

InTouch Machine Edition (v2.7.x)

Introduction

In this wiki pages we will explain how to use our cmbSDK trough cordova plugin as custom widget in ITME project

Getting Started

Open ITME Studio and create new project

Successfully Deployed

Version 1.0.0 has been created.

Open the active version of the application

Open the application's page in the SAP Cloud Platform cockpit

You can now register the application to SAP Fiori launchpad.

Register to SAP Fiori launchpad Close

Set your project resolution



Project Tags

Go in Global section of Project Explorer, open Project Tags -> Datasheet View and insert project tags that we will use. We will explain every tag later in this section



	Global Preferences	Extensions							
<i>\$</i>	Code Check	Enable the SAP Web IDE extensions you want, save, and refresh the browser.							
പ	Code Editor								
<i>\$</i> 3	Core Data Services								
ស្ល	Default Editors								
ŵ	Git Committee Keyboard Shortcuts	2 results							
	Workspace Preferences								
	Cloud Foundry	Workflow Editor OFF Hybrid App Toolkit							
	Extensions								
		automating process steps. Cordova and SAP Mobile Platform SDK In SAP Web							
		V1510 More Information V1323 More Information							
цę	Caniforn								
.	Services								
[]	Solutions	Mobile							
		😰 Mohile Senires, consumers 🛛 🛱 Mohile Senires, preview, 🙀 Mohile Senires, users							
[Virtual Machines								
		Enabled Not enabled Enabled							
٢	SAP HANA / SAP ASE	, Build and run mobile apps for B2C 🛛 👩 Run integration and regression tests 🔄 Build and run mobile apps for B2E							
~		use cases. and explore new mobile features. and B2B use cases.							
ष	Connectivity								
À	Enhanced Disaster Decovery								
ľ	Linnanceu Disaster Recovery								

All tags are local and change to the tag value affects only the station on which the change was made.

Barcode Widget

How this widget is working ? There is trigger properties that call api methods from cordova plugin. There is output properties where we return results from api methods and there is events like callback functions that are called when api method is executed. On this link you can read about every property and here about events.

Project screens

Go back in Graphics section, right click on Screens category and click Insert



Service: SAP Fiori Mobile - Overview	N
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Service Description The mobile service for SAP Fiori is an end-to-end solution designed to a mobile users. Use the build/packaging service to transform web content manage the app lifecycle, runtime services to support enterprise app services to provide insights into adoption, usage, and app performance Take Action Configure Fiori Mobile Configure Mobile Packager Go to Admin Console Go to Mobile Place

Set screen attributes and press OK.

Enabled



	Build Summary							
Application Information								
Application Name:	Application Name: cmbSDK Sample App							
Build Options								
iOS	Signing Profile:	iOSSapAppDev 🗸	Minimum OS Version:	11.0 🗸				
Android	Signing Profile:	AndroidSapAppDev 🗸	Minimum OS Version:	5.0 🗸				
Enable Android and	/or iOS project(s) dov	vnload after build						
Enable verbose logg	jing							
Build debug-enabled	1 binaries							
Note: If you would like to debug application will be automatically you to debug.	g your Android applic y signed with an inter	ation with Chrome and/or your iC nal debug signing profile. For iO	eS application with Safari, enable thi S, select a developer signing profile	s option. For Android, your to sign your application to enable				
For iOS, an iOS signing profile	must be selected to	enable the build option.						
Cached Content								
Clear cached conter	nt prior to initiating bu	lild						
Note: SAP caches the SAPUI5 since the last time an application	runtime referenced b on was built reference	by your application in order to rec ing this SAP Fiori front-end serve	luce build time. If you believe this co r, enable this option.	ontent may have been updated				
Email Notification								
Send me an email n	otification when my a	pplications are built						
	Build Cancel							

Design your header screen and name it as header.

☆ Home	Manage Plugins							
<u>ıll</u> Analytics	CUSTOM PLUGINS PUBLIC PLUGINS							
Applications V								
Manage Apps	All Custom (0) Recommended (0)							
Approve Apps								
Manage Plugins								
Configure App Discovery	Plugin ID Platform Version Description							
Manage Signing Profiles	Add Custom Plugin							
පී Users 📏								
≜ª Account >>	Select any one							
	Source File: cmbSDK_Cordova_v2.1.3.12014.zip Browse							
	Source URL:							
	Please refer to the "Managing Custom Plugins" section in our <u>help guide</u> to know more about the plugin specification that is supported.							
	OK Cancel							

Here we have header text, label where we will show reader device battery level and smart message object that show current reader device connection status.

In header screen we will add our barcodeReader custom widget.

Click on Custom Widget icon

බ	Home		Manage Ap	ps
<u>111</u>	Analytics	>		
	Applications	×	- T New Application	0 Outogones
	Manage Apps			
	Approve Apps			
	Manage Plugins			
	Configure App Discovery			
	Manage Signing Profiles			
රි	Users	>		
ٌ8	Account	>		

Click import and find your barcodeReader.cwp file. barcodeReader should be shown as available widget. Select it and click OK.



Apps home / Add new application

Select Your Fiori Server

Fiori Server Name	Virtual Host with URL	Status
Fiori Cloud Edition		Available
GM4		Available

Previous	Next	Cancel
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barcodeReader custom widget is added in header screen

Open barcodeReader properties and go in widget members



Apps home / Add new application

Define your Fiori Application

Select from available Fiori Applications

vailable Applications	Selected Applications	
🔬 cmbSDK Fiori App: MyFirstFioriApp.MyFirstFioriApp		

O Upload advanced configuration file

File Name	Browse
File Validation	

Previous	Next	Cancel
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Map properties from custom widget with project tags and set action Set+Get and set script that you want to execute in callback events.

Then open header screen script and call setPreviewContainerPositionAndSizeEventTrigger and loadScanner methods when header screen is opened. Also open another screen (main) while this one is opening.

Insight Details	Groups Multime	edia » Plugins	App Settings	Platforms »	Categories X	Owner info		
Selected (1) Recommended (0) Public (2130) Custom (1)							
					5	Select Platform	✓ Search Plugins	Q ÎJ
Plugin ID	Platform Versio	on Description					ast Updated On	Actions
cmb-sdk-cordova-plugin	ć 🖗 1.2.14	4 CMB Scanner	Cordova Plugin			1	8th June 2019	\$
							F S	ave <u> </u> Delete

Now create another screen and name it main.



Build Your Fiori Application

152px X 152px							
*Applicat	plication Name						
cmbSDI	K Sample App						
Uplo							
Connection Security							
Users will be authentic	ated with SAML each tim	e the application is used.					
Build Options							
✓ iOS	Signing Profile:	IOSSapAppDev 🗸	Minimum OS Version:	11.0 🗸			
✓ Android	Signing Profile:	AndroidSapAppDev 🗸	Minimum OS Version:	5.0 🗸			
Enable Android	d and/or iOS project(s) dov	vnload after build					
Enable verbose	e logging						
Build debug-er	abled binaries						
Note: If you would like to application will be auton to enable you to debug.	debug your Android appl natically signed with an in	ication with Chrome and/or yo ternal debug signing profile. F	ur iOS application with Safari, enal or iOS, select a developer signing (ble this option. For Android, you profile to sign your application			
For iOS, an iOS signing	profile must be selected to	enable the build option.					
Cached Content							

Clear cached content prior to initiating build

Note: SAP caches the SAPUI5 runtime referenced by your application in order to reduce build time. If you believe this content may have been updated since the last time an application was built referencing this SAP Fiori front-end server, enable this option.

Multimedia	
Splash Screen - Portrait	Splash Screen - Landscape
1536px X 2048px	
	2048px X 1536px
	~ X
~ *	~
**	***
*0	*o
Upload	Upload
Are you ready to build the ar	polication?
a you ready to build the up	producin:
() Yes	
No. Lwould like to gut	tomizo my application
 No, I would like to cus 	tomize my application

In this screen we have rectangle where we display scanned results, button to start/stop scanning and button to clear displayed results.



Apps home	cmbSDK Sample App
-----------	-------------------



Selected (0) Recommended (0) Public (2130) Custom (1)

				Select Platform	V	Search Plugins		Q	\uparrow
Plugin ID	Platform	Version	Description		Last (Jpdated ?	Action	ns	
cmb-sdk-cordova-plugin	é 🕈	1.2.14	CMB Scanner Cordova Plugin		18th ,	June 20	\$		
						view Details			
						G s	iave	Ŵ	Delete

Later right click on Screen Group category and create StartUp screen group.

Insight Details Groups Multimedia Plugins App Settinga Platforms Categories Owner info
Security Feature Wanagement Notifications Logging
Connection Security Users will be authenticated with SAIIL, each time the application is used.
Application Passcode Policy
Usake Passcode Screen
Enforce Furi application passocode:
Minimum passede leight in charaders Passede explainter minutes Basimum metries Basimum metries Basimum metries Basimum metries Basimum metries Allow default passede Passede explainter function of the following character types: Basimum metric (D-9) Basimum to (D-9)
Application Security
Phicary Screen: DS and Android devices have app switchers that display screensholds of your apps. This is a possible privacy risk for apps that display sensitive information. To enhance the security of on-device data, SAP Fior Client by default enables the Phicary Screen feature, which hides application content in the app switcher. On Android devices, the Phicary Screen plugin also prevents users from taking screensholds and sharing the screen. This feature is enabled by default.
Classie Privacy Soreen
Save III Delea

Open Project properties and set this group as Startup screen.



Project Settings		×
Information	Configure viewer settings, such a screen scale	as run-time menus, virtual keyboard, and auto
Options		
Viewer	Titlebar: Project Name	
Communication	Minimize Box	Active area indication
Preferences	Maximize Box	Show Object Edge
	Cl <u>o</u> se Box	
	Start Maximized	Virtual <u>K</u> eyboard:
	Resize Border	Default: Keypad V
	Status Line	Show Hint:
	Start <u>u</u> p screen: StartUp.SG ~	Enable MIN/MAX fields
	☑ Show ???? when quality is not GOOD	Enable multi-line text input
	Hide Taskbar	Built-in Dialogs 100% 🗸
	Disable Palm Rejection	Mouse <u>C</u> ursor
	Enable ToolTips	Commands
	Save pictures in separate files	Enable focus on buttons, commands and texts objects
	Auto Screen Scaling	Use popup input for text objects
	Enable Enhanced Graphics	Use .scr extension for screen files
		Multi Touch Settings
	J	OK Cancel

Because we want to deploy this application as HTML web interface and interact from mobile devices we need to open Mobile Access menu at least ones and save changes on close. Also, for better communication with custom widget, set Process Values at minimum value which is 100.



Project Help	
n Options Communication Viewer Preferences E-Mail/FTP	Service Configure Log Access On level Web Mobile Access Tabular
Settings	Security System Web
4 X Mobile Access Configurati	on X Mobile Access
👢 Main	Area Settings Global Settings access client connections
	Alarm Control
	Ack Required Activation Time
	Ack Time >> Tag Name Move Up
	Comment Message Move Down
	Colors
	Active Color: 📕 🔹 Ack Color: 📕 🔹 Norm Color: 📕 🔹
	Trend Control
	Default duration (s): 60
	Update Rates (ms)
	Alarm: 1000 Trend: 1000 Process Values: 100
	Browser Logs (Press F12 on the browser and select console to see these logs)
	✓ Error Warning Information Trace Verbosity: 1 (Less Messages) ✓
	☑ Runtime Comm ☑ Screen ☑ Web Services
	Web
	Session Expiration (s): 300
	Zoom Mode: 🛛 Auto Screen Scaling 🔍 🗸 Always Use Data Input Dialog

When we finish with our screens and configurations Verify project.

Home View	Insert Project	Help		
	Tasks Debug	Connect	Download Run Tasks Database LogWin	Verify
Clipboard	Local Management 🕞		Remote Management	

and Save all screens as HTML for web access



Apps home / cmbSl	DK Sample /	Арр																
Insight 2	») »	Groups	>>	Multimedia	>>	Region of the second se	>>	App Settings	>>	Platforms	>>	Categories	>>	Owner info		🖋 Edit	
State		D	ebug Enabled		Operating	System		Form Fa	actor		App Version		Built	On		Certificat	√∕ Sign App	Actions
New 🛆 <u>.</u> Signed	<u>↓</u>				ANDROID			Tablet/P	Phone		1.0		Jun	18, 2019		-	Download Bin	Download Binary
New 🛆 ַ Signed	<u>↓</u>				IOS			Tablet/F	Phone		1.0		Jun	18, 2019		5/27/202	Set to product	ion 🗱
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/ith all the	ese st	eps v	ve finisl	hed o	our ITN	ИЕ р	orojeo	ct.										

Server configuration

Navigate to your ITME web application physical path. If you use local IIS server usually this path is C:\inetpub\wwwroot\ITME81 and copy barcodeReaderServerFiles that you've download.



Global Preferences	Hybrid Application Toolkit		
Code Check	Hybrid App Toolkit Settings		
Code Editor			
Core Data Services			\
Default Editors	Cloud Ruild Soprice	○ SAD Fiari Mabila (depresented)	Mahila Sanucas
Git Committer	Cloud Duitu Service		V MODILE Services
Keyboard Shortcuts	Enable Lecal Add on Ea	atura	
Workspace Preferences		alures	
Cloud Foundry	The Local Add-on features ha	ve reached end-of-maintenance. The feature will co	ntinue to be available for use as
Extensions	to the local add-on will not be	e accepted. Ind Ruild Constants and the south of the survey by brid on	
Hybrid Application Toolkit	We recommend using the Clo	ud Build Service to continue building your hybrid ap	ops with the latest versions of the
	Save		

These cordova files that will be hosted on server will help us to use native features trough custom widgets. Later open index.html and reference these scripts:



Calaat	Cardava	Dluging
Select	Cordova	Pillpins
001001	0010010	1 100,000,000

				Select Platform 🗸	cmbsdk-cordov	/a	8 Q
Plugin ID	Platform	Version	Description			Last Updated On	Actions
cmbsdk-cordova	ć 🕈	1.2.14	CMB Scanner Cordova Plugin			6 Jun 2019	*



When we navigate to server URL we add platform that we are using as attribute in query string. With barcodeReader.js we check this attribute to know which cordova files to load (iOS or android). Now open IIS manager right click on your ITME81 application and click Add Virtual Directory:



Set "CustomWidget" as Alias and as physical pat set path to your ITME project (C:\Users\Marko\Documents\InTouch Machine Edition v8.1 Projects\cmbSdkSample in our case)

Be sure that you make connection with user that have authorization to selected path.



Cognex Wrapper Application

Run Cognex Wrapper Application on your mobile device. In Server URL input box insert your server URL and in query string send screen and guestuser attributes. Click Navigate button and you will be redirected to your server URL (http://192.168.1.103/ITME81? screen=header&guestuser=1 in our case). When you click Navigate button application automatically add platform in query string as attribute.

Note that you must to run your ITME project before you navigate to server URL from Cognex Wrapper App.

			Select Cordova Plugins			
					łl (20)	elected (9) Public (1) Kapse
⊗ Q 1↓	'a (Select Platform V Cmbsdk-cordova				
Actions	Last Updated On		Description	Version	Platform	ugin ID
tails	6 Jun 2019 View Detai		CMB Scanner Cordova Plugin	1.2.14	é#	nbsdk-cordova

Save	Close



₩ ₩	anah Calla Canan	🗢 🗟 📶 100% 🖉 12:31	
cmbSdk Sample App			
Battery level:	100 %	CONNECTED	
	Scan History:		
	Start Scan	Clear	
	1 0		
	∇		





Barcode Widget Properties

loadScannerEventTrigger

<pre>\$loadScannerEventTrigger = "loadScannerEventTrigger"</pre>	canner(deviceType,sdk_key)''
--	------------------------------

With this property we call loadScanner(deviceType,sdk_key) method which is the first thing we need to do to in order to use reader device

Has two input parameters. First one should be 0 if we want to use MX Device to perform scanning or 1 if we will use Mobile Device for scanning. Second input parameter is sdk_key which is optional. We need to set our sdk license key only if we use Mobile Device for scanning barcodes. Otherwise we will have asterisks in barcode reader result.

Result from this event is returned in loadScannerOutputData property and loadScanner event is called as callback function

Example:

```
'For MX Device
$loadScannerEventTrigger = "loadScanner(0)"
'For Mobile Device
$loadScannerEventTrigger = "loadScanner(1, SDK_KEY)"
```

connectEventTrigger



\$connectEventTrigger = "connect()"

With this property we call connect() method to connect with our reader device and should be called after we load reader device.

Result from this event is returned in connectOutputData property and connect event is called as callback function.

Example:

\$connectEventTrigger = "connect()"

disconnectEventTrigger

\$disconnectEventTrigger = "disconnect()"

With this property we call disconnect() method to release connection from reader device

Result from this event is returned in disconnectOutputData property and disconnect event is called as callback function.

Example:

\$disconnectEventTrigger = "disconnect()"

setPreviewContainerPositionAndSizeEventTrigger

\$setPreviewContainerPositionAndSizeEventTrigger = setPreviewContainerPositionAndSize(startPointX, startPointY, width, height)

With this property we call setPreviewContainerPositionAndSize(startPointX, startPointY, width, height) method which has 4 input parameters. startPointX, startPointX, width and height and they are measured in %.

This should be called before loadScanner method and we use it to place Mobile Device preview container.

Example:

'Preview Container positioned on 0,0 (left,top) 100% right and 30% bottom. \$setPreviewContainerPositionAndSizeEventTrigger = "setPreviewContainerPositionAndSize(0,0,100,30)"

toggleScannerEventTrigger

\$toggleScannerEventTrigger = "toggleScanner()"

With this property we call toggleScanner() method to start/stop scanning process.

Example:



\$toggleScannerEventTrigger = "toggleScanner()"

setSymbologyEnabledEventTrigger

\$setSymbologyEnabledEventTrigger = setSymbologyEnabled(p1, p2, p3..)

To enable/disable symbologies we use this property which trigger setSymbologyEnabled(p1, p2, p3..) method. As input parameters we set symbology and status. We can enable/disable one or more symbologies in one call.

List of symbols: UNKNOWN, DATAMATRIX, QR, C128, UPC-EAN, C11, C39, C93, I2O5, CODABAR, EAN-UCC, PHARMACODE, MAXICODE, PDF417, MICROPDF417, DATABAR, POSTNET, PLANET, 4STATE-JAP, 4STATE-AUS, 4STATE-UPU, 4STATE-IMB, VERICODE, RPC, MSI, AZTECCODE, DOTCODE, C25, C39-CONVERT-TO-C32, OCR, 4STATE-RMC.

Result from this event is returned in setSymbologyEnabledOutputData property and setSymbologyEnabled event is called as callback function.

Example:

\$setSymbologyEnabledEventTrigger = "setSymbologyEnabled(DataMatrix ON, C128 OFF)"

setLightsOnEventTrigger

\$setLightsOnEventTrigger = "setLightsOn(p1)"

We can set light to be enabled/disabled by default when we start scanning with this property by triggering setLightsOn(p1) method. As input parameter we set ON if we want to enable and OFF if we want to disable light by default.

Result from this event is returned in setLightsOnOutputData property and setLightsOn event is called as callback function.

Example:

\$setLightsOnEventTrigger = "setLightsOn(ON)"

isLightsOnEventTrigger

\$isLightsOnEventTrigger = "isLightsOn()"

To check if light is enabled by default we trigger isLightsOn() method

Result from this event is returned in isLightsOnOutputData property and isLightsOn event is called as callback function.

Example:

\$isLightsOnEventTrigger = "isLightsOn()"

sendCommandEventTrigger

\$sendCommandEventTrigger = "sendCommand (p1, p2, p3...)"

With this property we call sendCommand(p1, p2, p3...) method that executes DMC commands which are set as input parameters. We can set one or more dmc commands as input parameters.

Result from this event is returned in sendCommandOutputData property and sendCommand event is called as callback function

Example:

\$sendCommandEventTrigger = "sendCommand (GET BATTERY.CHARGE)"

$connection {\tt StateDidChangeOfReaderCallbackOutputData}$

Integer property that represent current reader connection state. There is four state:

- 0 CONNECTION_STATE_DISCONNECTED
- 1 CONNECTION_STATE_CONNECTING
- 2 CONNECTION_STATE_CONNECTED
- 3 CONNECTION_STATE_DISCONNECTING

resultCallbackOutputData

String property that contain last scanned result

availabilityCallbackOutputData

Boolean property that is true if our reader device is available or false if reader device is unavailable.

activeStartScanningCallbackOutputData

Boolean property which will be true when scanning is active or false when scanning is stopped.

loadScannerOutputData

When loadScanner method is executed it return success message or error message if reader device can't be loaded.

connectOutputData

When connect method is executed it return true if connection is successful or error message if connection can't be completed

disconnectOutputData



When disconnect method is executed it return success message or error message if there is problem while we execute this method

isSymbologyEnabledOutputData

In this property we return result from isSymbologyEnabled method. Result will be ON if certain symbology is enabled, OFF if is disabled or error message if there is some error thrown while we execute this method. Since isSymbologyEnabled method can have more than one parameter we will return symbology status separated with ",". For example if we call \$isSymbologyEnabledEventTrigger = "isSymbologyEnabled(DataMatrix, C128)" result will be "ON,ON" if both symbologies are enabled.

Note that by default if we use Mobile Device there is no symbologies enabled.

isLightsOnOutputData

Result from isLightsOn method that can be ON if light is enabled, OFF if is disabled or error message if something wrong happened while this command is executed

sendCommandOutputData

String property that represent result from sendCommand() method. If there is more than one DMC commands as input parameters result from every command will be separated with ",".

For example, if we call \$sendCommandEventTrigger = "sendCommand (GET BATTERY.CHARGE, GET LIGHT.INTERNAL-ENABLE)" result will be "50, OFF"

setLightsOnOutputData

Result from setLightsOn method that can be ON if light is enabled, OFF if is disabled or error message if something wrong happened while this command is executed

setSymbologyEnabledOutputData

In this property we return result from setSymbologyEnabled method. Result will be ON if certain symbology is enabled, OFF if is disabled or error message if there is some error thrown while we execute this method. Since setSymbologyEnabled method can have more than one parameter we will return symbology status separated with ",". For example if we call \$setSymbologyEnabledEventTrigger = "setSymbologyEnabled(DataMatrix, C128)" result will be "ON,ON" if both symbologies are enabled.

Barcode Widget Events

sendCommand

This callback event will be executed when sendCommand method is triggered and finished: \$sendCommandEventTrigger = "sendCommand(p1, p2, p3 ...)"

isLightsOn

This callback event will be executed when isLightsOn method is triggered and finished: \$isLightsOntEventTrigger = "isLightsOn()"

setLightsOn

This callback event will be executed when setLightsOn method is triggered and finished: \$setLightsOnEventTrigger = "setLightsOn(p1)"

isSymbologyEnabled

This callback event will be executed when isSymbologyEnabled method is triggered and finished: \$isSymbologyEnabledEventTrigger = "isSymbologyEnabled(p1,p2,p3,....)"

setSymbologyEnabled

This callback event will be executed when setSymbologyEnabled method is triggered and finished: setSymbologyEnabledTrigger = "setSymbologyEnabled(p1,p2,p3,....)"

disconnect

This callback event will be executed when disconnect method is triggered and finished: \$disconnectEventTrigger = "disconnect()"

connect

This callback event will be executed when connect method is triggered and finished: \$connectEventTrigger = "connect()"

loadScanner

This callback event will be executed when loadScanner method is triggered and finished: \$loadScannerEventTrigger = "loadScanner(0)"

setActiveStartScanningCallback

'This callback event will be executed when toggleScanner method is triggered and finished: \$toggleScannerEventTrigger = "toggleScanner()"

setAvailabilityCallback

This callback event will be executed when availability of MX Device is changed.

setResultCallback

When barcode is scanned this callback event will be executed

setConnectionStateDidChangeOfReaderCallback

This callback event will be executed when connection state of reader device is changed