

RSA® ARCHER® GRC Platform Implementation Guide

RSA Archer - Mendix

RSA Exchange
Last Modified: 08 Feb, 2019

Integration Overview

Mendix helps enterprises create, deploy and manage apps with an application platform that empowers everyone in the enterprise to build and continuously improve apps at unprecedented speed and scale. Mendix is a low-code software platform. Mendix is the fastest and easiest platform to build and continuously improve Mobile and Web apps that enable innovation at web scale. It is the only application platform that provides a comprehensive, integrated set of tools for the entire app lifecycle, from ideation and development through deployment and operation.

Through integration with Mendix, customers can access the RSA Archer Platform via a variety of supported mobile devices both on iOS and Android. Customers can customize their Mendix-based apps to suit their specific user experience and business requirements and interact with the RSA Archer suite using the RSA Archer public APIs.

You can leverage the Mendix Cloud security and scalability capabilities to get up and running quickly or leverage your own infrastructure and run your apps on-premise or in a private cloud. With this integration, you can utilize build-to-purpose Mendix modules and templates that can be used as building blocks to create an app on the Mendix platform.

Key Features and Benefits

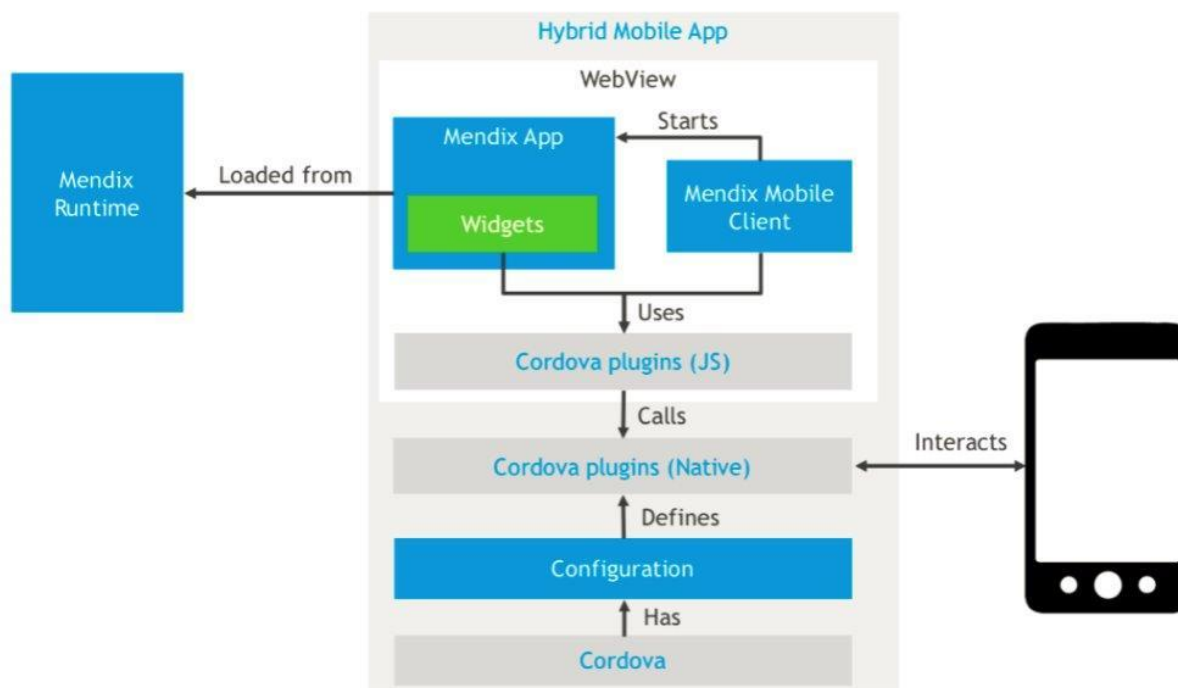
With RSA Archer - Mendix, you will be able to:

- Quickly implement purpose-built mobile apps for your business
- Customize the app environments based on your user behaviors such as building new enterprise applications for desktop users, adding a mobile user interface to an existing system, or building a dedicated tablet application rapidly.
- Employ Mendix's built-in social collaboration features to collaborate with individuals and teams.

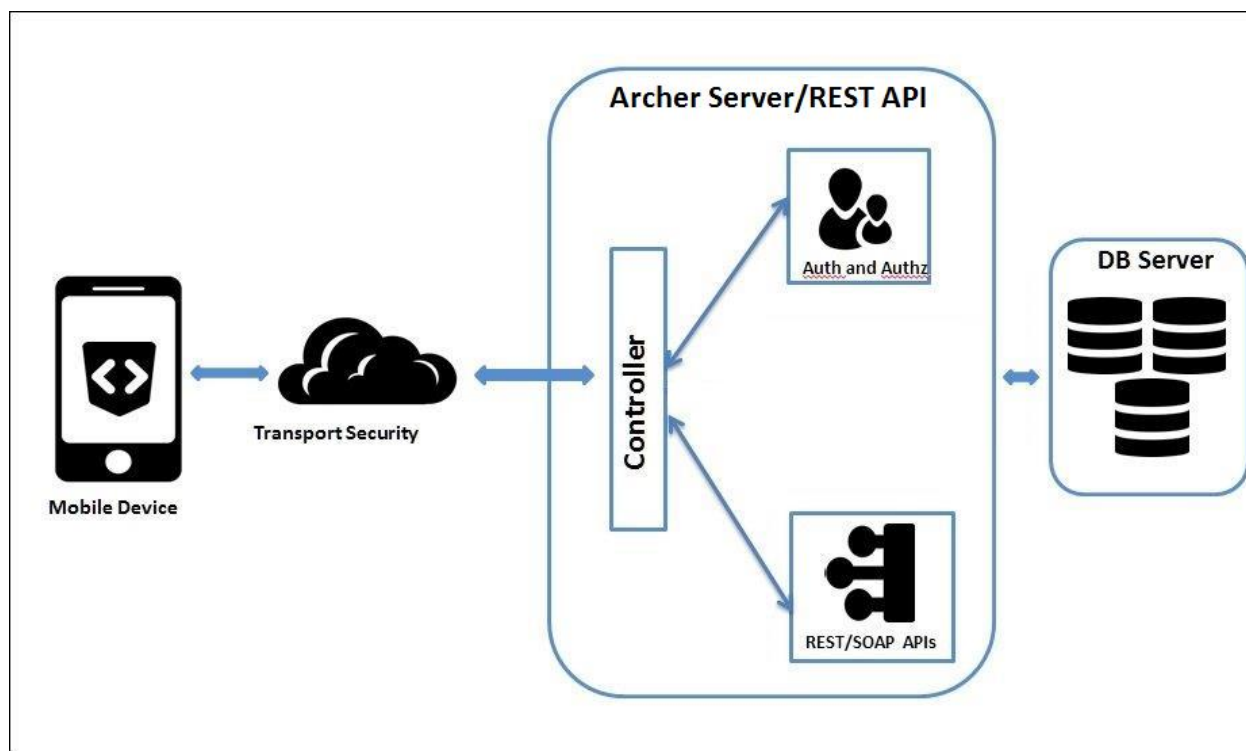
Partner Integration Overview	
RSA Archer Solution	Several
RSA Archer Use Case	Several
RSA Archer Applications	Several
Uses Custom Application	No
Requires On-Demand License	No

Architecture Diagram

The following diagram provides an overview of Mendix runtime.



The following diagram provides an overview of interaction between Mendix powered mobile app and the RSA Archer Suite.



The integration process follows the following flow:

1. Mobile application makes REST call for user authentication based on:
 - Username
 - Password
 - Instance
 - Domain (Optional)
2. The app then stores the session data until user logs out and makes subsequent REST calls based on the user actions.

Installation and Configuration

Before You Begin

This section provides instructions for configuring Mendix and RSA Archer Platform. This document is not intended to suggest optimum installations or configurations.

It is assumed that the reader has both working knowledge of all products involved, and the ability to perform the tasks outlined in this section. Administrators should have access to the product documentation for all products in order to install the required components.

! > Important: The integration described in this guide is being provided as a reference implementation for evaluation and testing purposes. It may or may not meet the needs and use cases for your organization. If additional customizations or enhancements are needed, it is recommended that customers contact RSA Professional Services for assistance.

Download and install the Mendix Desktop Modeler 7.18.1 from <https://docs.mendix.com/howto/modeling-basics/install-the-mendix-desktop-modeler>

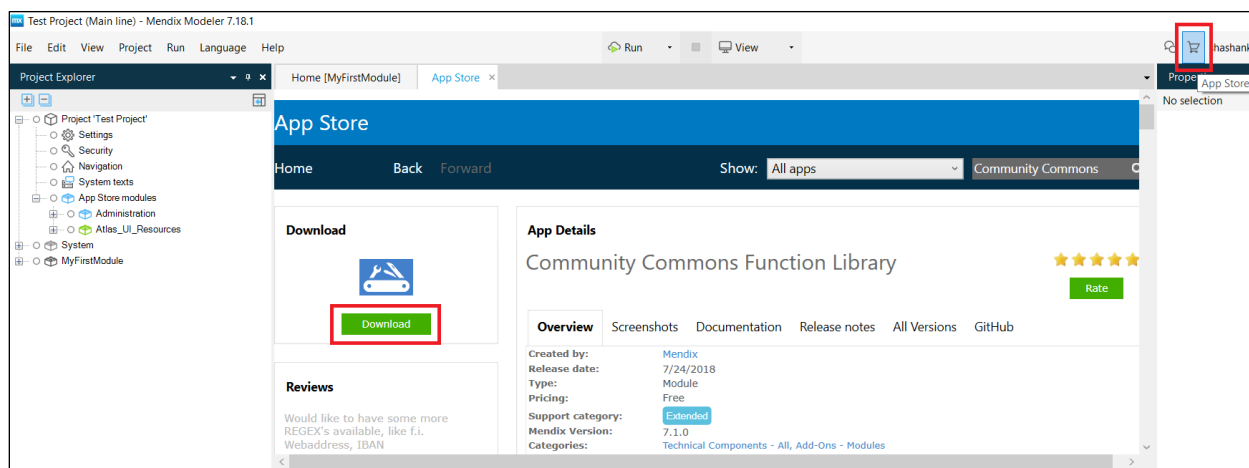
Prerequisites

Components	Recommended Software
Mendix Platform	Mendix Modeler 7.18.1
Browser Requirements	Internet Explorer / Chrome
App Device Requirements	Android / iOS
Licenses	Mendix App license
RSA Archer	RSA Archer 6.5 (and above)
Pre-requisite RSA Archer applications	Designed to work with all RSA Archer use cases.

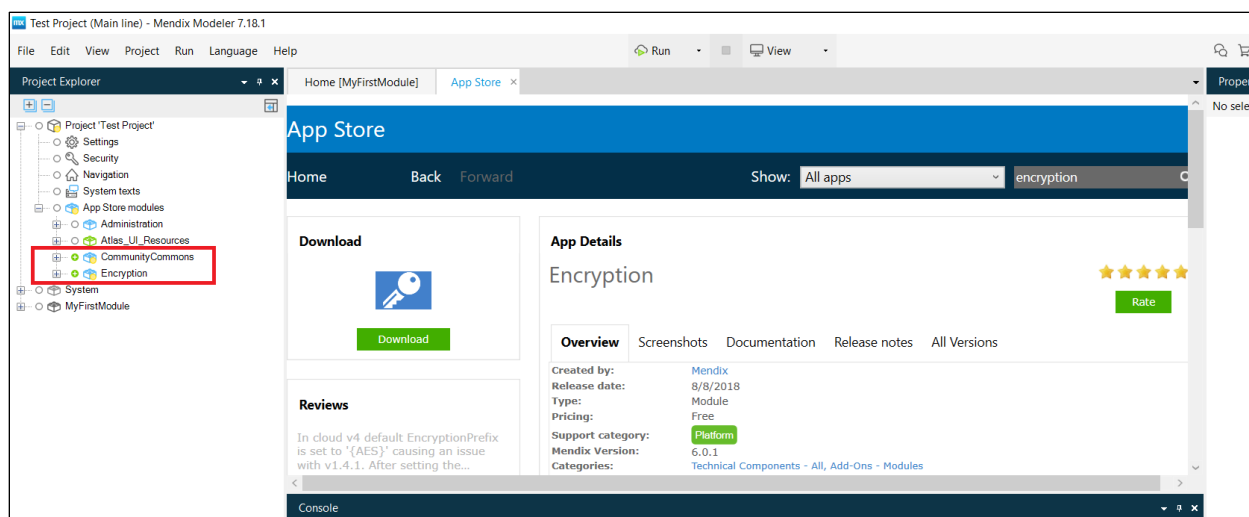
Installation and Configuration

1. To import modules or templates to the project: Go to the following link <https://docs.mendix.com/howto/integration/importing-and-exporting-objects>. And refer section 2.2 Importing Module Packages and follow the steps.
2. Download and Import the below modules or templates from Mendix app store:
 - Community Commons
 - Encryption

Click on 'App Store' icon in the Mendix Desktop Modeler and search for the above modules or templates to download:



The downloaded pre-requisite modules or templates should be present under App store modules of the project:



Module 1: RSA Archer Login module

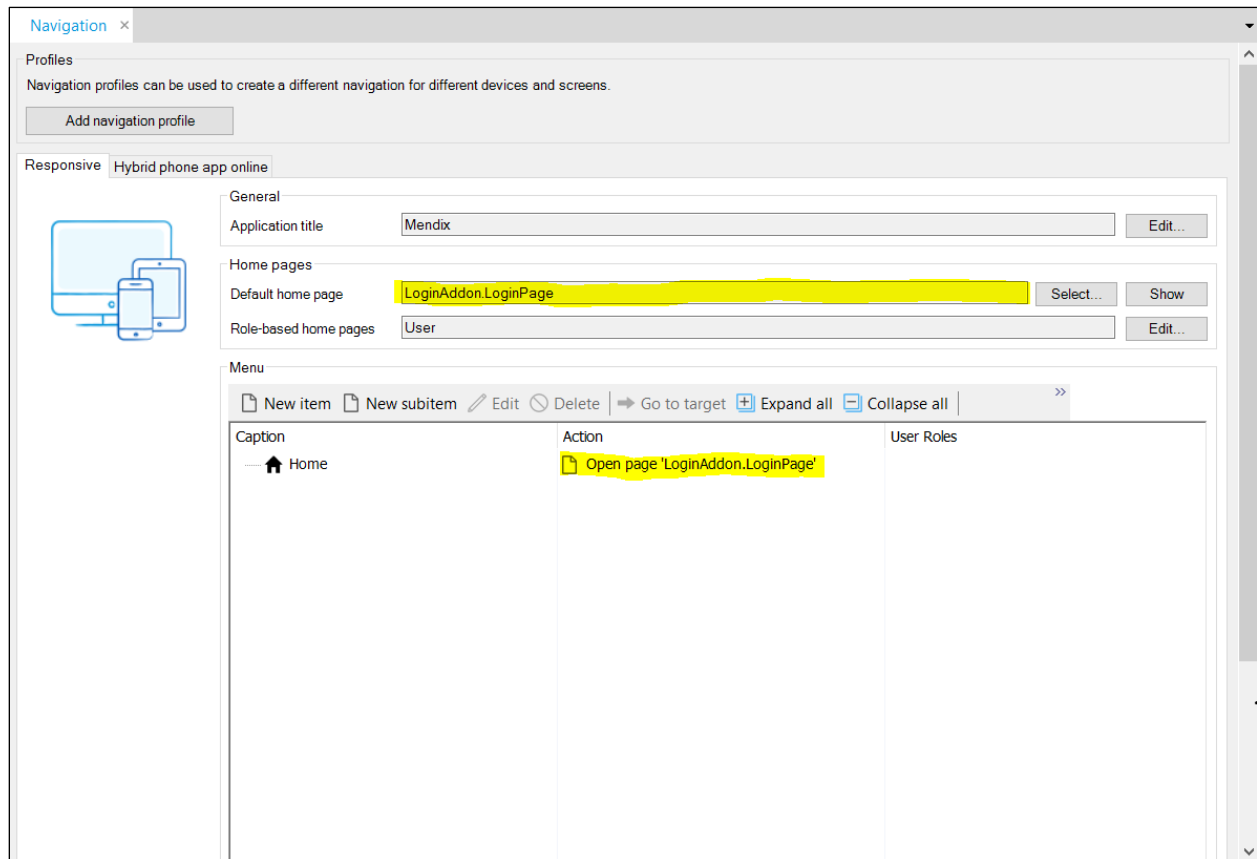
1. This module helps to log in to RSA Archer.
 - a. Module name: LoginAddon
 - b. Main microflow: IVK_Login (This microflow is called by overriding a java action).
2. Import module package 'LoginAddon.mpk' into the project.
3. Navigate to Project -> Settings -> runtime and set 'After startup' to LoginAddon.Startup microflow:

The screenshot shows the 'Project Settings' dialog box with the 'Runtime' tab selected. The 'Configurations' tab is also visible. The 'After startup' setting is set to 'LoginAddon.Startup'. Other settings include 'Static resources from disk' (No), 'Optimize network calls' (Yes), 'Before shutdown' (none), 'Health check' (none), 'First day of the week' (Default (based on locale)), 'Default time zone' (none), 'Scheduled event time zone' (UTC), 'Hash algorithm' (BCrypt (recommended)), 'Round numbers' (Half away from zero), 'Multiple sessions per user' (Yes), 'Uniqueness validation' (Database (recommended)), and 'Web service calls' (New (optimized) implementation).

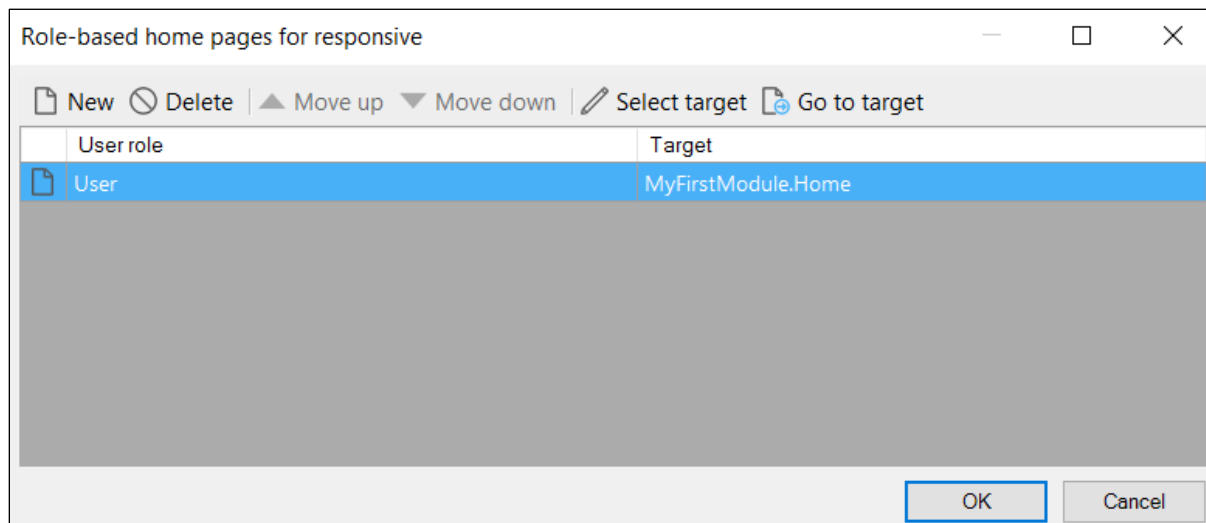
Setting	Value
Static resources from disk	<input type="radio"/> Yes <input checked="" type="radio"/> No
Optimize network calls	<input checked="" type="radio"/> Yes <input type="radio"/> No
After startup	LoginAddon.Startup
Before shutdown	(none)
Health check	(none)
First day of the week	Default (based on locale)
Default time zone	(none)
Scheduled event time zone	UTC
Hash algorithm	BCrypt (recommended)
Round numbers	<input checked="" type="radio"/> Half away from zero <input type="radio"/> Half to the nearest even number
Multiple sessions per user	<input checked="" type="radio"/> Yes <input type="radio"/> No
Uniqueness validation	<input type="radio"/> Runtime <input checked="" type="radio"/> Database (recommended)
Web service calls	<input checked="" type="radio"/> New (optimized) implementation <input type="radio"/> Old (deprecated) implementation

Buttons: ? OK Cancel

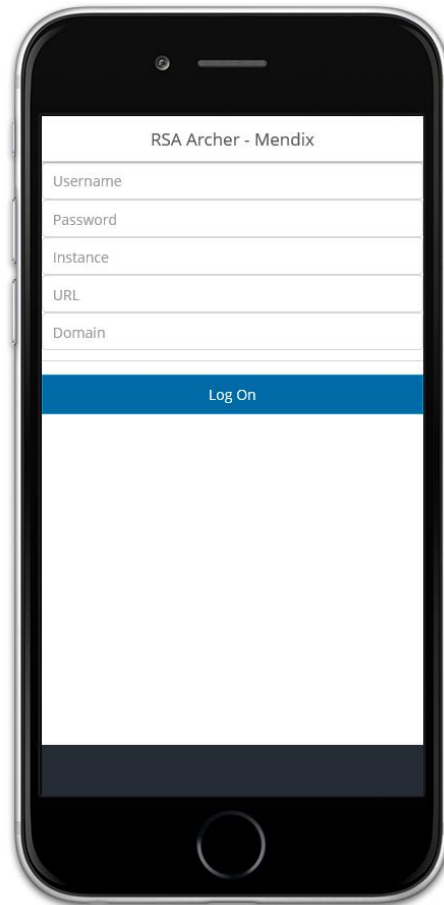
- Go to Project -> Navigation and Change the highlighted item below to LoginAddon.LoginPage.



- Go to Role based home page and add new user role and target (Landing page after successful login) as shown below.



- Run and view the response on a browser or Mendix App.



Module 2: RSA Archer Logout module

1. This module helps to logout from app and to end/kill RSA Archer session and Mendix session.
 - a. Module name: LogoutModule
 - b. Main microflow: LogoutMicroflow
2. Import module package 'LogoutModule.mpk' into the project.
3. Call the LogoutMicroflow on click of a button/link.

Module 3: RSA Archer Get Users module

1. This module helps to get all users from RSA Archer.
 - a. Module name: GetUsers
 - b. Main microflow: GetUsersList
2. Import module package 'GetUsers.mpk' into the project.
3. We have used an internal API and additionally we are able to replace internal API with the existing public API with minor changes to the microflow.

Note: After importing this module if you get any error then update security of domain model.
4. Call GetUsersList microflow wherever is required.

Template 1: RSA Archer Dashboard template

1. This template will have the following 3 reports data of Exception Requests application.
 - a. Exception Requests by Risk Rating:
 - i. Microflow: getRiskRatingReport
 - b. Exception Requests by Status:
 - i. Microflow: getStatusReportMF
 - c. Exception Expiration Trending (by Month):
 - i. Microflow: getTrendingByMonthReport

These microflows pre-process the data that can be used by the charting widgets. The SOAP service has been used to build the charts.

2. Import module package 'Dashboard.mpk' into the project.
3. Add a button widget and Call the **DashboardMicroflow** in any of the custom pages or Home page.

Ex: Call the **DashboardMicroflow** by creating a new item from the Navigation. (Refer screenshots below)

- a. Click on Edit button in the Microflow settings.
- b. Select 'Blocking' in Show progress bar of Microflow settings.
- c. Add the text 'Please wait' in the Progress message.

The screenshot shows the 'Edit Menu Item' dialog box. It has a title bar with standard window controls. The 'General' tab is selected. The 'Caption' field contains 'Home'. The 'Icon' field contains 'Glyphicon 'home'' with a 'Select...' button. The 'On click' field is set to 'Call a microflow' with a dropdown arrow. The 'Microflow' field contains 'Dashboard.DashboardMicroflow' with 'Select...' and 'Show' buttons. The 'Microflow settings' field has an 'Edit...' button highlighted with a red box. At the bottom right are 'OK' and 'Cancel' buttons.

Microflow Settings

Microflow: [Select...](#) [Show](#)

Microflow arguments
No arguments are passed to the selected microflow.

Execution

Microflow call type: ☒ Synchronous ☐ Asynchronous

Show progress bar: ☐ None ☐ Non-blocking ☒ Blocking

Progress message:

Confirmation

Ask confirmation: ☐ Yes ☒ No

Question:

Proceed button caption:

Cancel button caption:

[?](#) [OK](#) [Cancel](#)

Test Project (Main line) - Mendix Modeler 7.18.1

File Edit View Project Run Language Help

Run Locally View

Project Explorer

- Project 'Test Project'
 - System
 - MyFirstModule
 - LogoutModule
 - Dashboard
 - Domain Model
 - SOAP
 - DashboardHome
 - DashboardMicroflow**

Navigation

Profiles
Navigation profiles can be used to create a different navigation for different devices and screens.
[Add navigation profile](#)

Responsive Hybrid phone app online

General

Application title: [Edit...](#)

Home pages

Default home page: [Select...](#) [Show](#)

Role-based home pages: [Edit...](#)

Menu

[New item](#) [New subitem](#) [Edit](#) [Delete](#) [Go to target](#) [Expand all](#) [Collapse all](#)

Caption	Action	User Roles
Home	Call microflow 'Dashboard.DashboardMicroflow'	

4. Run and view the response on a browser or Mendix App.

- To view/modify the report GUID from RSA Archer. Navigate to respective microflow, double click the 'Call web service' entity and modify the GUID as appeared within the screenshot below.

Call Web Service

Operation HTTP Headers SOAP Request Header SOAP Request Body SOAP Response

Simple expressions for each request parameter

Build the request by simply filling in values for each of the primitive parameters.

Edit value Convert to custom body

	Name	Type	Argument
<input checked="" type="checkbox"/>	sessionToken (optional)	String	\$ArcherData/Token
<input checked="" type="checkbox"/>	reportIdOrGuid (optional)	String	'3DF2E19E-544F-49B2-BB3B-F4FCFEC27EF9'
<input checked="" type="checkbox"/>	pageNumber	Integer/Long	1

Change the guid.

OK Cancel

Template 2: RSA Archer Create Content template (Ex: Creating an incident with attachment)

- This template helps to create the content in RSA Archer. We have used old content API to post the content to RSA Archer. Similarly, we can use old PUT content API to update the content of a record.

Note: We have utilized old content API here since as of now, new content save API doesn't support few fields like attachment.

Dependency Templates: IncidentDetails, ToSaveAttachment, ToRetrieveAttachment

- Template name: CreateIncidents, IncidentDetails, IncidentsList.
 - Main microflow: ToSaveIncident.
- Import module packages into the project in the order mentioned below:
 - ToSaveAttachment.mpk
 - ToRetrieveAttachment.mpk
 - CreateIncidents.mpk
 - IncidentDetails.mpk
 - IncidentsList.mpk

3. Add a button widget and show the 'CreateIncidents.Incident' page from the CreateIncidents template in any of the custom pages or Home page.

Edit Action Button 'actionButton1'

General

Caption: Edit...

Tooltip:

Icon: Select...

Render mode: ☒ Button ☐ Link

Button style: ▼

Visibility

Visible: Edit...

Events

On click: ▼

Page: Select... Show

Page title: ☐ Override page title

Common

Name:

Class:

Style:

Tab index: ▲▼

? OK Cancel

4. Run and view the response on a browser or Mendix App.

Template 3: RSA Archer Show Content template (Ex: Displaying incident details)

1. This template helps to retrieve the content from the RSA Archer and we have used old content API to get the content to RSA Archer.

Note: We have utilized old content API here since as of now, new content save API doesn't support few fields like attachment.

Dependency Templates: IncidentDetails, ToSaveAttachment, ToRetrieveAttachment

- a. Template name: CreateIncidents, IncidentDetails, IncidentsList.
 - b. Main microflow: ToSaveIncident.
2. Import module packages into the project in the order mentioned below:
 - 1.) ToSaveAttachment.mpk
 - 2.) ToRetrieveAttachment.mpk
 - 3.) CreateIncidents.mpk
 - 4.) IncidentDetails.mpk
 - 5.) IncidentsList.mpk
 3. Add a button widget and show the 'IncidentsList.IncidentsPage' from the IncidentsList template in any of the custom pages or Home page. This page displays the list of all the Incidents from RSA Archer.

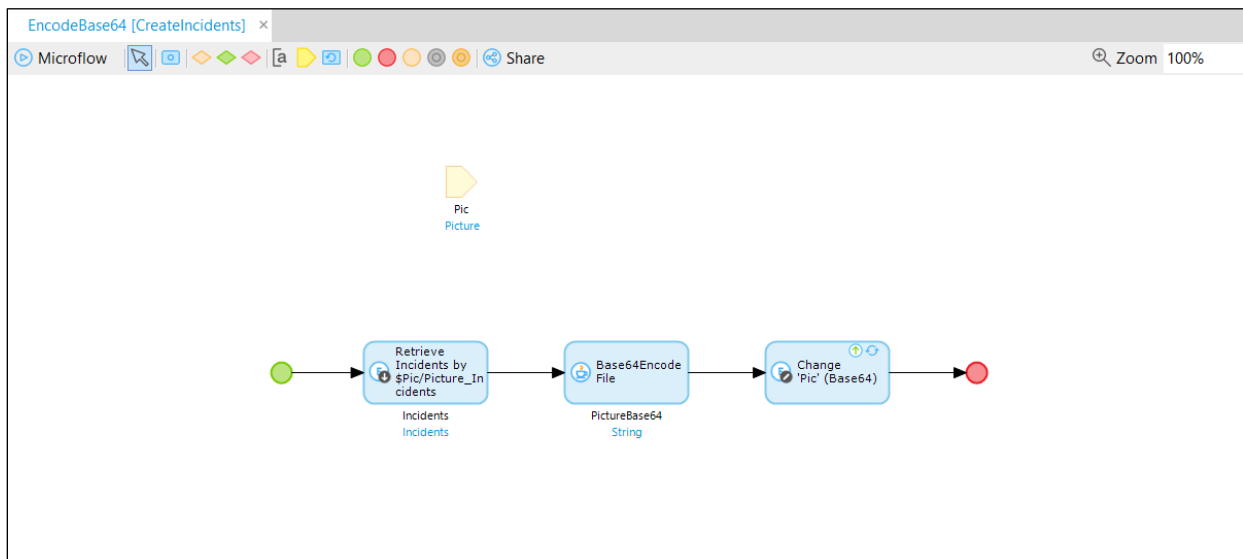
The screenshot shows the 'Edit Action Button' dialog box for 'actionButton2'. The dialog is divided into several sections: General, Visibility, Events, and Common. In the General section, the Caption is 'Show Incidents', the Icon is 'Glyphicon 'th list'', and the Render mode is set to 'Button'. In the Events section, the 'On click' event is configured to 'Show a page', with the Page set to 'IncidentsList.IncidentsPage' and the Page title set to 'My Incidents'. The Common section shows the Name as 'actionButton2'. The dialog has 'OK' and 'Cancel' buttons at the bottom right.

Edit Action Button 'actionButton2'	
General	
Caption	Show Incidents
Tooltip	
Icon	Glyphicon 'th list'
Render mode	<input checked="" type="radio"/> Button <input type="radio"/> Link
Button style	Default
Visibility	
Visible	Default
Events	
On click	Show a page
Page	IncidentsList.IncidentsPage
Page title	<input type="checkbox"/> Override page title My Incidents
Common	
Name	actionButton2
Class	
Style	
Tab index	0

4. Run and view the response on a browser or Mendix App.

Template 4: RSA Archer Save Attachment template

1. This template helps to send the attachment to RSA Archer.
 - a. Template name: ToSaveAttachment
 - b. Main microflow: ToSaveAttachment
 - c. Input: Attachment object (Here object of type Picture)
 - d. Output: File ID
2. Import module package 'ToSaveAttachment.mpk' into the project.
3. RSA Archer expects attachment in "Base64" format:
 - a. First, you need to convert the attachment into Base64 encode the string using built-in java action present in CommunityCommons/Files/Base64EncodeFile and then call attachment to save API with suitable body and headers. Refer 'EncodeBase64' microflow from the CreateIncidents template.



- b. Add a camera widget and image viewer inside a data view widget in any of the custom pages.

Edit Custom Widget 'camera1'

Button | Appearance | Image quality | **Behaviour** | Common

Autosave ☒ Yes ☐ No
Enable autosave to automatically save your image

On save microflow
This microflow is called when the object is saved. use this to commit the object when using autosave

On save nanoflow
This nanoflow is called when the object is saved. use this to commit the object when using autosave

Picture Source ☒ Camera ☐ Gallery
Grab image from either the camera or the phone's image gallery

Block during upload ☐ None ☒ During upload ☐ On from save
Show progress message during upload (block UI) prevent form user interaction. Or 'On from save' upload can be started, only on save of the form show progress will be shown when the upload is not completed

Progress upload text

4. Run and view the response on a Mendix App. Capture the image using camera of the phone. Verify the result in the File Repository path as specified in the RSA Archer control panel.

Template 5: RSA Archer Retrieve Attachment template

1. This template helps to retrieve attachments from RSA Archer.
 - a. Template name: ToRetrieveAttachment
 - b. Main microflow: ToRetrieveAttachment
 - c. Input: FileID
 - d. Output: Attachment object (Here object of type Picture)
2. Import module package 'ToRetrieveAttachment.mpk' into the project.
3. Create a microflow and Call the API to get the attachment.
 - a. API expects file ID in the URI. Note: File ID is the file name of the image present in the File Repository path as specified in the RSA Archer control panel.
 - b. The API result contains the Base64 string. Use CommunityCommons/Files/Base64DeocdeToFile java action to decode the string and use the result to display using proper Mendix widget.
4. Run and view the response on a browser or Mendix App.

Template 6: RSA Archer Advanced workflow template

1. This template helps to perform workflow actions like Approve, Reject and Deny etc.
 - a. Template name: WorkFlow_Approval
 - b. **Dependency:** GetUsers module and WorkFlow_Approval_Dependency template.
 - c. To construct the page:
 - i. Main microflow: ShowApprove
 - ii. Input: content id
 - iii. Output: All details of a record with action buttons.
 - d. To perform the workflow actions:
 - i. Main microflow: Confirm
 - ii. Input: An object which contains action button details.
 - iii. Output: Performs the respective action taken on that record.

Note: After importing this template if you get any error then update security of domain model.

2. Import module packages into the project in the order mentioned below:
 - a. GetUsers.mpk
 - b. WorkFlow_Approval.mpk
 - c. WorkFlow_Approval_Dependency.mpk

The screenshot shows the 'Edit Menu Item' dialog box with the following configuration:

- General** tab selected.
- Caption:** My Exception Requests
- Icon:** Glyphicon 'list alt' (with a 'Select...' button)
- On click:** Show a page (dropdown menu)
- Page:** WorkFlow_Approval.ExceptionsListPage (with 'Select...' and 'Show' buttons)
- Page title:** ☒ Override page title, My Exception Requests
- Buttons:** OK (highlighted), Cancel

3. Go to Project -> Navigation and add a menu item to show "WorkFlow_Approval.ExceptionsListPage".
4. Run and view the response on a browser or Mendix App. Workflow Approval template is configured to perform Approve/Deny/Reject action of a record.

Note: For all modules and templates, **LoginAddOn** module is prerequisite.

TROUBLE SHOOTING

- Do not include default.aspx in the RSA Archer URL for the login page.
- Note that the RSA Archer instance name is case sensitive.
- To use Save Attachment or Retrieve attachment templates individually. Templates related to incidents have to be removed from the project and replace the entities data with the custom domain models.
- To use GetUsers module individually. The association to Workflow templates has to be deleted and the WorkFlow_Approval, WorkFlow_Approval_Dependency templates has to be removed from the project.
- Running the app in iOS: If the retrieve image is not completely visible in the Incident details page and the user is unable to scroll down the page. Go to the image viewer of the Incident details page and change the on click type to 'Enlarge'.
- It is recommended not to use CSS "position: fixed" to avoid unexpected behavior in iOS/Safari.
- If microflow containing REST Call action time out after 5000ms, please set the microflow call type as "Asynchronous" in Microflow Settings.

Known Errors / Warning

Message	Description	Comments
404 - file not found (Ex: 404 - file not found for file: com.mendix.charts.json)	This message is displayed in the console of the Mendix Modeler after the execution of Dashboard Template.	This is a known warning message and doesn't affect the functionality of the Dashboard Template.

Certification Environment for RSA Archer GRC

Date Tested: November 6th, 2018

Certification Environment		
Product Name	Version Information	Operating System
RSA Archer Platform	6.5	Virtual Appliance
Mendix Platform	7.18.1	NA

REVISION NOTES

Document Version	Published Date	Notes
1.0	20 Nov, 2018	
1.1	08 Feb, 2019	Updates in Implementation steps and screenshots of "Template 1: RSA Archer Dashboard template"