



Data Synchronization Overview

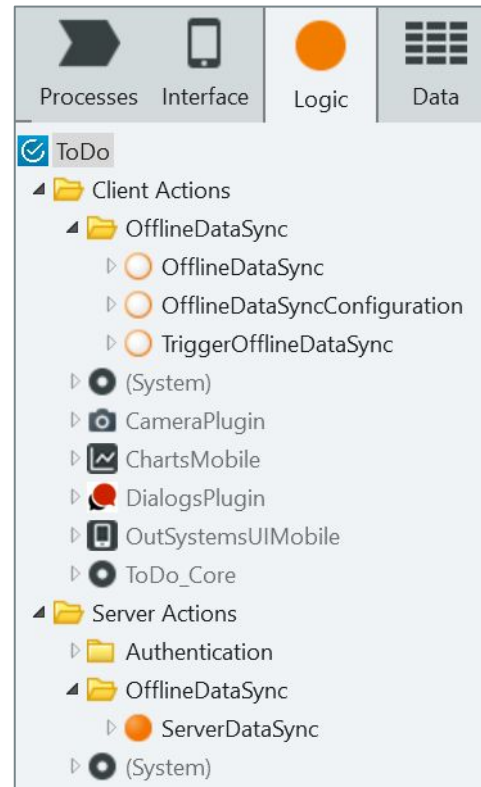


Topics

- Synchronization Actions
- Using Synchronization Actions
 - OfflineDataSyncConfiguration Action
 - Trigger the Synchronization
 - Client-side Sync Logic
 - Server-side Sync Logic
 - Offline Data Synchronization Patterns
- Synchronization Components
 - OfflineDataSyncEvents Block

Synchronization Actions

- Client Actions
 - Sync: OfflineDataSync
 - Configure: OfflineDataSyncConfiguration
 - Trigger/Start: TriggerOfflineDataSync
- Server Action
 - Sync: ServerDataSync

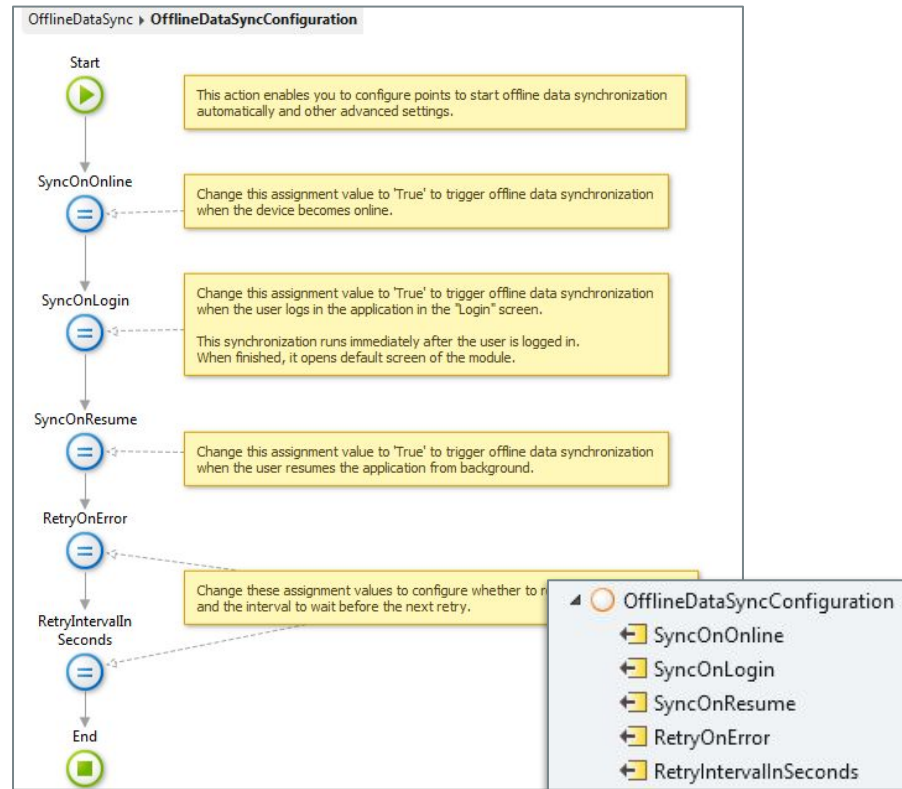


Using Synchronization Actions



OfflineDataSyncConfiguration Action

- Configures automatic start and retry of the synchronization process
 - When the app gets online
 - When the user logs in
 - When the user resumes the app
- Configuration defaults
 - SyncOnline = False
 - SyncOnLogin = False
 - SyncOnResume = False
 - RetryOnError = False
 - RetryIntervallInSeconds = 30

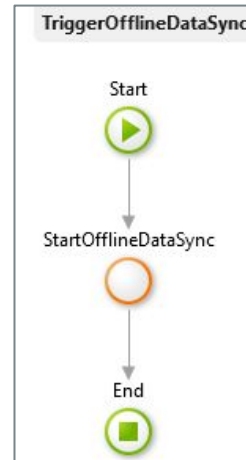
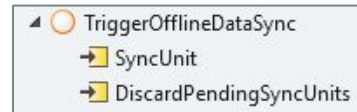


Trigger the Synchronization



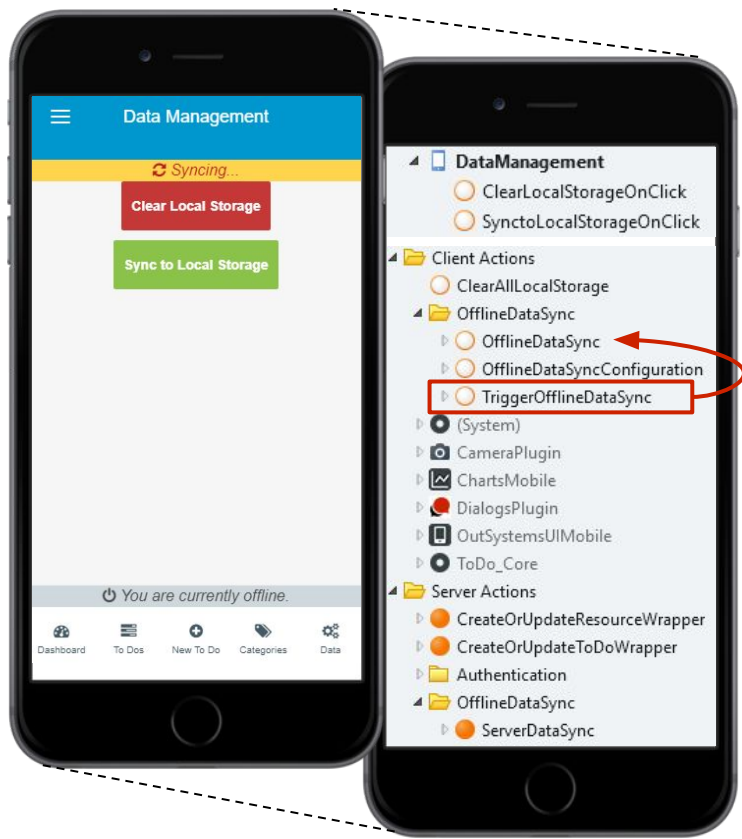
TriggerOfflineDataSync Action

- Client Action that triggers a **background synchronization**
 - Input Parameters
 - SyncUnit
 - DiscardPendingSyncUnits
 - Calls OfflineDataSync
 - Needs SyncUnit as input
- Use this Action to start the sync
 - Does not block the execution flow



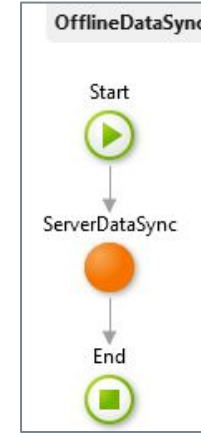
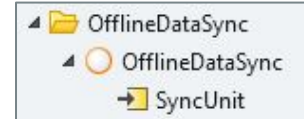
StartOfflineDataSync Run Client Action	
Name	StartOfflineDataSync
Action	BaseActions\StartOfflineDataSync
SyncUnit	SyncUnit
DiscardPendingSyncUnits	DiscardPendingSyncUnits

Client-side Logic



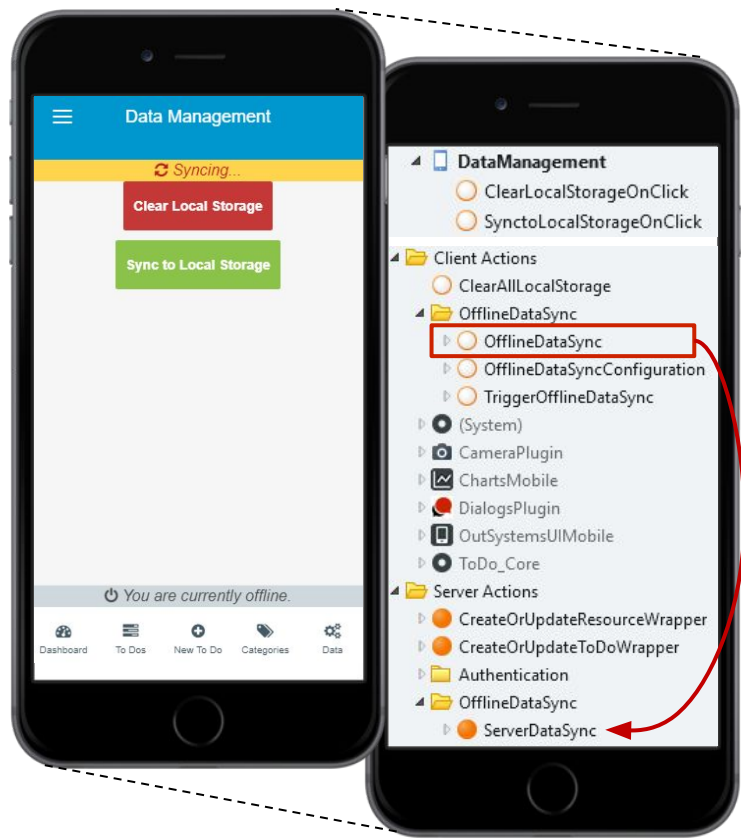
OfflineDataSync Action

- Can be used for creating logic executed on the client
- Client Action that calls the server to synchronize data
 - Input parameter: SyncUnit
 - Calls ServerDataSync
 - Needs SyncUnit as Input
- SyncUnit
 - Defines set of data to sync



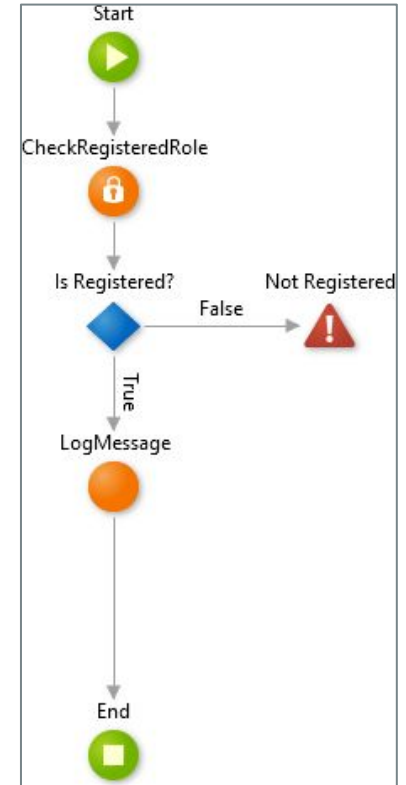
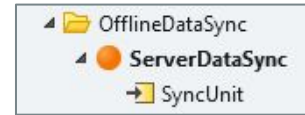
ServerDataSync Run Server Action	
Name	ServerDataSync
Server Request Timeout	(Module Default Timeout)
Action	OfflineDataSync\ServerDataSync
SyncUnit	SyncUnit

Server-side Logic

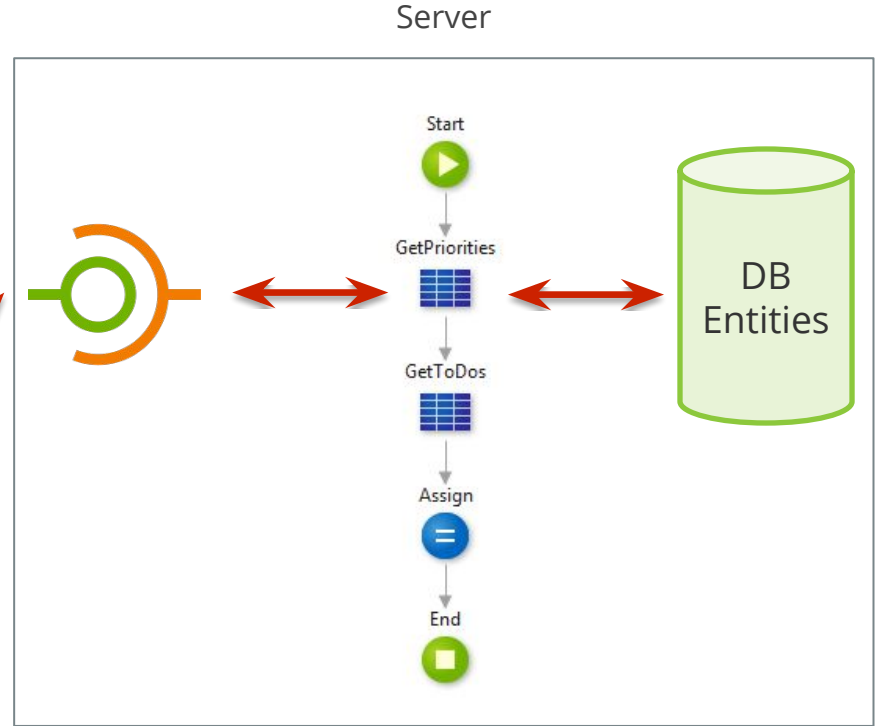
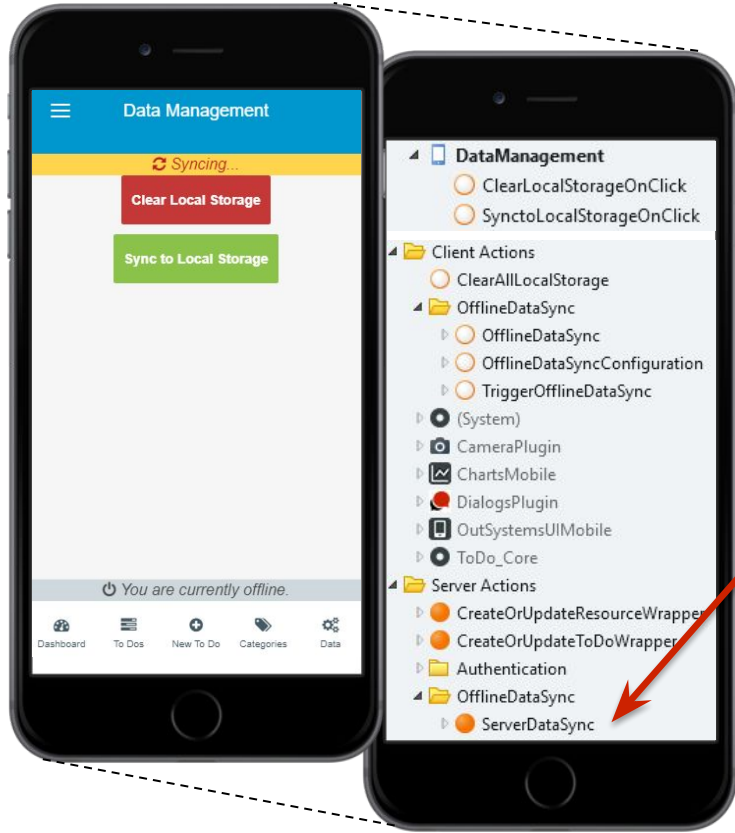


ServerDataSync Action

- Can be used for creating logic executed on the server
- Server Action called by the OfflineDataSync Action
 - Input Parameter: SyncUnit
 - Check that user is Registered
 - Logs sync attempt information to the General Log tab in Service Center
- Implement synchronization logic
 - See examples in documentation



Getting Data from Server



Offline Data Synchronization Patterns

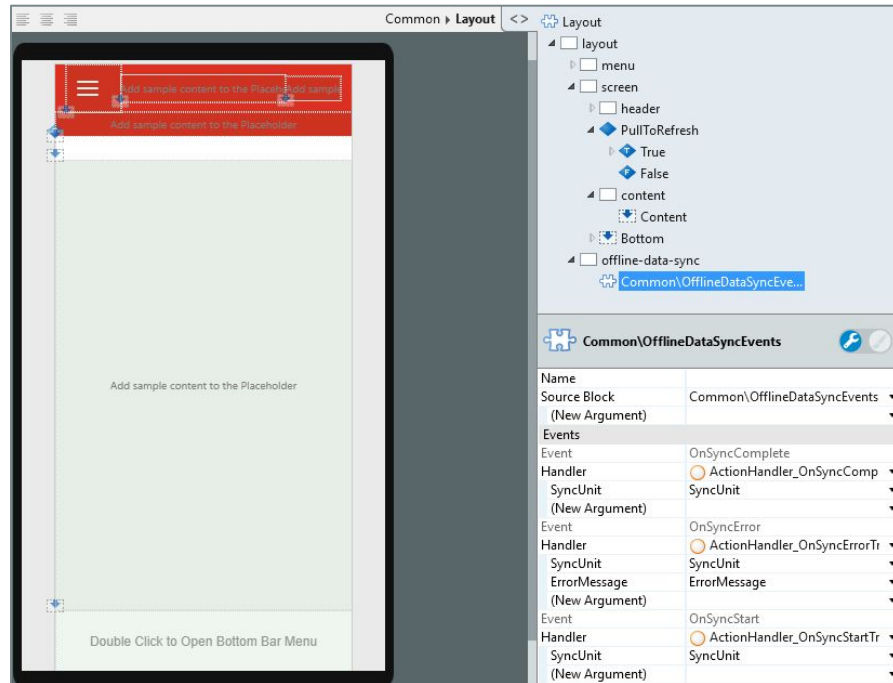
- Descriptions and details of the patterns available in the documentation
 - https://success.outsystems.com/Documentation/11/Developing_an_Application/Use_Data/Offline/Offline_Data_Sync_Patterns
 - Provides examples of a few common data synchronization patterns
 - Sample modules are available for each example
- Synchronization patterns
 - Read-Only Data
 - Read-Only Data - Optimized
 - Read-Write Data - Last Write Wins
 - Read-Write Data - With Conflict Detection
 - Read-Write Data - One-to-Many

Synchronization Components



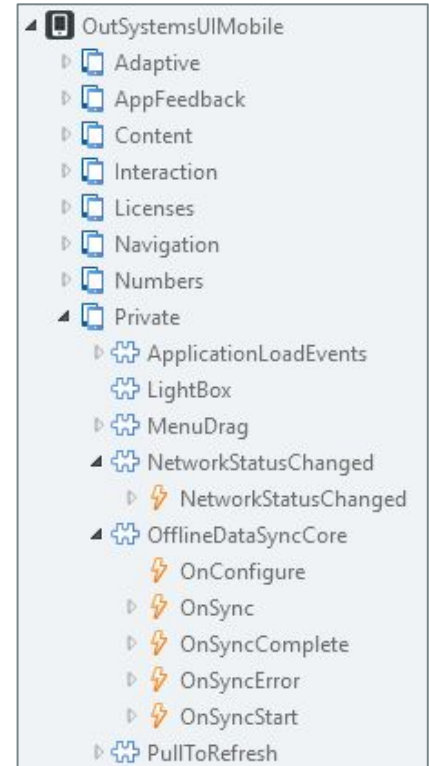
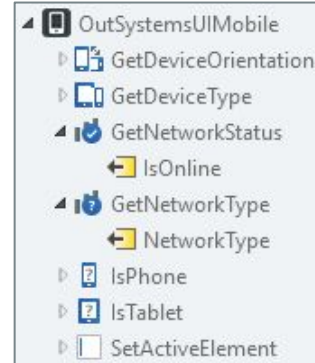
OfflineDataSync Events Block

- Layout Block uses the OfflineDataSyncEvents Block
 - Defined in the Common Flow
 - Has no UI by default
- Handles Sync Events
 - OnSyncComplete
 - OnSyncError
 - OnSyncStart
- ActionHandler Actions trigger the same Events to be handled by Screens individually



OutSystems UI Mobile

- Framework containing Blocks and Logic to help synchronization and offline interaction
- Blocks
 - NetworkStatusChanged
 - Event triggered when app go offline or online
 - OfflineDataSyncCore
 - Used in the OfflineDataSyncEvents
- Logic
 - GetNetworkStatus
 - Check if device is online



Summary

- Synchronization Actions
- Using Synchronization Actions
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 - Trigger the Synchronization
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 - Server-side Sync Logic
 - Offline Data Synchronization Patterns
- Synchronization Components
 - OfflineDataSyncEvents Block



Data Synchronization Overview

Thank You!