

# Table of Contents

- Quick Tour
  - Introduction
  - Configuration
  - Testing
  - Application Deployment
- Installation Guide
  - Database integration
    - MySQL
    - MS SQL Server
    - Oracle
    - MS Azure, Maria DB & PostgreSQL
  - Windows Installation
  - Linux Installation
  - MacOS Installation
  - Deployment Options
  - Java installation
  - Troubleshooting
- Getting Started
  - Introduction
  - Configuring Applications
  - Testing Application
  - Making Changes to the Application
  - Deploying the Application
- AwareIM Concepts
  - Basic Concepts
    - Business Objects as Carriers of Data
    - Business Rules as Carriers of Business Logic
    - Processes as Links between User Interface and Business Logic
    - Reference Attributes
    - Business Space
    - Business Object Groups
  - User Interface
    - Visual Perspective
    - Operations
  - Data Entry and Editing
    - Business Object Forms
    - Form Sections
    - Navigation Style
    - Form Operations
  - Data Retrieval
    - Configuring Queries
    - Queries that Require User Input
    - Running Queries in the Operation Mode
    - Building Queries in the Operation Mode
    - Searching for Data using Forms
  - Data Presentation
    - Standard Form of Query Results
    - Custom Form of Query Results
    - Calendar Form of Query Results
  - Data Processing
    - Rule Evaluation

- Evaluation of Unordered Rule Collections
  - Overview of the Rule Engine Framework
  - Example of Rule Engine Execution
  - "While" Semantics
  - Did it Change?
  - Rule Priorities
- Context of Rule Execution
  - How Context is Formed
  - Instance Prefixes
  - Other Usages of Context
- Context
- Aggregate Operations
- Action Execution
- Cross-reference Rules
- Other Points Related to Action Execution
- Evaluation of Rule Collections
- Evaluation of Rules Containing WAS CHANGED expressions
- Initialization Rules
- Summary of Rule Evaluation
- Rules and Transactions
  - Long Operations
  - Batch Operations
  - Process Failure Rules
- Execution Log
- Rule Debugger
- Configuration of Rules
- Productivity Features
  - Access Control
    - Access Level
    - Login
  - Working with Documents and Reports
    - Document Management
    - Document Generation
    - Reports
  - Communication with Other Systems
    - Intelligent Business Objects
    - Requesting Services and Sending Notifications
    - Integration With Stripe Payments
  - Export and Import
    - Export and Import in the Operation Mode
    - Export and Import from Business Rules
    - Exporting and Importing Relationships
  - Scheduling
  - E-mail Handling
  - Setting Initial Values of the Application
  - Extending AwareIM
  - Performance Profiler
- Configuration Process
  - Configuration Guidelines
    - Configuration steps
      - Business objects

- Business object rules
  - Processes
  - User interface
  - Configuration principles
    - Business objects represent elements of business environment
    - Business object groups unite dissimilar objects
    - Object rules perform all information processing
    - Object rules are self-contained
    - Object rules are attached to the right objects
  - Business Space Versions and Version Control
  - Productivity Features
  - Testing Mode
  - Working with AwareIM in Hosting Environment
- Aspects of Information Management System
- Data Storage
- Configuring Applications
  - Working with Business Space Versions
    - Major and Minor Versions
      - Creating Minor Version
      - Creating Major Version
    - Lifecycle of a Business Space Version
    - Loading Business Space Version
    - Updating Business Space Version
    - Checking Version Integrity
    - Testing Business Space Version
    - Publishing Business Space Version
    - Working with a Business Space Version in a Multi-Developer Mode
    - Deleting Business Space Version
    - Viewing Properties and History of the Business Space Version
    - Exporting Business Space Version
    - Importing Business Space Version
    - Refreshing Business Space Version
  - Working with Configuration Elements
    - Adding Elements
    - Editing/Viewing Elements
    - Deleting Elements
    - Copying Elements
    - Pasting Elements
  - Adding/Editing Business Objects
    - Specifying General Properties
      - Name
      - Description
      - Category
      - Persistence
      - Communication
      - Attributes tab
      - Forms tab
      - Update and Deletion Rules tabs
      - Presentations tab
    - Defining Forms
      - Form Properties

- Name
- Description
- Width
- Height
- Stretch to bottom of screen
- Panel Header and Caption
- Use automatic
- Navigation Type
- Tab reordering
- Mobile tabs
- Tabbar position
- Centre Align Form
- Autosave
- Display Mask
- Button Aligment
- Panel Operations
- Form Auto Refresh Settings
- Form panel resizing
- CSS Style and CSS class
- Responsiveness
- Tour
- Scripts
- Adding/Editing Form Sections
  - Form Section Properties
  - Defining Form Section Layout
  - Specifying which attributes will be shown on the form
  - Cell Properties
  - Multiple columns
  - Merging and splitting cells
  - Displaying reference tables
  - Putting cells inside group boxes
  - Adding HTML
  - Adding buttons/links to forms
  - Forms that use Google Maps
  - Forms that use Gauge Chart
  - Forms that use QR codes
  - Forms that use Barcodes
  - Show preview of the form on phones and tablets
- Adding/Editing Panel Operations
  - Edit Toolbar
  - Adding/Editing an operation
  - Operation Types
- Adding/Editing Forms
- Adding Custom HTML forms
- Defining Intelligent Business Objects
  - Setting Properties of the E-mail Channel
  - Setting Properties of the SOAP Channel
  - Setting Properties of the URL Channel
  - Setting Properties of the REST Channel
- Defining Presentations
- Adding Business Objects from JSON Schema

- Adding/Editing Attributes
  - Setting Properties of Reference Attributes
    - Displaying references as a table
    - Displaying references as a tree
    - Diagram of Object Relationships
  - Common Properties
  - Setting Properties of Plain Text Attributes
  - Setting Properties of Number Attributes
  - Setting Properties of Date, Timestamp and Duration Attributes
  - Setting Properties of Picture Attributes
  - Setting Properties of Document Attributes
  - Setting Properties of Shortcut Attributes
  - Setting Properties of Yes/No Attributes
- Adding/Editing Rules
  - Working with Rule Collection
    - Adding/Editing Rule using Standard View
    - Adding/Editing Rule using Textual View
  - Rule Properties
  - Context Assistant
- Adding/Editing Queries
  - Displaying Query Results
    - Standard Grid
    - Custom Presentation
    - Calendar/Scheduler Presentation
    - Chart Presentation
    - Timeline of Events Presentation
    - Tree Presentation
    - Query Filters
  - Query Properties
  - Specifying Query Using Standard View
  - Specifying Query Using Textual View
- Adding/Editing Visual Perspectives
  - Working with Visual Perspective Editor
    - Defining Layout of Content Panels
      - Responsive Grid (Simple) Layout
      - Responsive Grid (Nested) Layout
      - Vertical Anchor Layout
      - Vertical Box Layout
      - Horizontal Layout
      - Column Layout
      - Table Layout
      - Border Layout
      - Accordion Layout
      - Setting Menu Properties
      - Setting Menu Item Properties
    - Defining Frame Properties
    - Defining Tab Properties
    - Defining Content Panel Properties
    - Defining Content Panel with HTML Content
    - Using Tiles in Dashboards
- Working with Data Stored in Existing Database Tables or LDAP

- Defining Business Objects that Use Existing Database Tables
- Defining Business Objects that Use Data from LDAP Server /Active Directory
- Using LDAP/Active Directory for Login
- Email Handling
  - Setting Options for Incoming E-mail Handling
  - Sending Outgoing E-mail
  - Handling Unsent E-mail
- Working with Report/Presentation Designer
  - Editing Report/Presentation Elements
    - Editing General Properties
    - Editing Text Element
    - Editing Tag Element
    - Setting Hyperlink Properties
    - Editing Graphical Elements
    - Editing Conditional Element
    - Editing Sub-report/Sub-presentation Element
    - Editing Table Element
    - Working with Charts
  - Report/Presentation Bands
  - Adding Report/Presentation Elements
  - Setting System Calculation Properties
  - Using Toolbar to change Report/Presentation Elements
  - Setting Report/Presentation Properties
  - Add/Delete Group Bands
  - Adding/Deleting Custom Font
  - Finding Design Element
  - Alignment and Positioning
  - Previewing the Report
  - Miscellaneous Commands
- Overview of the Configuration Tool
- Finding where Element is Used
- Adding/Editing Processes
- Adding/Editing Business Object Groups
- Adding/Editing Notifications
- Adding/Editing Document Templates
- Adding/Editing Access Levels
- Multi-step Processes
- Adding/Editing Worksheets
- Form and Grid Styles
- Creating Applications in Different Languages
- Right-to-left Support
- Adding/Editing Services
- Scheduling
- Adding/Editing Business Spaces
- Handling Login Events
- Handling Logout Events
- Adding Appointment Objects
- Login via social media sites and other applications
- Implementing Single Sign-on using SAML protocol
- Generating Documentation
- View Configuration Tool Settings

- Show System Objects
- Searching for Elements in a Business Space Version
- Backing up and Restoring Operational Data
- Data Migration
- Managing Configuration Users
- Working on the Same Business Space Version Concurrently (Multi-Developer Mode)
- Protecting Business Space Version
- Comparing Business Space Versions
- Logging into the Operation Mode
- Re-connecting to the AwareIM Server
- Undoing and Redoing Changes
- Building Runtime Executable
- Configuring Applications for Mobile Devices
- Creating Native Mobile Applications
- Determining Current Location of the User
- Rule Language
  - About this document
  - Conventions
  - Rule Definition
  - Rule Condition
  - Actions
  - Special usage of rules
  - Notes on rule execution
- Actions And Functions
  - Actions
  - Functions
- Mobile Applications
  - Introduction
  - General Approach
  - Login
  - Using Visual Perspectives
  - Using Queries
  - Using Forms of Business Objects
  - Display & Upload Images from Camera and/or Photo Library
  - Sending Push Notifications to Mobile Phones
  - Getting Location of the Current User
  - Displaying Google Maps
  - Embedding Video
  - Using Processes
  - Building native mobile applications
- How To...
  - AwareIM Basics
    - How to go about system configuration
    - How to start configuring the system
    - How to define database tables and database columns
    - How to define links between database tables
    - How to set up calculated fields
    - How to set up business rules
    - How to test the configured system
    - How to deploy the configured system
    - How to create records

- How to edit records
- How to look for records
- How to delete records
- How to change default database used
- Forms And User Interfaces
  - How to design a form
  - How to attach actions to buttons
  - How to control the order of attributes on automatically generated forms
  - How to initialize form controls
  - How to validate user input
  - How to set up custom form layout
  - How to set up forms with tabs
  - How to use different forms for different users
  - How to show related records
  - How to choose values from a list
  - How to set up system menu
  - How to set up custom menu
  - How to customize colors and fonts
  - How to display a hierarchy of related records
  - How to display Microsoft Outlook-like calendar
  - How to synchronize with Google, Outlook, Exchange and other third party calendars
  - How to show records in different colors
  - How to display different icons for different types of records
  - How to display a form of a child object inside the form of the parent object
  - How to display attributes in different colors
  - How to display attributes as read-only
  - How to make an attribute visible, read-only, mandatory or display a different set of choices on a particular form only
  - How to implement "wizard" forms
  - How to make your application "responsive" to different screen sizes
  - How to recalculate values in controls dynamically after a user changes some values
  - How to show/hide/disable/enable controls dynamically after a user changes some values
  - How to start processes from forms
  - How to show Google Maps
  - How to show thumbnails
  - How to create dashboards and allow end users to customize them
  - How to implement item reordering within a grid or custom query
  - How to implement drag-and-drop between grids
  - How to use the "Screen Tour" feature
  - How to add support for electronic signature to your application
  - How to add right-to-left support
  - How to embed video in a form
  - How to use CSS
  - How to use icon fonts to display an icon for a button
  - How to display colour editor
  - How to let users edit images stored in attributes of the Picture type
- Charts
  - How to show charts
  - How to add Gantt chart to your application
  - How to use charts in reports

- Business Rules
  - What is the difference between processes and business rules?
  - How to define a rule
  - How to find a rule
  - How to deal with rules that need to be evaluated in a strict order
  - How to make sure that action is executed only once
  - How to perform an action on multiple business objects
  - How to check whether rules are executing correctly
- Reports And Documents
  - How to design a report
  - How to produce and print out a report
  - How to refer to database fields in a report
  - How to perform calculations in a report
  - How to group records in a report
  - How to include related records in a report
  - How to include an element in a report conditionally
  - How to print an element in different colors depending on some conditions
  - How to enumerate elements in a report
  - How to re-use a report
  - How to store documents and files
  - How to do "document merge"
  - How to let end users define their own reports, document templates and queries
  - How to implement multiple file upload for documents
  - How to let users edit documents
  - How to work with embedded spreadsheets
- Users And Login
- Emails
- Security And Protection
- Integration With Other Systems
- Mobile Applications
- Miscellaneous
- Tips and Tricks
- Programmer's Reference
  - Adding custom processes
    - Writing code for a custom process component
    - Examples of custom process components
    - IExecutionEngine interface
    - IExecutionContext interface
    - IEntity interface
    - IEntityTemplate interface
    - INotification interface
  - Adding custom channels
    - Implementing Channel's Source and Sink
      - Writing a Sink
      - Writing a Source
      - Handling replies to service requests
      - MessageInterpreter class
      - MessageBuilder class
    - Implementing Channel Type component
    - Implementing Channel Settings Editor
  - Adding function libraries

- Implementing function library
  - ISQLBuilderHelper interface
  - Function library example
- Adding custom document types
  - Implementing Client Side Component
  - Implementing Server Side Component
  - DataPresentationTemplate class
  - IDocumentDataSource interface
  - Document Engine Example
- Adding report scriptlets
  - Implementing code for the scriptlet
  - IReportEnvironment interface
  - Report Scriptlet Example
- Writing client-side plugins
  - Using Javascript to integrate custom Cordova plugins for native mobile applications
    - Creating a contact on the phone
    - Send email to the selected contact
  - Architecture of the client-side code
  - Modifying default behavior and presentation of queries
  - Modifying default behavior and presentation of forms
  - Modifying default behavior and presentation of form sections
  - Modifying default presentation of individual fields on forms
  - Modifying default behavior of menu in visual perspectives
  - Modifying default behavior and presentation of content panels in visual perspectives
  - AwareApp object
- Adding programming extensions to AwareIM
- General Guidelines
- Methods
- Appendix A: correspondence of attribute types and Java types
- AI Integration
  - Data Maestro
  - Data Maestro In CRM Sample App
- Videos
  - 1. Getting Started with AwareIM
  - 2. AwareIM Deployment and Configuration
  - 3. Creating your First AwareIM Application
  - 4. Relationships in AwareIM
  - 5. Relationship Diagrams
  - 6. Forms
  - 7. Presentation Styles and Presentation Rules in Forms
  - 8. Adding Buttons and HTML to Forms
  - 9. Advanced Forms
  - 26. User Defined Documents
  - 10. Custom HTML forms
  - 11. Business Rules
  - 12. Rule Execution
  - 13. Processes
  - 14. Rule Context and Instance Prefixes
  - 15. Rule Debugger
  - 16. Using CREATE Action in Business Rules

- 17. Queries
- 18. Presentation of Queries
- 19. Displaying Attributes of Related Objects Using Shortcuts
- 20. Custom Queries
- 21. Kanban Boards
- 22. Visual Perspectives
- 23. Access Control
- 24. Document Templates
- 25. Document Files
- 27. Images
- 28. Emails
- 29. Calendar and Scheduler
- 30. Trees
- 31. Charts
- 32. Gantt Charts
- 33. Google Maps
- 34. Mobile Applications
- 35. Building Native Mobile Applications
- 36. Building Native Mobile Applications Using Monaca
- 37. Sending Push Notifications
- 38. Accessing Camera, Photo Library, Retrieving Geo Location
- 39. Deploying Applications for Multiple Tenants
- 40. Accessing Existing Databases, Active Directory and LDAP
- 41. Web Services
- 42. Consuming REST-ful Services
- 43. Developing Applications for Different Languages
- 44. User Defined Workflows
- 45. Import and Export Templates
- 46. Using Performance Profiler
- 47. Interacting with Preview
- 48. Concurrent Development
- 49. Responsiveness
- 50. Offline Mode
- 51. Auto Refresh
- 52. Business Object Groups
- 53. Standalone Input Controls
- 54. User Tours
- 55. Cascading Drop Downs
- 56. Form and Grid Styles
- 57. Auto-Incremented Attributes
- 58. User Defined Dashboards
- 59. Multi-step Processes
- 60. Long-running Processes
- 61. Using CSS and Javascript
- 62. Optimization of AwareIM Applications
- 63. Developing Java Plugings - Part 1
- 64. Developing Java Plugings - Part 2
- 65. Developing Java Plugings - Part 3
- 66. Building an Application (part 1 of 6)
- 67. Building an Application (part 2 of 6)
- 68. Building an Application (part 3 of 6)

- 69. Building an Application (part 4 of 6)
- 70. Building an Application (part 5 of 6)
- 71. Building an Application (part 6 of 6)
- 72. Integration with Stripe Multiparty Payments
- 73. Version 9.0
- 74. Query Filters
- 75. Tiles In Visual Perspectives
- 76. Inline Editing Widgets
- 77. Google Maps Markers
- 78. Improvements In Charts
- 79. Version 10
- 80. Using Ai
- 81. Data & Import Export
- Case Study
  - Configuration of the Library Application
    - Business Objects and Relationships
      - Configuration of Business Objects
        - Defining ItemType Object
        - Defining Item Object
        - Defining a Reference Attribute
        - Defining Loan Object
        - Defining Member Object
        - Defining Other Objects
      - Attributes of Business Objects
    - Business Rules
      - Item Object
      - Member Object
      - Loan Object
      - Reservation Object
      - Payment Object
    - Operations
      - "Borrow item" operation
        - Invoking the "Borrow Item" operation from the Member form
        - Invoking the "Borrow Item" operation from the Item form
        - Invoking the "Borrow Item" operation from query results
      - Expiring Reservations and Processing Overdue Loans
        - Expiring Reservations
        - Processing Overdue Loans
      - "Register new member" operation
      - "Find member" operation
      - "Change member details" operation
      - "Register new item" operation
      - "Find item" operation
      - "Change item details" operation
      - "Register new item type" operation
      - "Change item type details" operation
      - "Renew Loan" operation
      - "Return Item" operation
      - "Reserve Item" operation
      - "Cancel Reservation" operation
      - "Register Fee" operation

- "Register Payment" operation
  - Fine-tuning the Application
    - Improving forms
      - Creating different forms for entry and editing.
      - Creating multi-tabbed form.
      - Improving form layout
      - Presentation of simple attributes
      - Presentation of reference attributes
    - Documents
    - Access Control
    - Improving operations
    - Additional operations
  - Implementing Other Requirements
    - Managing Communication with Members
      - Communication Business Objects
      - Communication Business Object Groups
      - Communication Business rules
      - Communication Operations
      - Communication User interface
    - Payment by credit card
    - System initialization
  - Testing the Application
  - Operating the final system
  - Introduction
  - Versions of the Library Application
  - Library Application
- Glossary
  - Appendices
    - A. AwareIM Property Files
      - Setting Properties of the AwareIM server
      - Setting Properties of the Configuration Tool
      - Setting Properties of the AwareIM Web Application
    - Known Bugs and Limitations
    - Number Format in Java Programming Language
    - Links to AwareIM operations
    - Regular Expressions.
  - Changelog
  - Introduction

From:

<http://www.awareim.com/dokuwiki/> - **Documentation**

Permanent link:

<http://www.awareim.com/dokuwiki/sidebar?rev=1749631420>

Last update: **2025/06/11 08:43**

