

SAP BTP SFSF Extension Tutorial_221119

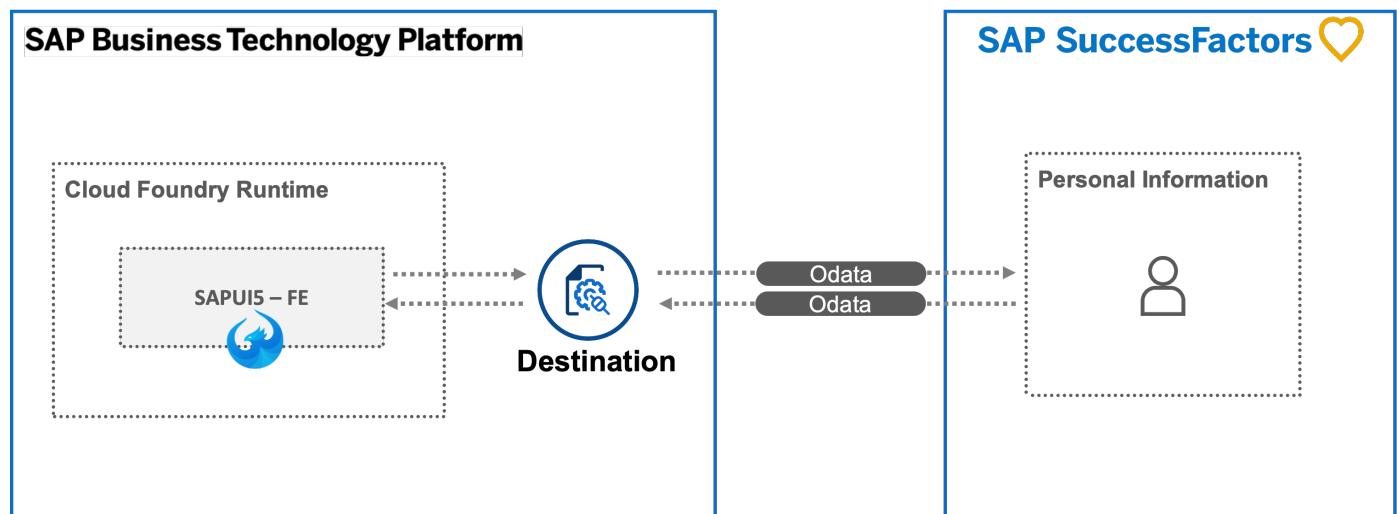
이 튜토리얼은 SAP BTP에서 SAP SuccessFactors Side-by-Side Extension 개발 방법을 설명합니다.

해당 프로젝트는 BTP Tutorial의 mta-hkmc를 기반으로 합니다.

1. Architecture Overview

다음은 애플리케이션의 전체 아키텍처를 나타내는 다이어그램입니다.

Destination 사용하여 SAP SuccessFactors에서 기본 직원(SF 사용자) API를 통해 정보를 읽고 직원의 엔터티를 이용하는 Application입니다.



2. Login SAP API Business Hub

1. <https://api.sap.com> 로 이동하여 SAP API Business Hub에 로그인 합니다.

SAP API Business Hub

Explore Resources Discover Integrations Partner with Us

Discover

Products, Processes, and Partners.

Explore

Integrations, APIs, and Accelerators.

Consume

Visualize and consume integrations and workflows.

Search by product, package, or category

Products Business Processes Categories Industries Partners More

Choose a Product to Explore

See the various resources that each product has to offer

S/4HANA® Cloud

The next generation digital core designed to help you run simple in a digital economy. It provides the industry-specific capabilities and cloud benefits that your business needs.

S/4HANA®

A future-ready ERP system with built-in intelligent technologies, including AI, machine learning, and advanced analytics which transforms business processes with intelligent automation.

Customer Experience

Bring together customer data, machine learning technology, and microservices to power real-time customer engagements across sales, service, marketing, and commerce.

BTP

Accelerate business outcomes with integration, data to value, and extensibility.

View All Products

FEEDBACK

3. Success Factors API 목록 확인

1. 아래의 목록에서 SuccessFactors 선택

SAP API Business Hub

Explore Resources Discover Integrations Partner with Us

Products Business Processes Categories Industries Partners More

Choose a Product to Explore

See the various resources that each product has to offer

S/4HANA® Cloud

The next generation digital core designed to help you run simple in a digital economy. It provides the industry-specific capabilities and cloud benefits that your business needs.

S/4HANA®

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Customer Experience

Bring together customer data, machine learning technology, and microservices to power real-time customer engagements across sales, service, marketing, and commerce.

BTP

Accelerate business outcomes with integration, data to value, and extensibility.

SuccessFactors

A global, cloud-based human resource management software system, evolving to help people and businesses thrive in the experience economy.

Ariba

A cloud-based innovative solution that allows suppliers and buyers to connect and do business on a single platform. It provides less costly ways of procurement and makes business simple.

Fieldglass

A cloud-based, open Vendor Management System that helps organizations find, engage, manage, pay, and unlock more value from this growing external workforce - anywhere in the world.

View All Products

FEEDBACK

2. APIs > ODATA V2 > Personal Information

SAP API Business Hub Explore Resources Discover Integrations Partner with Us Hi Myeong Han

Overview APIs Integrations Business Process Workflow Management

Packages All SOAP ODATA V2 ODATA V4 REST Policy Template

Showing 1 of 2 results View All Results < Previous Page 1 of 2 Next > Sort by: A-Z

Search: employee

Employee Profile Version 1.0 ACTIVE ODATA V2 API

API to maintain the general background information of an employee.

Employee Central Payroll Version 1.0 ACTIVE ODATA V2 API

API to access the results of a payroll run.

Employee Global Information Version 1.0 ACTIVE ODATA V2 API

API to access country specific global information of an employee.

Dismissal Protection Version 1.0 ACTIVE ODATA V2 API

API to access the data for dismissal protection.

Position Management Version 1.0 ACTIVE ODATA V2 API

API for employee position management.

Skills Management Version 1.0 ACTIVE ODATA V2 API

API to manage employees skill information.

Personal Information Version 1.0 ACTIVE ODATA V2 API

API to access personal information for an employee.

Compensation Information Version 1.0 ACTIVE ODATA V2 API

API to access the compensation information of an employee.

FEEDBACK

3. API Reference > PerEmergencyContacts > Try Out

SAP API Business Hub Explore Resources Discover Integrations Partner with Us Hi Myeong Han

/ SAP SuccessFactors Employee Central Show API Key

Personal Information

API to access personal information for an employee.

Overview API Reference Model View SAP Cloud SDK Try Out

Try Out

PerEmergencyContacts

PerPhone GET /PerEmergencyContacts Get entities from PerEmergencyContacts

PersonKey GET /PerEmergencyContacts(name='{name}',personIdExternal='{personIdExternal}',relationship='{relationship}') Get entity from PerEmergencyContacts by key

PerPersonal GET /PerEmergencyContacts(name='{name}',personIdExternal='{personIdExternal}',relationship='{relationship}') Get entity from PerEmergencyContacts by key

PerSocialAccount GET /PerEmergencyContacts(name='{name}',personIdExternal='{personIdExternal}',relationship='{relationship}') Get entity from PerEmergencyContacts by key

PerPerson GET /PerEmergencyContacts(name='{name}',personIdExternal='{personIdExternal}',relationship='{relationship}') Get entity from PerEmergencyContacts by key

PerPersonRelationship GET /PerEmergencyContacts(name='{name}',personIdExternal='{personIdExternal}',relationship='{relationship}') Get entity from PerEmergencyContacts by key

PerEmail GET /PerEmergencyContacts(name='{name}',personIdExternal='{personIdExternal}',relationship='{relationship}') Get entity from PerEmergencyContacts by key

HrisEmergencyContactAddressDEFLT GET /PerEmergencyContacts(name='{name}',personIdExternal='{personIdExternal}',relationship='{relationship}') Get entity from PerEmergencyContacts by key

PerNationalId GET /PerEmergencyContacts(name='{name}',personIdExternal='{personIdExternal}',relationship='{relationship}') Get entity from PerEmergencyContacts by key

PerAddressDEFLT GET /PerEmergencyContacts(name='{name}',personIdExternal='{personIdExternal}',relationship='{relationship}') Get entity from PerEmergencyContacts by key

NameFormatGO GET /PerEmergencyContacts(name='{name}',personIdExternal='{personIdExternal}',relationship='{relationship}') Get entity from PerEmergencyContacts by key

NameElementGO GET /PerEmergencyContacts(name='{name}',personIdExternal='{personIdExternal}',relationship='{relationship}') Get entity from PerEmergencyContacts by key

FEEDBACK

3. Run > API Response를 확인

REQUEST > Headers

APIKey :

URL : GET <https://sandbox.api.sap.com/successfactors/odata/v2/PerEmergencyContacts>

URL에서 Host와 Resource URI를 분리합니다.

Host <https://sandbox.api.sap.com>

Resource URI /successfactors/odata/v2/PerEmergencyContacts

The screenshot shows the SAP API Business Hub interface. In the top navigation bar, there are links for Explore, Resources, Discover Integrations, and Partner with Us. On the right side, there is a search bar, a user profile for Hi Myeong Han, and a 'Show API Key' button. The main content area shows a dark background with two people in a hallway. Below the header, it says '/ SAP SuccessFactors Employee Central' and 'Personal Information'. A sub-header indicates 'API to access personal information for an employee.' The main interface has tabs for Overview, API Reference, Model View, SAP Cloud SDK, and Try Out. The Try Out tab is selected and highlighted with an orange bar. In the Try Out section, there is a search bar, a sidebar with various API endpoints like PerEmergencyContacts, and a main area for defining requests. The request type is set to 'GET' and the endpoint is '/PerEmergencyContacts'. The 'REQUEST' section is expanded, showing 'Headers' which is highlighted with a red box. Under Headers, there is a table with one row: 'HEADER' (APIKey) and 'VALUE' (jzS6mZfacFXArH27lpmNO3CYzDHF1oq0). The 'Body' and 'Code Snippet' tabs are also visible. Below the Headers, the 'RESPONSES' section is expanded. At the bottom of the request definition, the 'Request URL' is displayed as 'https://sandbox.api.sap.com/successfactors/odata/v2/PerEmergencyContacts?stop=20', which is also highlighted with a red box.

4. Application Configuration

앱을 실행하기 전에 우선적으로 설정해줘야하는 내역을 설명합니다.

1) Approuter Configuration

4. 이제 이전 튜토리얼에서 생성해둔 mta-hkmc 프로젝트로 이동하여 Approuter Destination을 작성합니다.

SAP Approuter

Application이 여러 개의 서로 다른 앱(マイクロ서비스)으로 구성된 경우 Application Router는 해당 Application에 대한 단일 진입 점(Single entry point)을 제공하는 데 Nodejs 기반의 라이브러리입니다.

SAP Approuter를 사용할 수 있는 환경

- SAP CF – Cloud Foundry
- SAP XSA – XS Advanced (On Premise)
- Local environment

주요기능

- Dispatching of requests to other microservices
- Authentication
- Authorization check
- Complete integration with Destination service
- Complete integration with HTML5 Application repository
- Complete integration with Business Services

5. /mta-hkmc/mta-hkmc-approuter 경로에서 **default-env.json** 파일을 생성하여 destination을 작성합니다. url을 호출시 name으로 대체하여 url을 호출합니다.

default-env.json

```
{
  "destinations": [
    {
      "url": "https://sandbox.api.sap.com",
      "name": "sfsf_sandbox"
    }
  ]
}
```

The screenshot shows the SAP Studio interface with the following details:

- EXPLORER** view on the left showing the project structure:
 - WORKSPACE (WORKSPACE)
 - mta-hkmc
 - .vscode
 - mta_archives
 - mta-hkmc-approuter (highlighted with a red box)
 - node_modules
 - .gitignore
 - default-env.json (highlighted with a red box)
 - index.js
 - package-lock.json
 - package.json
 - xs-app-local.json
 - xs-app.json
 - resources
 - zttmp_001
 - .gitignore
 - mtayaml
 - package-lock.json
 - package.json
- manifest.json** and **default-env.json** are listed in the top right.
- default-env.json** content (highlighted with a red box):

```
1  {
2   "destinations": [
3     {
4       "url": "https://sandbox.api.sap.com",
5       "name": "sfsf_sandbox"
6     }
7   ]
8 }
```

- STATUS BAR**: master*, ⌂ 0 ▲ 1, Connect, Ln 8, Col 2, Spaces: 4, UTF-8, LF, JSON, ⌂

6. /mta-hkmc/mta-hkmc-approuter 경로에서 xs-app.json과 xs-app-local.json 파일을 수정합니다.

xs-app.json

```
{  
  "welcomeFile": "comhkmctrialzttmp001/index.html",  
  "authenticationMethod": "none",  
  "routes": [  
    {  
      "source": "^/sfsf_sandbox/(.*)$",  
      "target": "$1",  
      "destination": "sfsf_sandbox",  
      "csrfProtection": false  
    }  
  ]  
}
```

xs-app-local.json

```
{  
  "welcomeFile": "comhkmctrialzttmp001/index.html",  
  "authenticationMethod": "none",  
  "routes": [
```

```
{
    "source": "^/comhkmctrialztmp001/(.*)$",
    "target": "$1",
    "localDir": "../ztmp_001/webapp"
},
{
    "source": "^/sfsf_sandbox/(.*)$",
    "target": "$1",
    "destination": "sfsf_sandbox",
    "csrfProtection": false
}
]
```

2) SAPUI5 Configuration

/mta-hkmc/ztmp_001/webapp 경로에서 manifest.json의 routing 설정을 변경합니다.

manifest.json

```
{
    ...
    "routing": {
        "config": {
            "routerClass": "sap.m.routing.Router",
            "viewType": "XML",
            "async": true,
            "viewPath": "com.hkmc.trial.ztmp001.view",
            "controlAggregation": "pages",
            "controlId": "app",
            "clearControlAggregation": false
        },
        "routes": [
            { "name": "MAIN", "pattern": "", "target": ["MAIN"] }
        ],
        "targets": {
            "MAIN": { "viewType": "XML", "viewName": "Main", "viewId": "Main" }
        }
    }
}
```

/mta-hkmc/ztmp_001/webapp/controller 경로에서 main.controller.js 파일을 생성합니다.

main.controller.js

```
sap.ui.define([
    "sap/ui/core/mvc/Controller",
    "sap/ui/model/json/JSONModel",
],
/** 
 * @param {typeof sap.ui.core.mvc.Controller} Controller
 */
function (Controller, JSONModel) {
    "use strict";

    return Controller.extend("com.hkmc.trial.ztmp001.controller.Main", {
        onInit: function () {
        }
    });
});
```

/mta-hkmc/ztmp_001/webapp/view 경로에서 app.view.xml 파일을 수정합니다.

app.view.xml

```
<mvc:View
    controllerName="com.hkmc.trial.ztmp001.controller.App"
    xmlns:mvc="sap.ui.core.mvc"
    xmlns:ui="sap.ui.table"
    displayBlock="true"
    xmlns="sap.m" >
    <App id="app"/>
</mvc:View>
```

/mta-hkmc/ztmp_001/webapp/view 경로에서 main.view.xml 파일을 생성합니다.

main.view.xml

```
<mvc:View
    controllerName="com.hkmc.trial.ztmp001.controller.Main"
    xmlns:mvc="sap.ui.core.mvc"
    xmlns:ui="sap.ui.table"
    displayBlock="true"
    xmlns="sap.m" >
    <Page title="employee">
        <content>
        </content>
    </Page>
</mvc:View>
```

5. SAPUI5 Application 작성

이제 SFSF API를 호출해 SAPUI5 Table Component에 데이터를 바인딩해서 출력해보겠습니다.

/mta-hkmc/ztmp_001/webapp/controller 경로에서 main.controller.js 파일을 수정합니다.

main.controller.js

```
sap.ui.define([
    "sap/ui/core/mvc/Controller",
    "sap/ui/model/json/JSONModel",
],
/**
 * @param {typeof sap.ui.core.mvc.Controller} Controller
 */
function (Controller, JSONModel) {
    "use strict";

    return Controller.extend("com.hkmc.trial.ztmp001.controller.Main", {
        OnInit: function () {
            this._getEmployeeInfo();
        },
        _getEmployeeInfo: function() {
            var view = this.getView();
            var options = {

```

```

        url: "/sfsf_sandbox/successfactors/odata/v2/PerEmergencyContacts",
        method: "get",
        headers: {
            "APIKey": "jzS6mZfacFXArH27IpN03CYzDHF1oq0",
            "Accept": "application/json"
        }
    }
    $.ajax(options).then(function(res) {
        view.setModel(new JSONModel(res.d.results), "PerEmergencyContacts");
    });
}
);
);

```

ajax 호출을 통해 API 호출합니다. URL 호출에 Destination에서 설정한 name으로 호출시 Destination에 설정된 url을 호출하게 됩니다.

호출이 정상적으로 된 경우, view에 모델을 바인딩합니다.

/mta-hkmc/ztmp_001/webapp/view 경로에서 main.view.xml 파일을 수정합니다.

main.view.xml

```

<mvc:View
    controllerName="com.hkmc.trial.ztmp001.controller.Main"
    xmlns:mvc="sap.ui.core.mvc"
    xmlns:ui="sap.ui.table"
    displayBlock="true"
    xmlns="sap.m" >
    <Page title="employee">
        <content>
            <ui:Table
                id="id-tableTxwa"
                minAutoRowCount="10"
                visibleRowCount="10"
                visibleRowCountMode="Auto"
                rows="{
                    path: 'PerEmergencyContacts>/',
                    sorter: [],
                    templateShareable : false
                }" selectionMode="MultiToggle" ariaLabelledBy="title">
                <ui:extension>

```

```
<OverflowToolbar>
    <Text text="Employee"/>
</OverflowToolbar>
</ui:extension>
<ui:columns>
    <cui:Column hAlign="Center" autoResizable="true">
        <Label text="personIdExternal" />
        <ui:template>
            <Text text="{PerEmergencyContacts>personIdExternal}" />
        </ui:template>
    </cui:Column>
    <cui:Column hAlign="Center" autoResizable="true">
        <Label text="name" />
        <ui:template>
            <Text text="{PerEmergencyContacts>name}" />
        </ui:template>
    </cui:Column>
    <cui:Column hAlign="Center" autoResizable="true">
        <Label text="phone" />
        <ui:template>
            <Text text="{PerEmergencyContacts>phone}" />
        </ui:template>
    </cui:Column>
    <cui:Column hAlign="Center" autoResizable="true">
        <Label text="email" />
        <ui:template>
            <Text text="{PerEmergencyContacts>email}" />
        </ui:template>
    </cui:Column>
</ui:columns>
</ui:Table>
</content>
</Page>
</mvc:View>
```

최종 결과

employee				
Employee				
	personIdExternal	name	phone	email
<input type="checkbox"/>	108713	Seph Ruiz	714-455-9876	
<input type="checkbox"/>	108733	Jessica Coburn	678-456-3322	jessica.coburn@email.com
<input type="checkbox"/>	101010	Roger Crow	44 5678 09876	r.crow@email.com
<input type="checkbox"/>	102004	Hannah Jones	33 02 76 87 76 88	h.jones@email.com
<input type="checkbox"/>	102036	Melissa Gape	33 87 98765	m.gape@email.com
<input type="checkbox"/>	103018	Wolfgang Dorn	49 7768 7653245	w.dorn@email.com
<input type="checkbox"/>	103093	Pallavi Singal	89096543	p.singal@email.com
<input type="checkbox"/>	103095	Pramod Pandian	879086543	p.pandian@email.com
<input type="checkbox"/>	108732	Wendy Heesch	760-887-9876	wheesch@email.com
<input type="checkbox"/>	104044	Vitoria	555-8798	
<input type="checkbox"/>	82096	Jack Muller	949-987-9876	
<input type="checkbox"/>	108737	Rick Dixon	949-876-9876	
<input type="checkbox"/>	101002	Justin	44 4890 776589	jason.tweddle@email.com
<input type="checkbox"/>	100112	Jodi Williams	215-666-0987	jodi.williams@email.com
<input type="checkbox"/>	108731	Gemma Elliston	678-777-0954	gemma.elliston@email.com
<input type="checkbox"/>	108734	Stefie Nathans	678-444-5567	stefie.nathans@email.com
<input type="checkbox"/>	100239	Jenny Taylor	415-987-5689	jenny.taylor@email.com
<input type="checkbox"/>	101037	Jen Richardson	44 3069 88765	j.richardson@email.com
<input type="checkbox"/>	101005	Walter Gray	44 8790 98765	w.gray@email.com
<input type="checkbox"/>	102009	Laurie Porter	33 05 98 76 65	l.porter@email.com
<input type="checkbox"/>	102057	Jason Walker	33 456 78543	

여기까지 SAP SFSF API를 통한 Side-by-Side Extension에 대한 기본적인 개발 방법에 알아봤습니다.

해당 상세 소스는 아래의 git를 통해 확인하실 수 있습니다.

<https://github.com/rendez0829/mta-hkmc-sfsf-trial>