as dynamic BOs and document attachments as child nodes (grouping, folders, reference fields).

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**Baumdarstellung definieren**  
Definition von Fenstertitel und Baumdarstellung

changedAt  
changedBy  
createdAt  
createdBy  
email  
firma  
hausnummer  
hausnummerzusatz  
kommentar  
kundennummer  
name  
ort  
plz  
strasse  
telefon

Anzeige Knotendarstellung & dynamischer Fenstertitel \*

>> \${name}

Bezeichnung des Knoten-Tooltips

>> \${name}

Erweiterte Einstellungen einblenden

Kunde

◀ Zurück Weiter ▶ Fertig Abbrechen

Step 7: configure the tree view.

## 8.–10. Rights, translation and presentation

- **Rights & locking:** maintain permissions per [user group](#) and enable the [locking logic](#).
- **Translate:** BO name, menu path, node/tooltip and actions (DE/EN).
- **Presentation:** automatically generate/update a [layout](#) (overwrites any existing one!), grouping by attribute groups, subforms, editing fields, row background colour (Groovy).

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### Darstellung konfigurieren

Konfigurieren Sie die Darstellung von Suchergebnissen und lassen Sie eine Standardmaske von Nuclos generieren.

Hintergrundfarbe der Zeilendarstellung konfigurieren

Wollen Sie die bestehende Maske aktualisieren? ☒

Gruppieren Attribute im Layout nach Attributgruppen ☐

Vorhandene Unterformulare ins Layout aufnehmen ☐

Editierungsfelder erstellen ☐

Geben Sie die Reihenfolge an, in der die Felder in der Maske platziert werden sollen

kundennummer

name

firma

plz

ort

strasse

hausnummer

hausnummerzusatz

◀ Zurück Weiter ▶ Fertig Abbrechen

Step 10: configure presentation/layout.



#### Tip

Before creating, briefly plan the **attributes and relations** so the data model stays easy to extend later.

## Related pages

### Layout

Design forms.

[Open](#)

### Status model

Model processes.

[Open](#)

### Rule sets

Add business logic.

[Open](#)