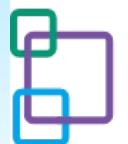




30 NOVEMBER 2023

Salesforce packages for Consultants and Admins

by Rupert Barrow



Elements
.cloud



PipeLaunch



COPADO



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#FTD23





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Salesforce DevOps for Devs only ?

who is the audience for this talk ?

- Admins
- Consultants
- Managers at Salesforce System Integrators
- Developers
- ISV developers





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Rupert Barrow

21 years on Salesforce
Founder of [Rapido.org](https://rapido.org)



@altius_rup



in/rbarrow



#SauvonsNosEnfants #SaveTheChildren

Rapido



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What are we going to talk about today ?



Rapido



Packaging for Admins and Consultants

why am I talking about this subject ?

Packaging is a Salesforce best practice

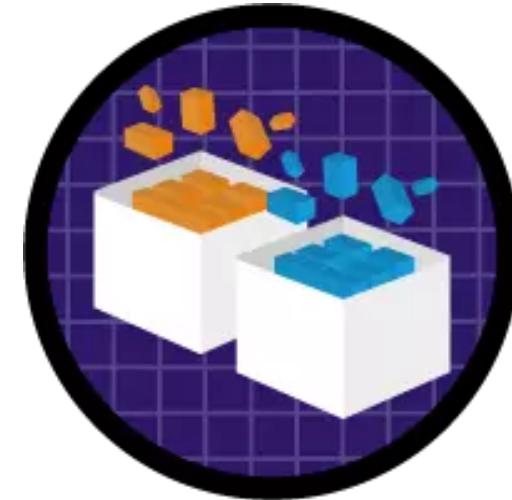
No-one really knows how to implement it (apart from some devs)

Packaging can greatly help clients clear up their happy soup

Packaging helps system integrators reduce project costs

and ...

we're fed up with the Changesets page !!!



- ☑ it's easy, risk-free, reversible and very rewarding
- ➡ you will learn how to create, update, split, install packages
- 😊 with your usual production org and sandboxes
(no need for scratch orgs)





Why should Salesforce clients package ?

advantages and difficulties

- + Best practice
 - Where do we start ?
- + Better versioning
 - Docs/resources only for devs
- + Dependency management
 - Change management !!
- + Faster deployment
 - Perceived risks
- 😊 Forget the Changesets page
 - Impossible with our happy soup 😔



so Admins and Consultants don't do packaging





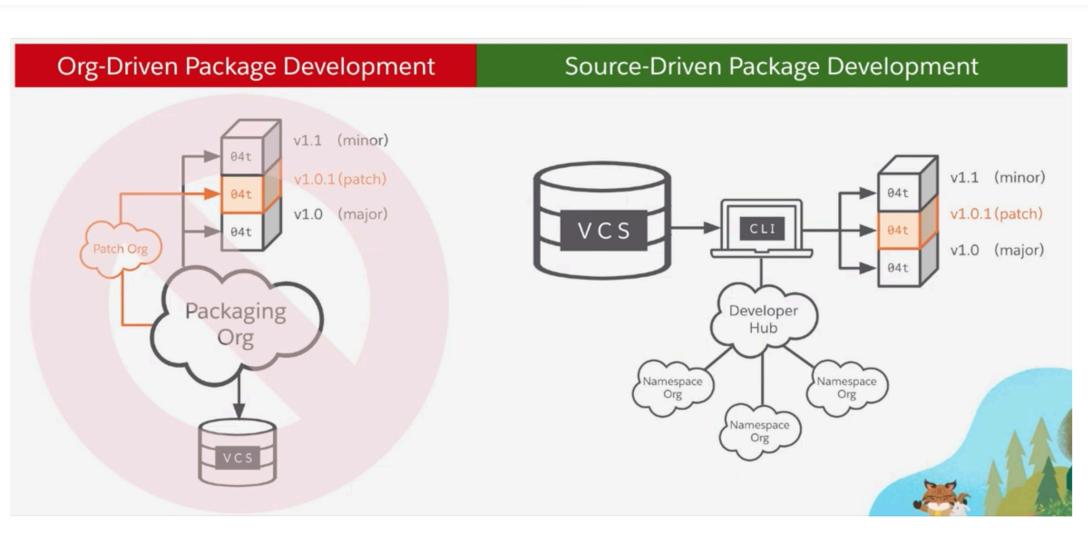
Isn't packaging for ISVs ?

org-dependent unlocked packages

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1GP org-driven
(managed packages and unmanaged packages)
vs
2GP source-driven



2GP managed packages
≠
2GP unlocked packages
≠
2GP org-dependent unlocked packages





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Scenario for today



Rapido



What we will learn today

create, update, split, install org-dependent unlocked packages

Context : you may be

- ... an **Admin** of a Salesforce client's org
- ... a **Consultant** at a Salesforce integrator, implementing a client project
- ... maintaining a client's org with a **large happy soup** (technical debt)
- ... a **developers** who wants to help admins and consultants do packaging





What we will learn today

create, update, split, install org-dependent unlocked packages



1. Create a package
2. Add a field to a package
3. Create a package version
4. Install a package version (beta) in qa
5. Add another field to the package
6. Create a package version (beta), install in qa
7. Promote the package version to released
8. Install the package version in prod
9. Remove a field from a package
10. Create a package version (beta) and install in qa
11. Create a new package
12. Add the removed field to the new package
13. Declare a dependency between packages
14. Install both packages in qa
15. Promote both packages to released
16. Install both packages in prod





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Let's do it !



Rapido



Prerequisites

In production :

- enable « Dev Hub »
- enable « Unlocked Packages »
and « Second-Generation Managed Packages »
- install the Salesforce « Package Visualizer » from the AppExchange





1. Create a package

we will call it « main-package »

In a sandbox

Create an unlocked, org-dependent package
(with no namespace) :

```
% sf package create
  --name main-package
  --path main-package
  --package-type Unlocked
  --org-dependent
  --target-dev-hub production
  --no-namespace
```

sfdx-project.json gets updated

the package is visible
in the Package Visualizer
in production

github.com/RupertBarrow/ftd23

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```
... NOTES.md M project-scratch-def.json M sfdx-project.json U
1 {
2   "packageDirectories": [
3     {
4       "path": "force-app",
5       "default": true
6     },
7     {
8       "path": "main-package",
9       "package": "main-package",
10      "versionName": "ver-0.1",
11      "versionNumber": "0.1.0.NEXT"
12      "default": false,
13      "versionDescription": ""
14    }
15  ],
16  "name": "ftd23-packaging",
17  "namespace": ""
18}
```

The screenshot shows the Salesforce Package Visualizer interface. On the left, there's a list of packages with one item: 'main-package'. This item is highlighted and has a red 'Unlocked' badge next to it. On the right, there's a detailed view for the 'main-package' entry. The details include:

- Unlocked main-package**: Includes 'Edit' and 'Delete' buttons.
- Details** tab: Shows the package is org-dependent and unlocked. It lists the package ID (0Ho06000000TN5MCAW), subscriber package ID (033060000009solAAQ), and a created date of 17/10/2023 at 05:06 PM UTC+2.
- Versions** tab: Not visible in the screenshot.
- Subscribers** tab: Not visible in the screenshot.
- Push Upgrade Requests** button: Not visible in the screenshot.



2. Add a field to the package

a new field or an existing one

Create a new string field « FTD Description » in your feature sandbox

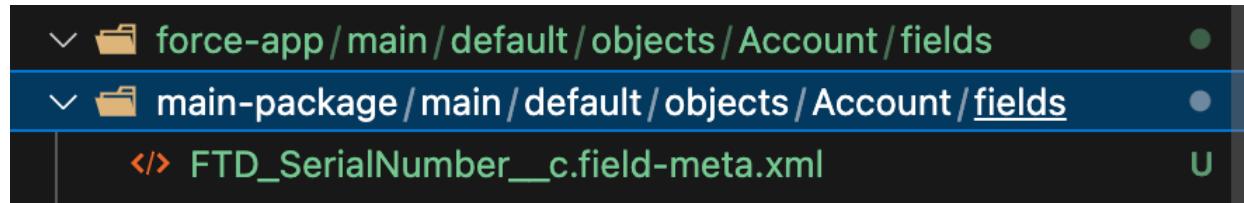
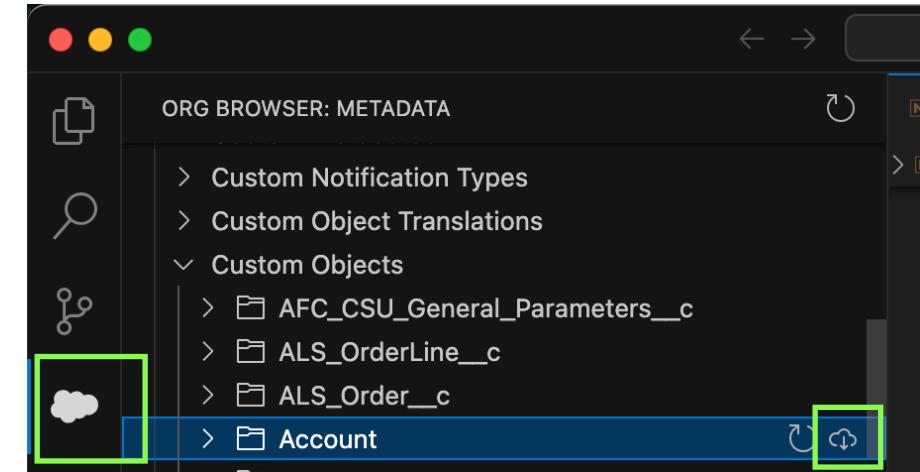
Use the Org Browser to bring it into VS Code

Move the file from the « force-app » directory

`force-app/main/default/objects/Account/fields/FTD_Description__c.field-meta.xml`

to the « main-package » directory

`main-package/main/default/objects/Account/fields/FTD_Description__c.field-meta.xml`





3. Create a package version

getting ready for deployment

Create a package version :

```
% sf package version create  
  --package "main-package"  
  --installation-key-bypass
```

Version 0.1.0.1 is created

The screenshot shows the 'Package Visualizer' interface. On the left, under 'Packages', there is one item named 'main-package' which is 'Unlocked'. On the right, under 'main-package', the 'Versions' tab is selected, showing one version: '0.1.0-1' (Name: 'ver 0.1', Created Date: '17 octobre 2023 à 18:40').

Version Number	Name	Is Released	Created Date
0.1.0-1	ver 0.1	<input checked="" type="checkbox"/>	17 octobre 2023 à 18:40

Version numbering is classical : major.minor.patch-build

This is a beta version. It cannot be installed in production.





4. Install the changes in the qa sandbox

Install with url (Lightning) :

<https://ftd23--qa.sandbox.my.salesforce.com/packagingSetupUI/ipLanding.app?apvId=04t060000002Zp9AAE>

or (Classic - same type of url as an AppExchange package installation) :

<https://ftd23--qa.sandbox.my.salesforce.com/packaging/installPackage.apexp?p0=04t060000002Zp9AAE>

or install by command-line :

```
% sf package install  
  --package main-package@0.1.0.1  
  --target-org qa
```

The screenshot shows the 'Installed Packages' section of the Salesforce packaging interface. A single package named 'main-package' is listed, with its details: Publisher 'Rapido', Version Number '0.1 (Beta 1)', and an 'Uninstall' button highlighted with a yellow box.

Below this, a specific custom field is shown in detail:

Account Custom Field
FTD description (Unlocked)
[Back to Account Fields](#)

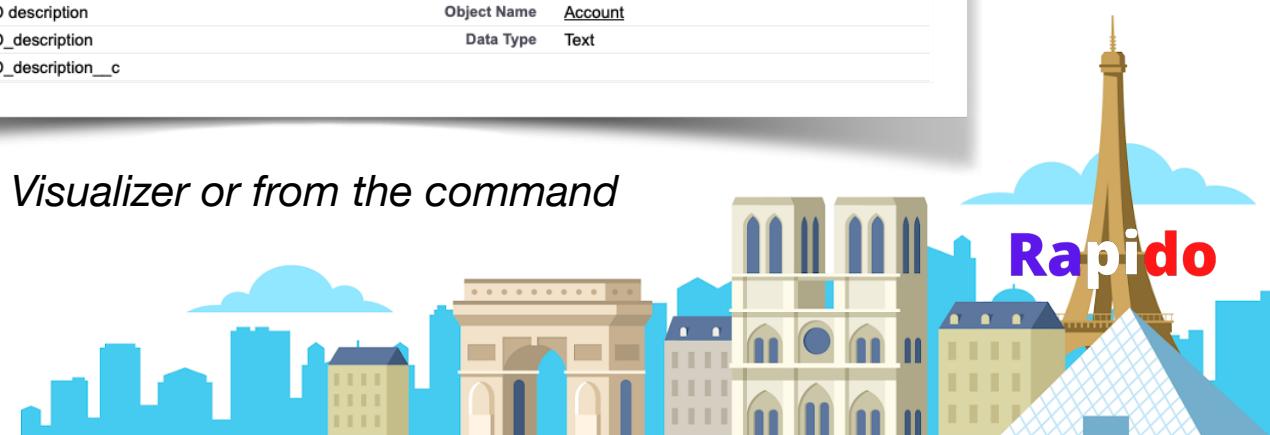
A yellow box highlights a warning message: "This Custom Field Definition is part of a package. You'll lose any edits you make directly in the org if you reinstall or upgrade the package. Immediately inform your development team of any changes you make."

Below the message are buttons for 'Edit', 'Set Field-Level Security', 'View Field Accessibility', and 'Where is this used?'. The 'Field Information' table shows the following details:

Field Label	Object Name	Field Name	Data Type
FTD description	Account	FTD_description	Text
		API Name	FTD_description_c

NB : get your 04t* package version number from the Package Visualizer or from the command

```
% sf package version list  
  --package main-package
```





5. Add another field to the package

carry on implementing your feature

Move existing fields from force-app into the main-package directory

Create a new field dependent in an existing field :

eg FTD_SerialNumber__c formula dependent on SLASerialNumber__c

Bring it into VS Code with the org browser, and move it to the main-package dir.



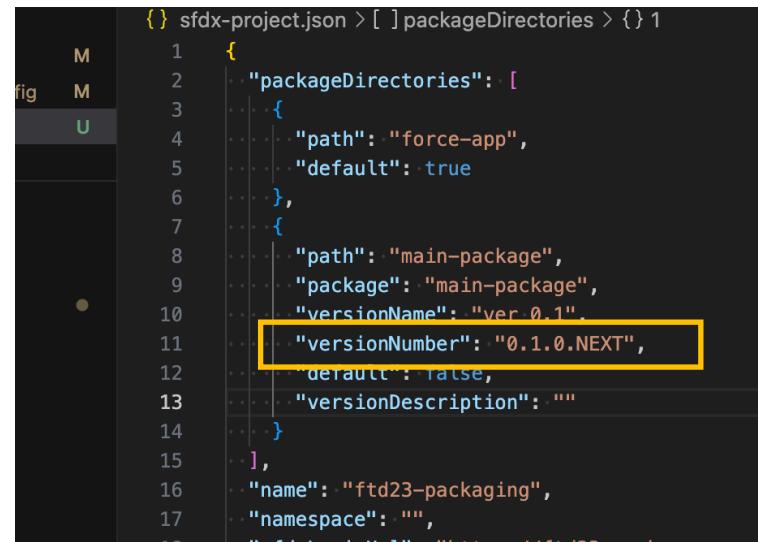


6. Create a package version and install for final tests in qa

Create a new package version

```
% sf package version create  
  --package main-package  
  --installation-key-bypass
```

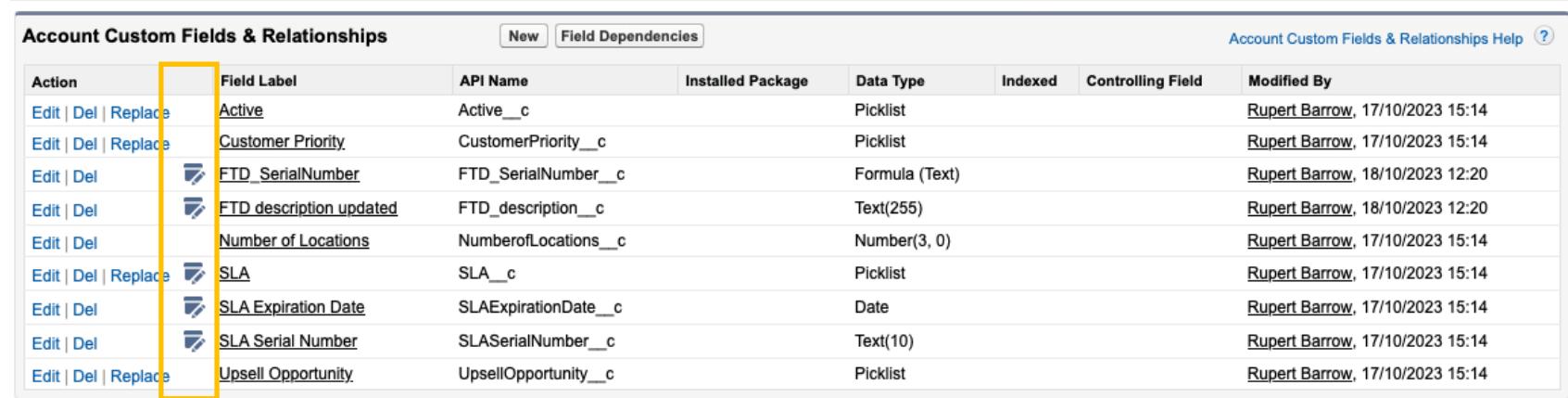
Version 0.1.0.2 is created, numbers are incremented automatically



```
{ } sfdx-project.json > [ ] packageDirectories > {} 1  
M  
fig M  
U  
1 {  
2   "packageDirectories": [  
3     {  
4       "path": "force-app",  
5       "default": true  
6     },  
7     {  
8       "path": "main-package",  
9       "package": "main-package",  
10      "versionName": "ver_0.1",  
11      "versionNumber": "0.1.0.NEXT",  
12      "default": false,  
13      "versionDescription": ""  
14    }  
15  ],  
16  "name": "ftd23-packaging",  
17  "namespace": "",  
18  "label": "ftd23_label",  
19  "description": "ftd23_desc",  
20  "url": "https://github.com/RupertBarrow/ftd23",  
21  "isPrivate": false  
22 }  
23
```

Install in qa :

```
% sf package install  
  --package main-package@0.1.0.2  
  --target-org qa
```



Account Custom Fields & Relationships							
Action	Field Label	API Name	Installed Package	Data Type	Indexed	Controlling Field	Modified By
Edit Del Replace	Active	Active__c		Picklist			Rupert Barrow, 17/10/2023 15:14
Edit Del Replace	Customer Priority	CustomerPriority__c		Picklist			Rupert Barrow, 17/10/2023 15:14
Edit Del	FTA_SerialNumber	FTD_SerialNumber__c		Formula (Text)			Rupert Barrow, 18/10/2023 12:20
Edit Del	FTA description updated	FTD_description__c		Text(255)			Rupert Barrow, 18/10/2023 12:20
Edit Del	Number of Locations	NumberofLocations__c		Number(3, 0)			Rupert Barrow, 17/10/2023 15:14
Edit Del Replace	SLA	SLA__c		Picklist			Rupert Barrow, 17/10/2023 15:14
Edit Del	SLA Expiration Date	SLAExpirationDate__c		Date			Rupert Barrow, 17/10/2023 15:14
Edit Del	SLA Serial Number	SLASerialNumber__c		Text(10)			Rupert Barrow, 17/10/2023 15:14
Edit Del Replace	Upsell Opportunity	UpsellOpportunity__c		Picklist			Rupert Barrow, 17/10/2023 15:14



7-8. Promote beta version to released and install in production

After QA tests are over :

Promote beta to released

```
% sf package version promote  
--package main-package@0.1.0.2
```

Version 0.1.0.2 is not incremented,
just updated to released

Install in production :

```
% sf package install  
--package main-package@0.1.0  
--target-org production
```

Version Number	Name	Subscriber Pa...	Is Released	Created Date
0.1.0-2	ver 0.1	04t060000002ZtWAAU	✓	18 octobre 2023 à 12:16
0.1.0-1	ver 0.1	04t060000002Zp9AAE		17 octobre 2023 à 18:40





9. Remove a field from the package

because you changed your mind

(qa)

In qa, Salesforce Setup menu under Installed Packages, find the package and remove the SLA_ExpirationDate__c field.

The field is now deprecated.

(sandbox)

In VS Code move the SLA_ExpirationDate__c field from the main-package directory back into the force-app directory

Action	Component Name	Parent Object	Type
Remove	FTD_SerialNumber	Account	Custom Field
Remove	FTD description updated	Account	Custom Field
Remove	SLA	Account	Custom Field
Remove	SLAExpirationDate	Account	Custom Field
Remove	SLA Serial Number	Account	Custom Field

The field is still there, marked deprecated until the next package version is installed without this field in it

Help for this Page ?

Account Custom Field
SLA Expiration Date (Managed)

This Custom Field Definition has been marked deprecated. You might lose any changes you make to the component if you later upgrade to a package version that restores it.

Validation Rules [0]

Custom Field Definition Detail

Field Information

Field Label	SLA Expiration Date	Object Name	Account
Field Name	SLAEExpirationDate	Data Type	Date
API Name	SLAEExpirationDate__c		



10. Create a package version and install in qa with your field removed from the package

Create a new package version

```
% sf package version create  
  --package main-package  
  --installation-key-bypass
```

Version 0.2.0-1 is created : first build version after the previous beta was released

Install in qa, removing deprecated metadata

```
% sf package install  
  --package main-package@0.2.0.1  
  --upgrade-type=DeprecateOnly  
  --target-org qa
```

Help for this Page ?

Package Details
main-package
« Back to List: Installed Package

Installed Package Detail

Package Name	main-package	Version Number	0.2 (Beta 1)
Language	English	First Installed Version Number	0.1
Version Name	ver 0.2	Package Type	Org-Dependent Unlocked Package
Namespace Prefix	FTD23 Packages PRODUCTION org	Modified By	Rupert Barrow, 17/11/2023 19:31
Publisher	FTD23 Packages PRODUCTION org	Description	
Installed By	Rupert Barrow, 17/10/2023 18:58	Count Towards Limits	✓
		Apps	0
		Tabs	0
		Objects	0

Metadata Components Included in Package

Action	Component Name	Parent Object	Type
Remove	FTD_SerialNumber	Account	Custom Field
Remove	FTD_description_updated	Account	Custom Field
Remove	SLA	Account	Custom Field
Remove	SLA Serial Number	Account	Custom Field

Account Custom Fields & Relationships

New Field Dependencies Account C

Action	Field Label	API Name	Installed Package	Data Type	Indexed	Controlling Field
Edit Del Replace	Active	Active__c		Picklist		
Edit Del Replace	Customer Priority	CustomerPriority__c		Picklist		
Edit Del	FTD_SerialNumber	FTD_SerialNumber__c		Formula (Text)		
Edit Del	FTD_description_updated	FTD_description__c		Text(255)		
Edit Del	Number of Locations	NumberofLocations__c		Number(3, 0)		
Edit Del Replace	SLA	SLA__c		Picklist		
Edit Del	SLA Expiration Date	SLAExpirationDate__c		Date		
Edit Del	SLA Serial Number	SLASerialNumber__c		Text(10)		
Edit Del Replace	Upsell Opportunity	UpsellOpportunity__c		Picklist		

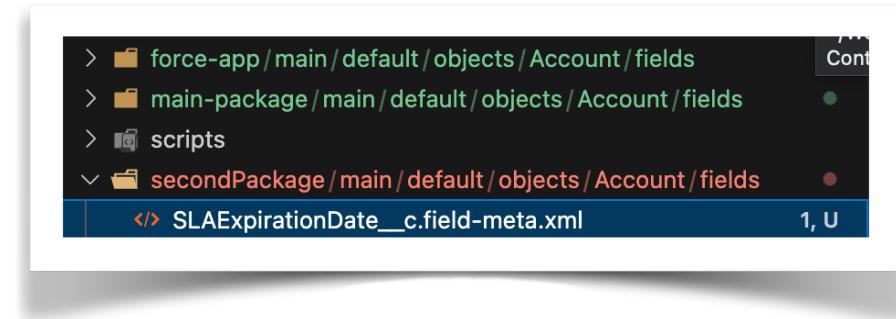


11-12. Create a new package

move removed field to it

Create a second package

```
% sf package create  
--name "secondPackage"  
--path "secondPackage"  
--package-type Unlocked  
--org-dependent  
--target-dev-hub production  
--no-namespace
```



Add SLA_ExpirationDate__c field to it in VS Code by moving the file to the « secondPackage » directory

Create a package version

```
% sf package version create  
--package "secondPackage"  
--installation-key-bypass
```

Name	Namespace Prefix	Package ID	Created By	Created Date
secondPackage	None	0Ho0600000TN5RCAW	Rupert Barrow	18/10/2023 à 03:41 PM UTC+2



13-14. Declare a dependency between packages and install them together

Edit sfscratch-project.json to declare a dependency : main-package depends on secondPackage version 0.1.0.

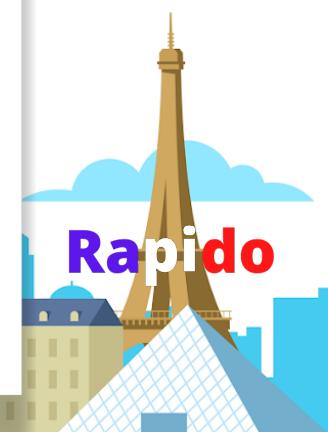
Install main-package and its dependency secondPackage v0.1.0.1 together in qa

```
% sf plugins install texei-sfdx-plugin

% sf texei package dependencies install
  --package main-package
  --target-org qa
```

```
{ } sfscratch-project.json > {} packageAliases
You, 45 seconds ago | 1 author (You)

1  {
2    "packageDirectories": [
3      {
4        "path": "force-app",
5        "default": true
6      },
7      {
8        "path": "main-package",
9        "package": "main-package",
10       "default": false,
11       "versionName": "ver 0.2",
12       "versionNumber": "0.2.0.NEXT",
13       "versionDescription": "",
14       "dependencies": [
15         {
16           "package": "secondPackage",
17           "versionNumber": "0.1.0.LATEST"
18         }
19       ],
20     },
21     {
22       "path": "secondPackage",
23       "package": "secondPackage",
24       "default": false,
25       "versionName": "ver 0.1",
26       "versionNumber": "0.1.0.NEXT",
27       "versionDescription": ""
28     }
29   ]
```





15-16. Promote packages and install in production

After QA tests are over :

Packages are promoted individually from beta to released

```
% sf package version promote  
--package main-package@0.2.0.1
```

```
% sf package version promote  
--package secondPackage@0.1.0.1
```

Install both packages together in production :

```
% sf texei package dependencies install  
--package main-package  
--target-org production
```





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Conclusions



Rapido



Summary

what we learned with org-dependent unlocked packages

- Create, update, version packages and install package versions in any org
- Add items, remove them, move them from one package to another
- Promote beta package versions to released and install in production
- Install packages and their dependent packages

→ So go ahead Admins and Consultants,
implement org-dependent unlocked packages !



VS Code ??



`sf cli ??`

wait a minute !!!





Announcing Rapido Companion for DevOps

DevOps for Salesforce Admins and Consultants

→ Chrome Extension

→ Straight from the Salesforce changesets page !

✓ No VS Code, no sf cli

+ All changes version-controlled in Github

+ work with changesets or packages

Sign up for the private beta :

Rapido

www.rapido-companion.app

The screenshot displays the Rapido Companion for DevOps application. It includes three main sections: 1) A 'Source Tracking' table showing various Salesforce metadata items like 'Account.PKN_PWC_ALL_Accounts_Not_Synchronized', 'Admin', and 'AppSwitcher'. 2) A 'Commit table' showing a single entry for 'ContactCenter_UtilityBar' which was modified by an 'Automated Process'. 3) A 'GitHub Status' panel listing a series of completed GitHub actions related to a deployment job.

Name	Type	Obsolete ?	Deleted ?	New ?	Modified by
ContactCenter_UtilityBar	FlexiPage				Automated Process

Name	Type	Obsolete ?	Deleted ?	New ?	Modified by
Account.PKN_PWC_ALL_Accounts_Not_Synchronized	ListView				
Admin	Profile				
AppSwitcher	AppMenu				
chrome_extension_bfgkibfhnknegobneigciaddnjcoaed	CorsWhitelistOrigin				
Communaute_Clients_Flowbird_C	SiteDotCom				
Contact.PKG_CSU_ES_POR_Portal_Contacts	ListView				
ContactCenter_UtilityBar	FlexiPage				
CrisisCenter_UtilityBar	FlexiPage				
Cumulus_CI	ConnectedApp				
DevOps_Center	PermissionSetGroup				

Name	Type	Obsolete ?	Deleted ?	New ?	Modified by
ContactCenter_UtilityBar	FlexiPage				Automated Process

GitHub Status (30 mai à 21:25)

- Set up job : completed (success)
- Initialize containers : completed (success)
- Copy source code : completed (success)
- Generate package.xml : completed (success)
- Retrieve metadata from Salesforce (source org) : completed (success)
- Commit to GitHub : completed (success)
- Command options for deploy : completed (success)
- Deploy metadata to Salesforce (target org) : completed (success)
- Post Checkout : completed (success)
- Stop containers : completed (success)
- Complete job : completed (success)





Thanks for attending this session!

