



Service Studio Overview



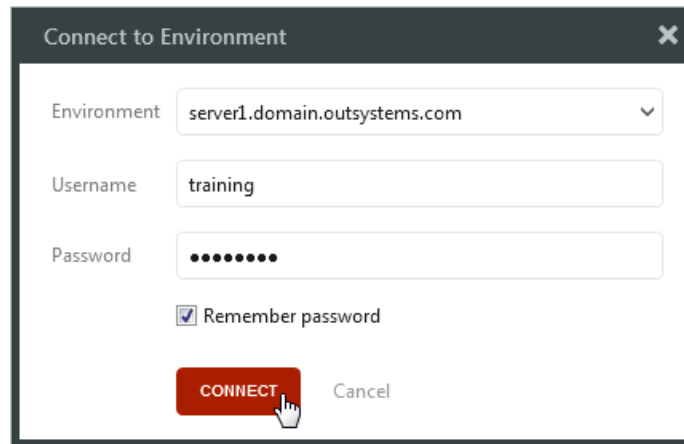
What is Service Studio?

Service Studio is a low-code visual development environment that is the Integrated Development Environment (IDE) for the OutSystems platform

Service Studio allows developers to...

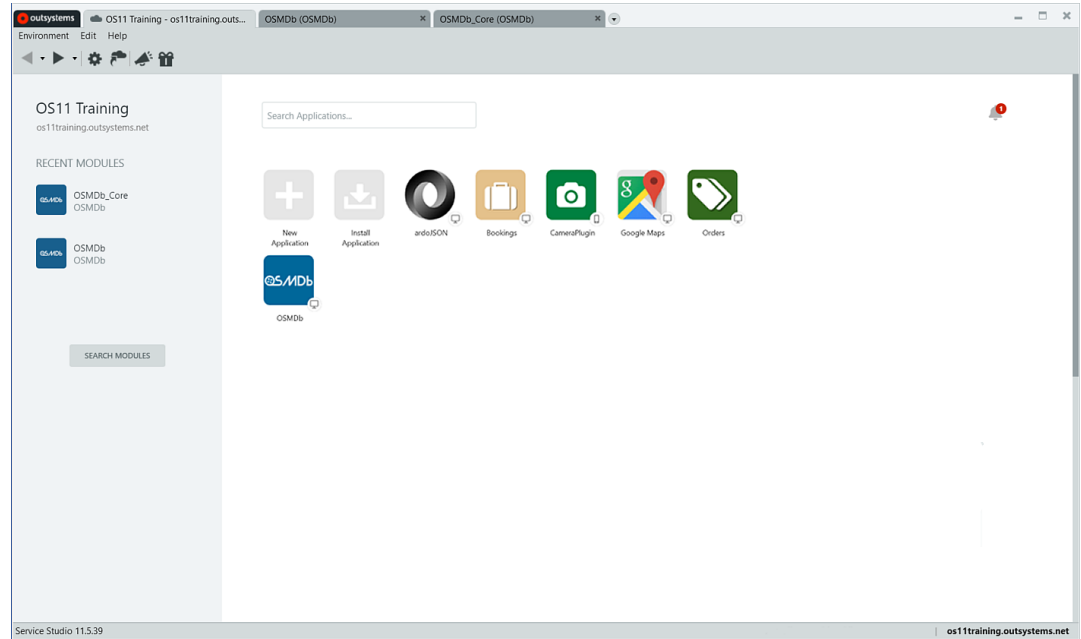
- Define the **data** structures used by the app
- Create the user **interfaces** for web and mobile apps
 - modify or create CSS as needed for the interfaces
- Define business **logic** needed by apps
- Define business **processes** and timers (batch processes)
- Create, edit, update, publish, view and debug their apps in the cloud

Service Studio Install & Connect



Environment tab - Applications

- Lists apps in the server
- Create new applications
- Install applications from the Forge
- Open an application
 - Get latest version from the platform server



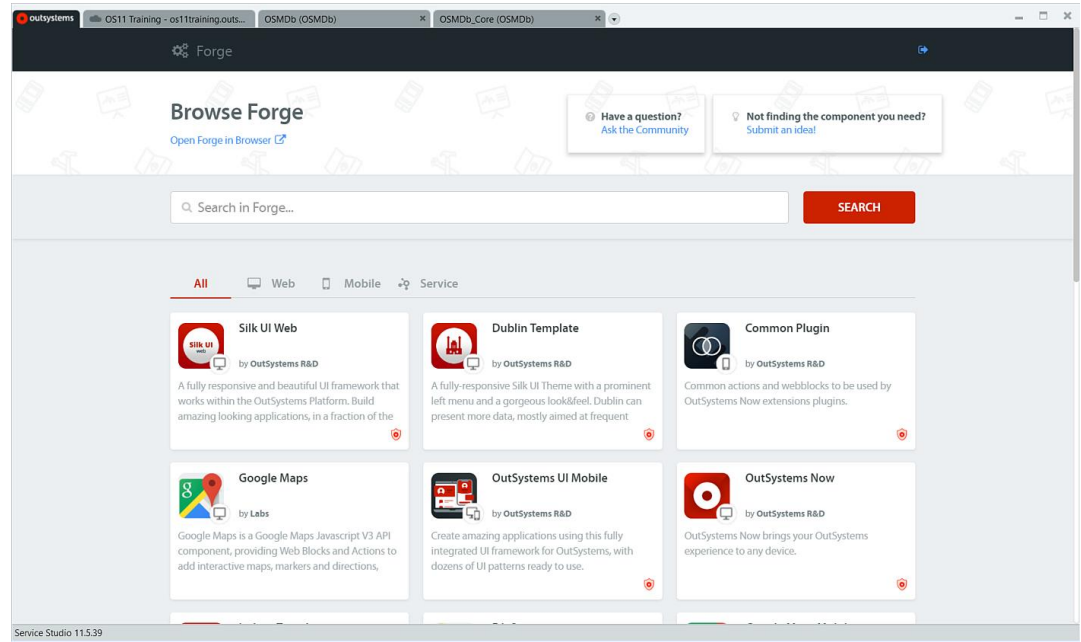
OutSystems Forge Tab

Open source apps & add-ons
free to download

- Searchable
- Categorized
- Mobile apps
- Web apps

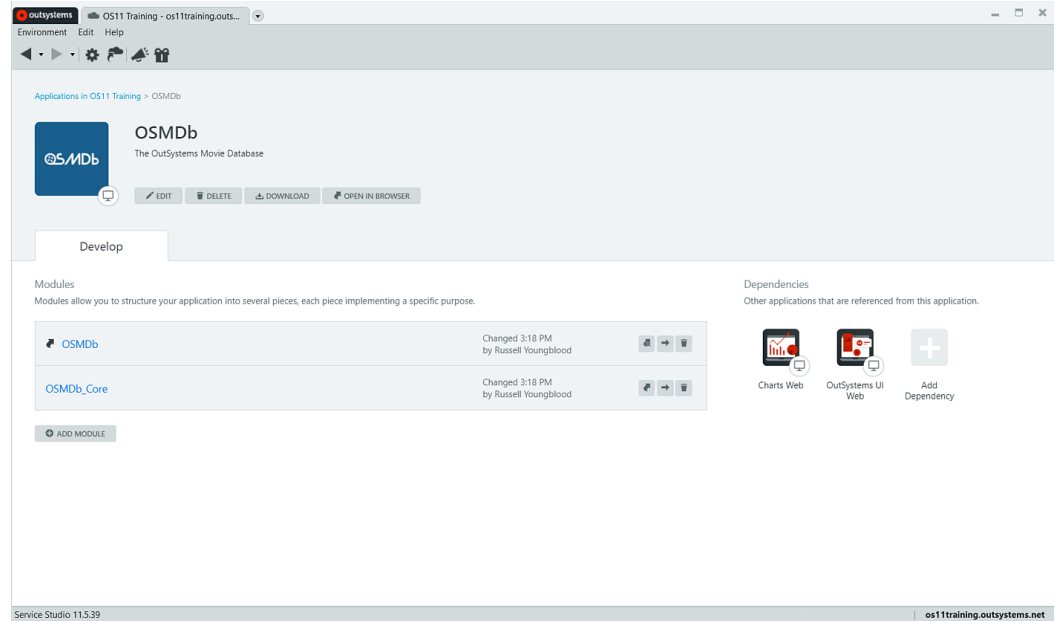
Resource details

- Ratings
- Downloads
- Featured
- Supported



Environment tab - Application Details

- Application Info
 - Name, description & icon
 - Open in browser
- Modules tab
 - Modules in this app
- Dependencies
 - Modules referenced



Module Workspace Tab

The screenshot displays the OutSystems development environment. The main workspace shows a 'Movies' web screen with a search bar, a genre filter dropdown (currently set to '- All Genres'), a 'Only on DVD' checkbox, and a 'Filter' button. Below these controls is a table listing movie records.

Title	Year	Plot Summary	Gross Takings
Star Wars: The Force Awakens	2015	Three decades after the defeat of the Galactic Empire, a new threat arises. The First Order attempts to rule the galaxy and only a ragtag group of heroes can stop them, along with the help of the Resistance.	815843529
Star Wars: The Force Awakens	2015	Three decades after the defeat of the Galactic Empire, a new threat arises. The First Order attempts to rule the galaxy and only a ragtag group of heroes can stop them, along with the help of the Resistance.	815843529
Star Wars: The Force Awakens	2015	Three decades after the defeat of the Galactic Empire, a new threat arises. The First Order attempts to rule the galaxy and only a ragtag group of heroes can stop them, along with the help of the Resistance.	815843529

The right-hand sidebar contains a 'Widget Tree' for the 'OSMDB' module, listing various UI components like 'UI Flows', 'MainFlow', 'Movies', 'People', etc. Below the widget tree is a 'Properties' panel for the 'Movies Web Screen', showing fields like 'Name', 'Description', 'Public', 'Title', 'Roles', 'Anonymous', 'Registered', 'OSMDBAdmin', 'Advanced', 'HTTP Security', 'Integrated Auth...', 'Cache in Minutes', 'Is Frequent Dest...', 'Style Sheet', 'JavaScript', and 'Extended Properties'.

The bottom status bar indicates 'OSMDB uploaded at 3:18 PM' and the URL 'os11training.outsystems.net'.

Elements Tree Area

Search... (Ctrl+E)

Container If

Text Expression

Table Records

List Records

Form Editable Table

Link Button

Label Input

Check Box Radio Button

Combo Box Image

List Box Upload

Edit Record Show Record

OSMDB (OSMDB)

OSMDB_Core (OSMDB)

Module Edit View Debugger Help

Processes Interface Logic Data

MainFlow Movies Widget Tree

OSMDB

- UI Flows
 - Common
 - Emails
- MainFlow
 - Entry1
 - AddMovieParticipant
 - MovieDetail
 - Movies**
 - People
 - PersonDetail
 - StarDisplay
 - Charts
 - OutSystemsUIWeb
 - RichWidgets
 - Users
- Images
- Themes
 - OSMDB
 - OutSystemsUIWeb

Movies Web Screen

Name	Movies
Description	...
Public	No
Title	...
Roles	
Anonymous	<input checked="" type="checkbox"/>
Registered	<input checked="" type="checkbox"/>
OSMDBAdmin	<input checked="" type="checkbox"/>
Advanced	
HTTP Security	...
Integrated Auth...	...
Cache in Minutes	...
Is Frequent Dest...	No
Style Sheet	...
JavaScript	...
Extended Properties	

1 Warning Debugger

OSMDB uploaded at 3:18 PM | os11training.outsystems.net

Elements
Tree
area

Widget Tree Area

The screenshot shows the OutSystems IDE interface. The main workspace displays a 'Movies' widget with a search bar and a table of movie records. The 'Widget Tree' tab is selected in the top navigation bar, and a red arrow points to it. The 'Widget Tree' area on the right shows a hierarchical structure of widgets for the 'Movies' widget, including 'Common/Layout', 'Left', 'Center', 'Right', 'HeaderContent', 'Breadcrumbs', 'Title', 'Actions', 'MainContent', 'Container', 'input', 'select', 'checkbox', 'Only on DVD', 'Filter', 'MovieTable', and 'Footer'. Below the 'Widget Tree' is a 'Combo Box' widget configuration panel with properties and styles.

Widget Tree Area

Combo Box Properties

Property	Value
Name	Session.MovieGenFilter
Variable	Session.MovieGenFilter
Validation Parent	
Mandatory	False
Source Record L...	
Source Entity	MovieGenre
Source Attribute	
Source Identifie...	
Special Variable	
Style Classes	select
Visible	True
Enabled	True
Special List	
Value 1	-1
Option 1	- All Genres -

Widget
Tree area

Editor Area

Editor
area

The screenshot displays the OutSystems Editor Area for a 'Movies' widget. The interface includes a top menu bar with 'Module', 'Edit', 'View', and 'Debugger' options. Below the menu is a toolbar with various icons for navigation and development. The main workspace is divided into three panes: a left-hand 'Widget Tree' showing the hierarchy of the 'Movies' widget, a central 'MainContent' area displaying the 'Movies' widget configuration, and a right-hand 'Properties' pane for the selected 'Combo Box' widget.

The 'MainContent' area shows the 'Movies' widget configuration. It includes a search bar labeled 'Search Title and Plot', a 'Combo Box' dropdown menu set to '- All Genres', and a 'Filter' button. Below these elements is a table listing movie records:

Title	Year	Plot Summary	Gross Takings
Star Wars: The Force Awakens	2015	Three decades after the defeat of the Galactic Empire, a new threat arises. The First Order attempts to rule the galaxy and only a ragtag group of heroes can stop them, along with the help of the Resistance.	815843529
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The 'Properties' pane on the right shows the configuration for the 'Combo Box' widget. The 'Name' is 'Session.MovieGenFilter'. The 'Validation Parent' is 'Mandatory', which is set to 'False'. The 'Source Record List' is 'MovieGenre'. The 'Source Attribute' is 'Special Variable'. The 'Style Classes' are 'select'. The 'Visible' and 'Enabled' properties are both set to 'True'. The 'Special List' is configured with 'Value 1' as '-1' and 'Option 1' as '- All Genres -'.

Screen Editor Area

Views and Styles

Edited Element Breadcrumb

Toolbox
(widgets)

Show
Widget
Tree

Canvas

The screenshot displays the OutSystems Screen Editor interface. On the left is a vertical **Toolbox (widgets)** containing various UI components like Container, If, Text, Expression, Table Records, List Records, Form, Editable Table, Link, Button, Label, Input, Check Box, Radio Button, Combo Box, Image, List Box, Upload, Edit Record, and Show Record. The main **Canvas** area shows a screen titled 'Movies' with a search bar, a filter dropdown set to '- All Genres', and a 'Filter' button. Below these is a table with columns: Title, Year, Plot Summary, and Gross Takings. The table lists 'Star Wars: The Force Awakens' for the year 2015. At the top right of the canvas, there are tabs for 'MainFlow' and 'Movies', and a 'Widget Tree' icon. Above the canvas, there are icons for 'Views and Styles' and 'Edited Element Breadcrumb'. At the bottom left of the canvas, there are icons for 'Widget Hierarchy breadcrumb'.

Title	Year	Plot Summary	Gross Takings
Star Wars: The Force Awakens	2015	Three decades after the defeat of the Galactic Empire, a new threat arises. The First Order attempts to rule the galaxy and only a ragtag group of heroes can stop them, along with the help of the Resistance.	815843529
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Widget Hierarchy breadcrumb

Properties Area

The screenshot displays the OutSystems IDE interface. The main canvas shows a 'Movies' widget with a search bar and a table of movie records. A 'Combo Box' widget is highlighted in the main canvas, and its properties are shown in the 'Properties Area' on the right. The 'Properties Area' is a panel with two tabs: 'Properties' and 'Styles'. The 'Properties' tab is active, showing various configuration options for the 'Combo Box' widget. The 'Properties' tab is highlighted with a red box, and the text 'Properties area' is written in red next to it.

Properties Area

Combo Box

Properties

Property	Value
Name	Session.MovieGenFilter
Validation Parent	
Mandatory	False
Source Record L...	
Source Entity	MovieGenre
Source Attribute	
Source Identifi...	
Special Variable	
Style Classes	select
Visible	True
Enabled	True
Special List	
Value 1	-1
Option 1	- All Genres -

Properties
area

Properties Area

The screenshot displays the OutSystems IDE interface. The main canvas shows a 'Movies' widget with a search bar and a table of movie records. A 'Combo Box' widget is highlighted in the widget tree on the right. The 'Properties' panel on the left shows the configuration for the selected widget. The 'Styles' tab is active, and a red arrow points to the 'Style Classes' property, which is set to 'select'.

Combo Box Properties:

- Name: Session.MovieGenFilter
- Variable: Session.MovieGenFilter
- Validation Parent:
- Mandatory: False
- Source Record L...:
- Source Entity: MovieGenre
- Source Attribute:
- Source Identifi...:
- Special Variable:
- Style Classes: select
- Visible: True
- Enabled: True
- Special List:
- Value 1: -1
- Option 1: - All Genres -

Movies Table:

Title	Year	Plot Summary	Gross Takings
Star Wars: The Force Awakens	2015	Three decades after the defeat of the Galactic Empire, a new threat arises. The First Order attempts to rule the galaxy and only a ragtag group of heroes can stop them, along with the help of the Resistance.	815843529
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Styles
Editor area

TrueChange, Debug & 1-Click Publish Area

The screenshot displays the OutSystems IDE interface. At the bottom, a red-bordered box highlights the TrueChange™ Debugger. The debugger shows a green checkmark and the message "The module is valid." Below this, there is a large empty space for logs or additional messages. The main workspace shows a "Movies" application with a table of movie data. The table has columns for Title, Year, Plot Summary, and Gross Takings. The first row shows "Star Wars: The Force Awakens" from 2015 with a gross takings of 815843529. The right sidebar shows the widget tree and properties panel. The bottom status bar indicates "OSMDB uploaded at 3:18 PM" and the URL "os11training.outsystems.net".

TrueChange™ Debugger

Ok The module is valid.

TrueChange™

OSMDB uploaded at 3:18 PM | os11training.outsystems.net

TrueChange
Debug area

Status Bar

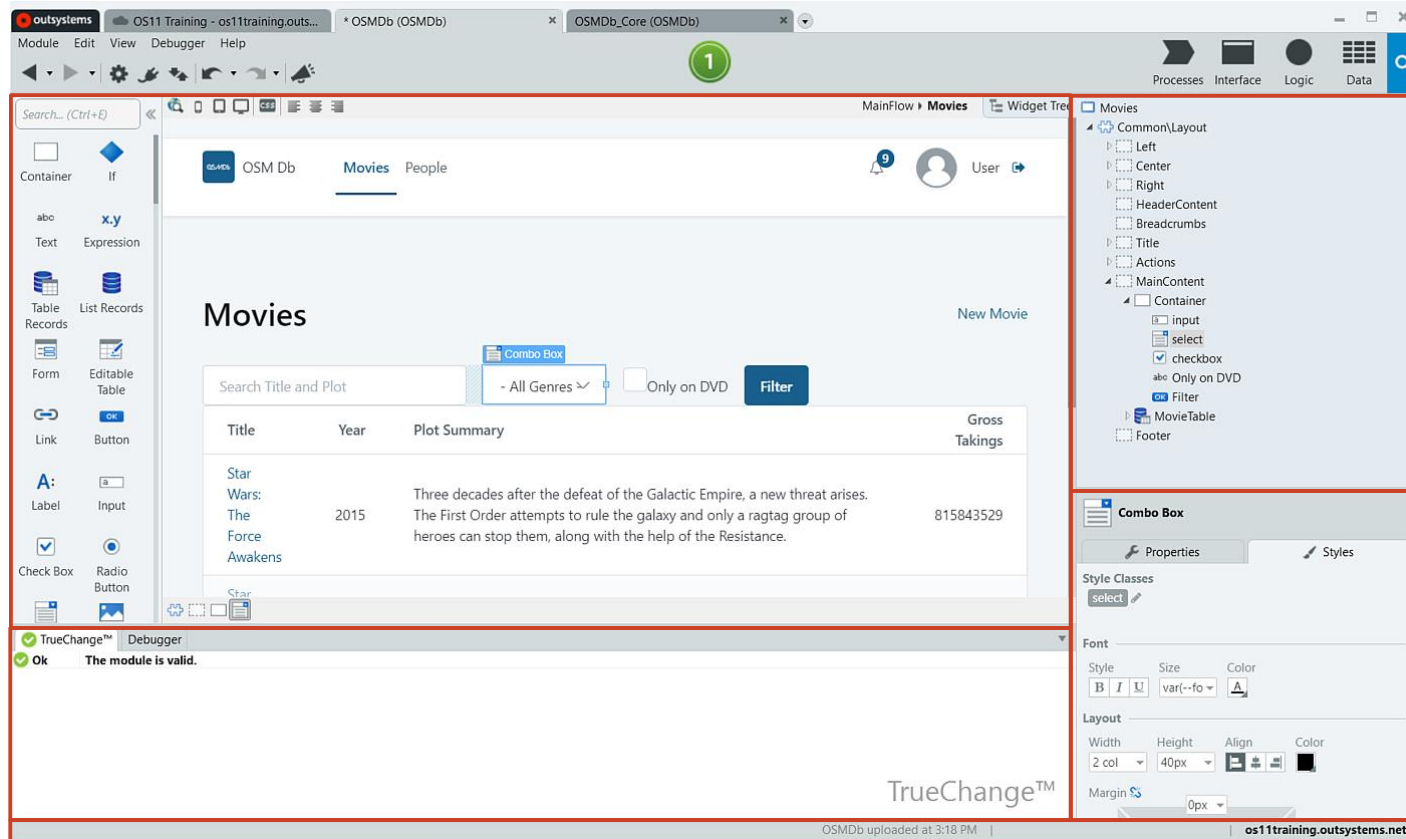
The screenshot displays the outsystems development environment. The main workspace shows a 'Movies' application with a search bar, a genre filter (set to '- All Genres'), and a 'Filter' button. Below these is a table of movie records:

Title	Year	Plot Summary	Gross Takings
Star Wars: The Force Awakens	2015	Three decades after the defeat of the Galactic Empire, a new threat arises. The First Order attempts to rule the galaxy and only a ragtag group of heroes can stop them, along with the help of the Resistance.	815843529

The right sidebar contains a 'Widget Tree' and a 'Properties' panel for a selected 'Combo Box' widget. The bottom status bar shows a 'TrueChange™ Debugger' message: 'Ok The module is valid.' and a 'TrueChange™' watermark. The bottom right corner of the status bar displays 'OSMDB updated at 3:18 PM' and the URL 'os11training.outsystems.net'.

Status bar

Service Studio Environment



Editor
area

Elements /
Widget Tree
area

Properties
area

TrueChange
Debug area

Status bar



Menu Bar

Menu bar

Menu bar

The screenshot displays the OutSystems IDE interface. At the top, the 'Menu bar' is highlighted with a red box, containing options: Module, Edit, View, Debugger, and Help. Below the menu bar is a toolbar with various icons for navigation and development. The main workspace shows a web application for OSMDb (Open Movie Database) with a 'Movies' tab selected. The application includes a search bar, a filter dropdown set to '- All Genres', and a 'Filter' button. A table of movie entries is displayed, with the first entry being 'Star Wars: The Force Awakens' from 2015. The right sidebar shows the 'Widget Tree' and 'Properties' panels. The 'Properties' panel for the 'Movies Web Screen' is visible, showing fields like Name, Description, Public, Title, Roles, and various security settings. The status bar at the bottom indicates 'OSMDb uploaded at 3:18 PM' and 'os11training.outsystems.net'.

Module Edit View Debugger Help

Search... (Ctrl+E)

OSM Db Movies People

Search Title and Plot

- All Genres

Only on DVD

Filter

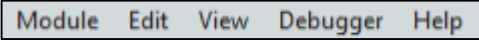





Title	Year	Plot Summary	Gross Takings
Star Wars: The Force Awakens	2015	Three decades after the defeat of the Galactic Empire, a new threat arises. The First Order attempts to rule the galaxy and only a ragtag group of heroes can stop them, along with the help of the Resistance.	815843529
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1 Warning Debugger

OSMDb uploaded at 3:18 PM | os11training.outsystems.net

Menu bar



- Menus 
 - Module, Edit, View, Debugger & Help
- Icons/Buttons
 - Back/Forward to (editors) 
 - Module management 
 - Manage dependencies 
 - Compare and merge 
 - Undo/Redo (changes) 

- 1-Click Publish 

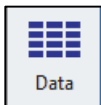
- Layers



- Processes - Processes & Timers
- Interface - Themes, Screens, etc.
- Logic - Actions, integrations, roles
- Data - Entities, Structures, etc.

- Search

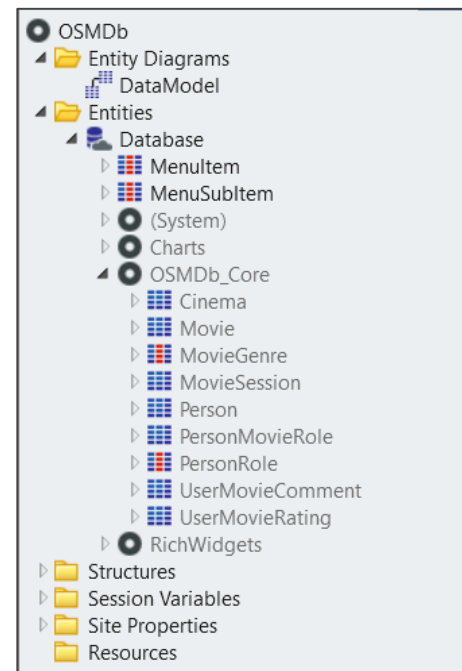


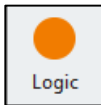


Data layer (Ctrl + 4)



- Entity Diagrams
- Entities - database stored data
- Structures - in memory data
- Session Variables - user specific, cross app data
- Site Properties - cross user, cross app data
- Resources - other data

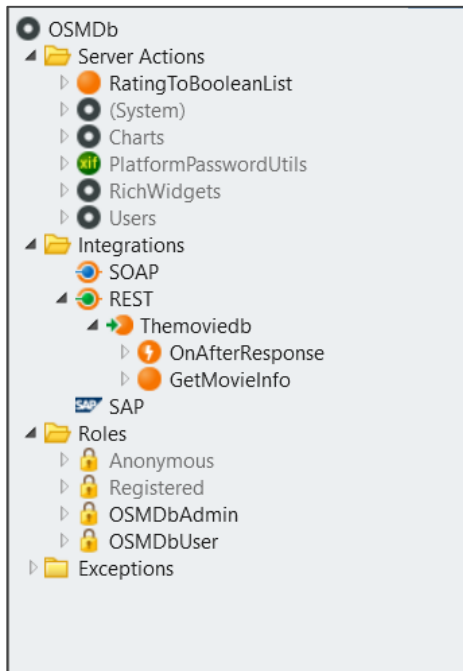




Logic layer (Ctrl + 3)



- Server Actions - globally callable code
- Integrations
 - SOAP & REST - Web Services
 - SAP - SAP connector/integration
- Roles - security Roles
 - Anonymous, Registered and custom
- Exceptions

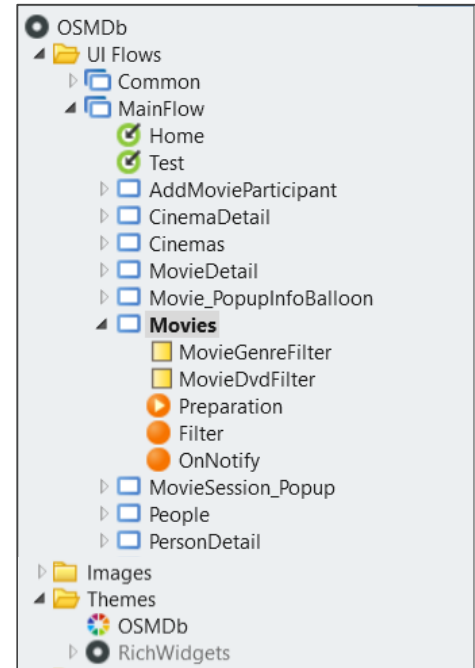




Interface layer (Ctrl + 2)



- UI Flows
 - Screens
 - Patterns
- Images - graphics, icons, etc.
- Themes - base look and feel

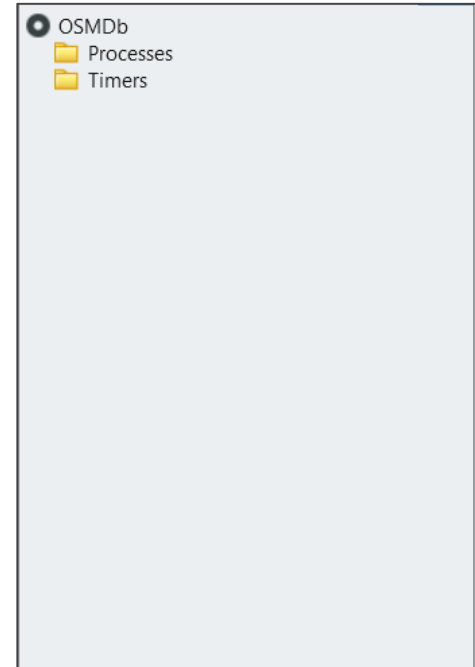




Process layer (Ctrl + 1)

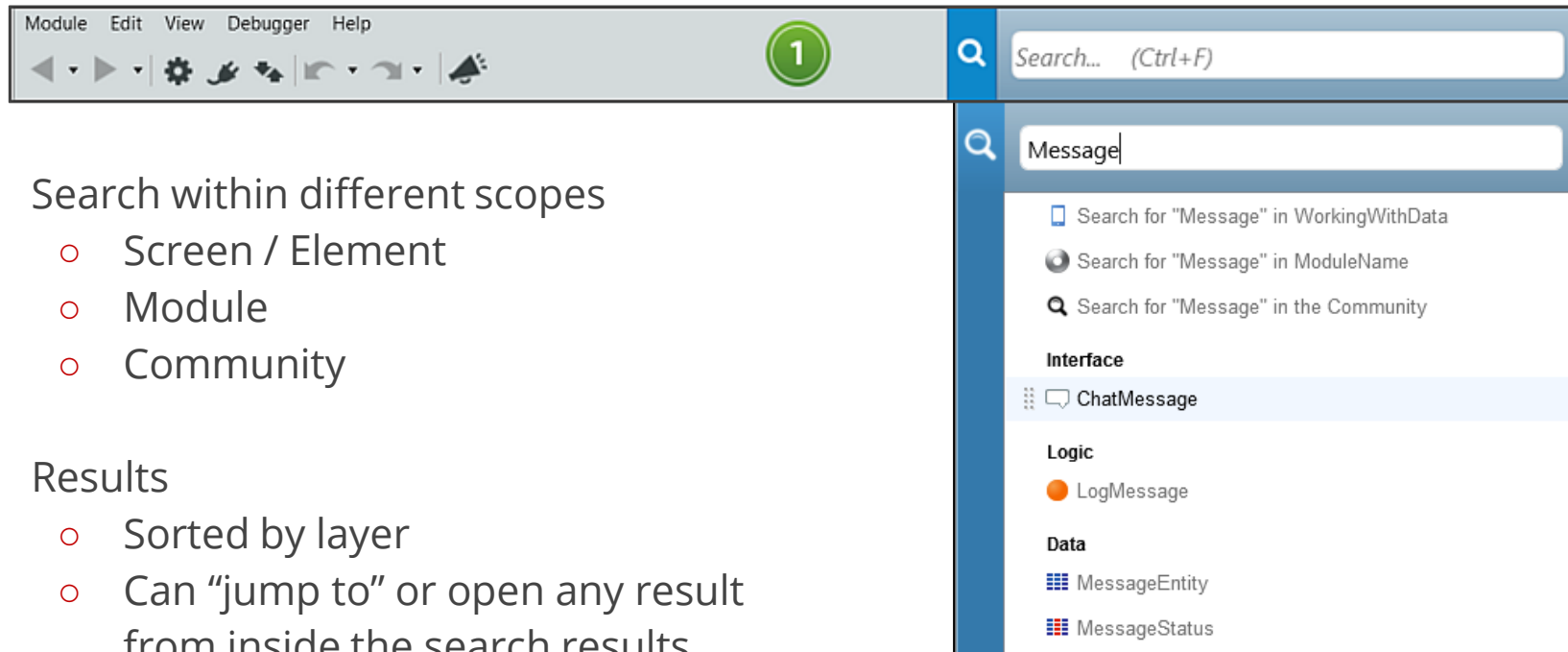


- Processes
 - Business Processes
 - Human & automated Tasks
 - Decisions, Events & Waits
- Timers
 - Scheduled actions (specific time)
 - Intervals (daily, weekly, etc.)
 - Priorities
 - Timeouts

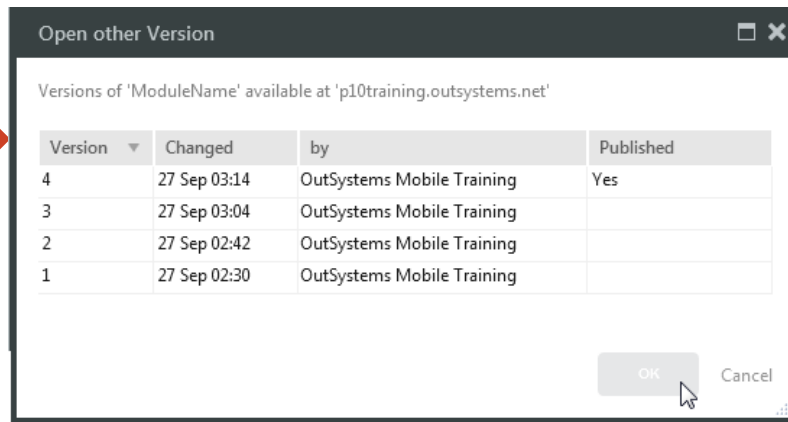
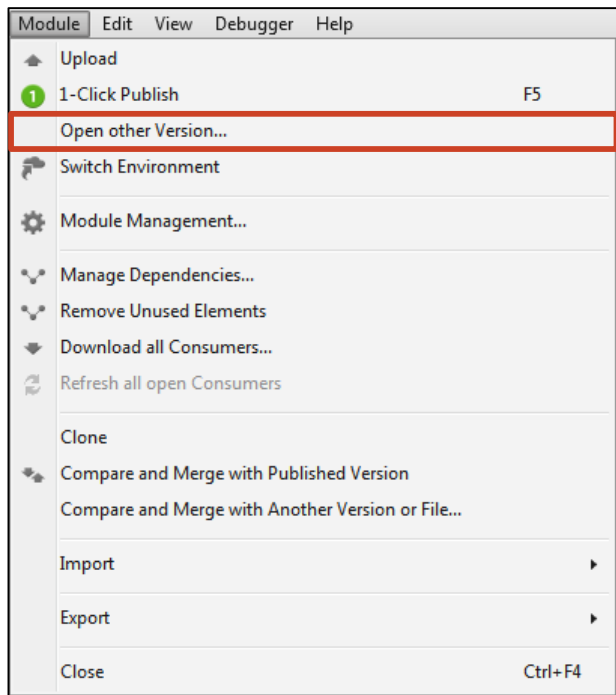


Search (Ctrl + F)

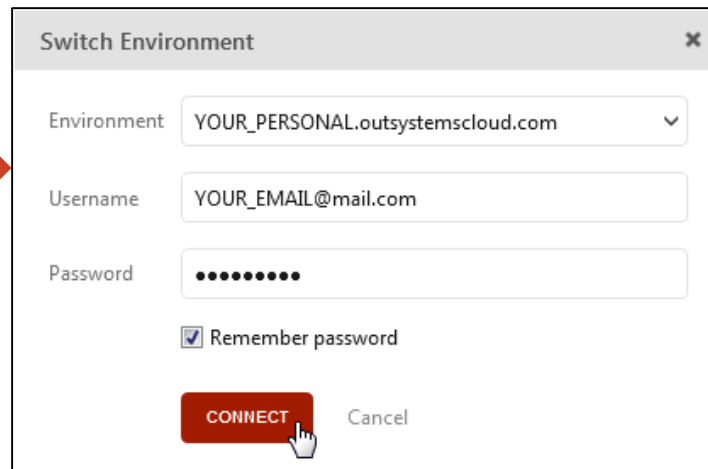
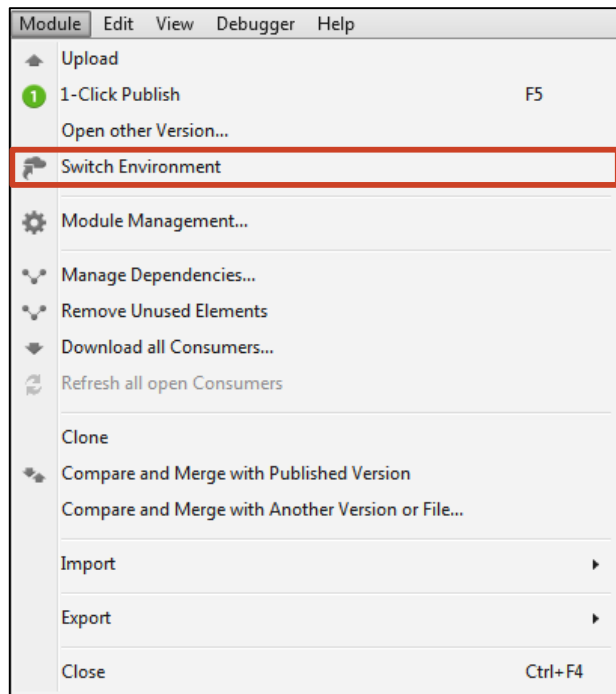
- Search within different scopes
 - Screen / Element
 - Module
 - Community
- Results
 - Sorted by layer
 - Can “jump to” or open any result from inside the search results



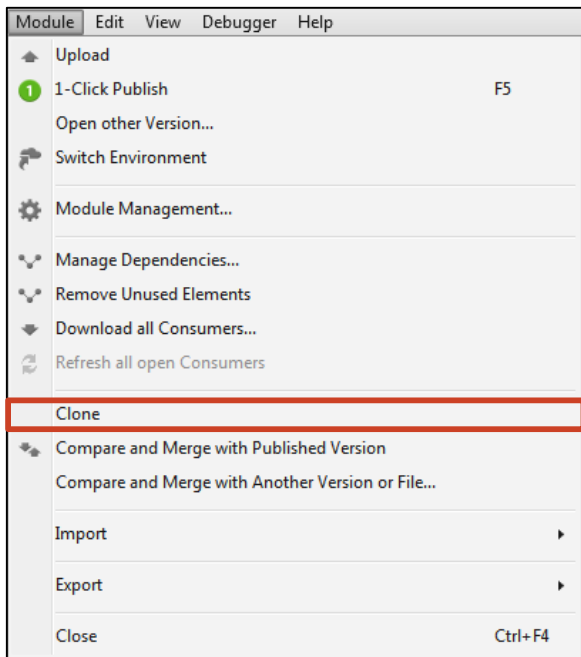
Module menu: Open other Version...



Module menu: Switch environment



Module menu: Clone



- What is cloning?
 - Creates a copy of the module
 - ModuleName > CloneOfModuleName
 - Clone get a new module Id
 - Duplicates all module resources
- Why use cloning?
 - Refactoring
 - Splitting a module in 2 or more modules



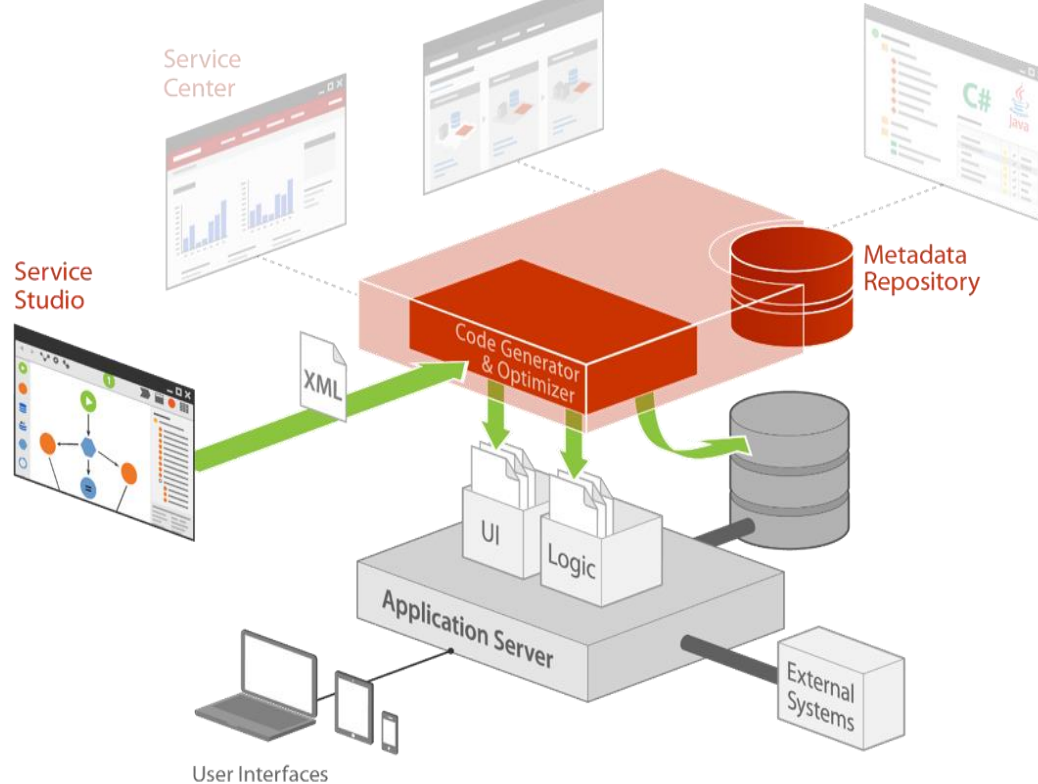
Publishing to Server

TrueChange

The screenshot displays the TrueChange OSMDb application interface. The main window shows a 'Movies' page with a search bar labeled 'Search Title and Plot' and a 'Filter' button. A 'Combo Box' is highlighted with a red box, showing '- All Genres'. Below the search bar is a table with columns: Title, Year, Plot Summary, and Gross Takings. The table contains one record for 'Star Wars: The Force Awakens' from 2015, with a gross takings of 815843529. The right sidebar shows a 'Widget Tree' with a 'Movies' section containing 'Common/Layout', 'Left', 'Center', 'Right', 'HeaderContent', 'Breadcrumbs', 'Title', 'Actions', 'MainContent', 'Container', 'input', 'select', 'checkbox', 'Only on DVD', 'Filter', 'MovieTable', and 'Footer'. The bottom debugger window shows 1 error and 1 warning. The error message states: 'Variable' must be set with a variable of MovieGenre Identifier datatype in Combo Box. The warning message states: Session Variable 'MovieGenFilter' is never used in Module 'OSMDb'. Consider deleting it. The TrueChange logo is visible in the bottom right corner of the application window.

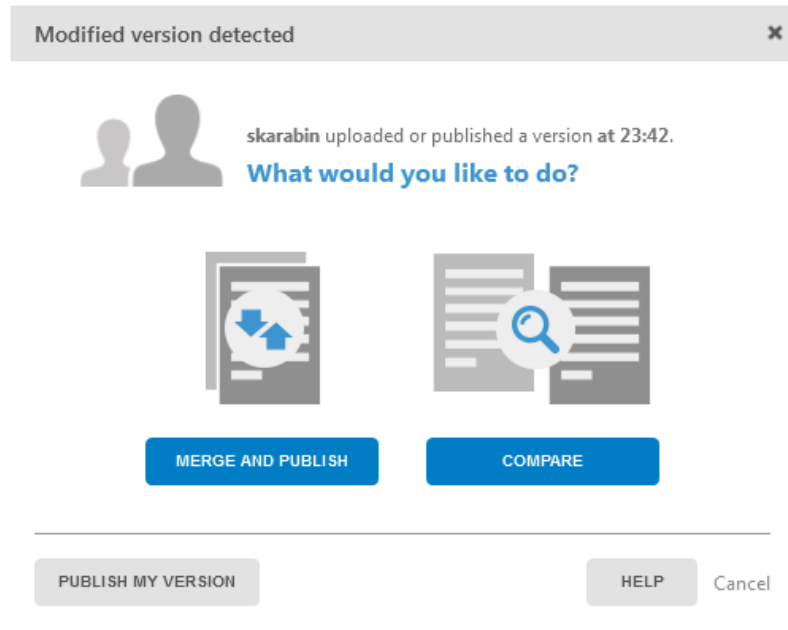
OSMDb uploaded yesterday at 3:18 PM | os11training.outsystems.net

1-Click Publication to Server



Compare and Merge

Support for collaborative development over the same application modules



Compare and Merge (cont.)



Compare and Merge

Select the elements to keep from either version.

Your version (uploaded at 19:48)

- ModuleName
 - UI Flows
 - MainFlow
 - ☒ HelloWorldScreen
 - ☒ WorkingWithData
 - Entities
 - Database
 - ☒ MessageEntity
 - ☒ Name
 - ☒ Message
 - ☒ ColorId
 - ☒ AutoIndex_ColorId

HomeWorldScreen
Screen
Modified by skarabin at 21:15

Name	HomeWorldScreen
Description	Simplest example
Title	
Roles	
Anonymous	<input type="checkbox"/>
Registered	<input checked="" type="checkbox"/>
Events	
On Ready	
On Render	

The other version (uploaded at 19:48)

- ModuleName
 - UI Flows
 - MainFlow
 - ☐ HomeScreen
 - ☐ --
 - Entities
 - Database
 - ☐ Entity1
 - ☐ Attribute1
 - ☐ --
 - ☐ --
 - ☐ --

HomeScreen
Screen

Name	HomeScreen
Description	
Title	
Roles	
Anonymous	<input checked="" type="checkbox"/>
Registered	<input checked="" type="checkbox"/>
Events	
On Ready	
On Render	

MERGE **HELP** Cancel

1-Click Publication to Server (cont.)

The screenshot shows the outsystems IDE interface. The top toolbar contains a red box around the 'Publish' button (a blue circle with a white arrow). The main window displays a web application for OSMDb (Open Movie Database). The application shows the details for the movie 'Star Wars: The Last Jedi'.

MovieDetail

os11training.outsystems.net/OSMDb/MovieDetail.aspx?MovieId=10&(Not.Licensed.For.Production)=

OSMDb

Movies People

AA Administrator

Star Wars: The Last Jedi

Title * Star Wars: The Last Jedi

Average Rating ★★★★★
out of 1 ratings

Year * 2017

Plot Summary Rey develops her newly discovered abilities with the guidance of Luke Skywalker, who is unsettled by the strength

Genre -

Gross Takings 1333000000

Is Available On DVD ☒

Your rating: ★★★★★

Comment

Is Frequent Dest... No
Style Sheet
JavaScript
Extended Properties

1 Warning Debugger

OSMDb uploaded at 10:59 AM | os11training.outsystems.net



Service Studio Overview

Thank You!