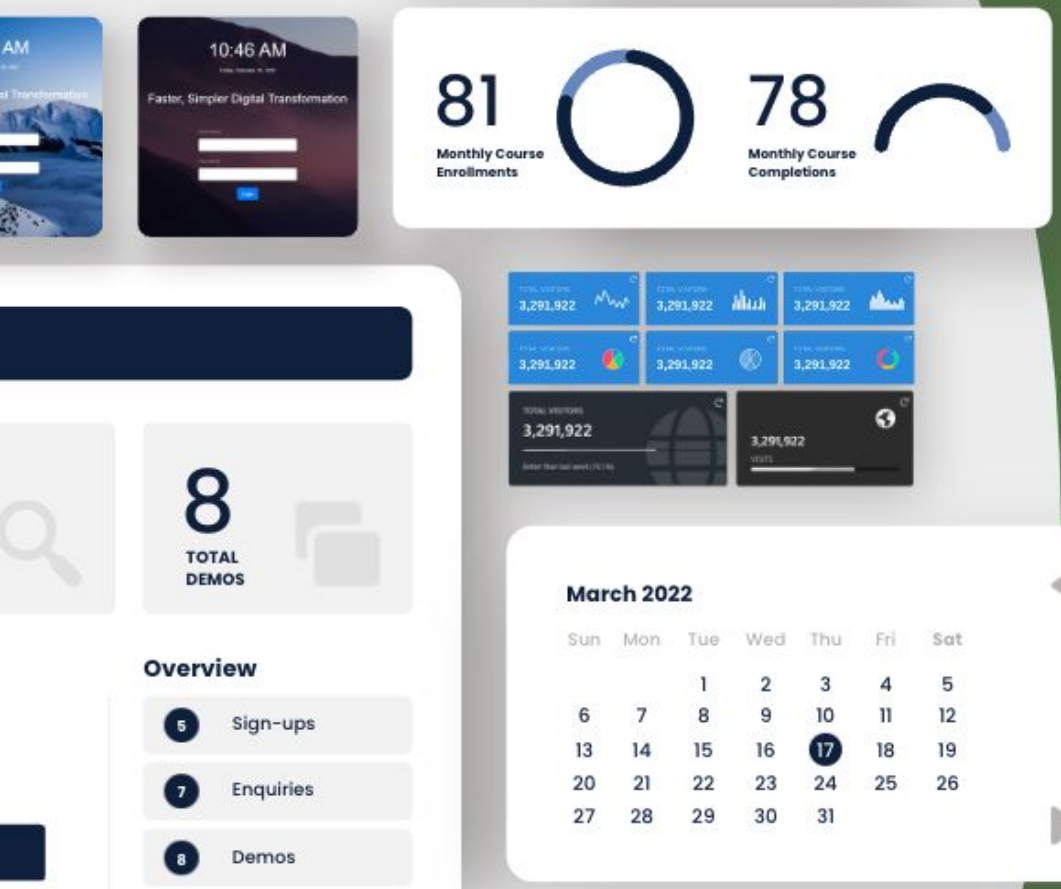
Joget



Joget DX 8

Version Control

http://facebook.com/jogetworkflow

http://twitter.com/jogetworkflow

Last Revised on March 2024

Joget

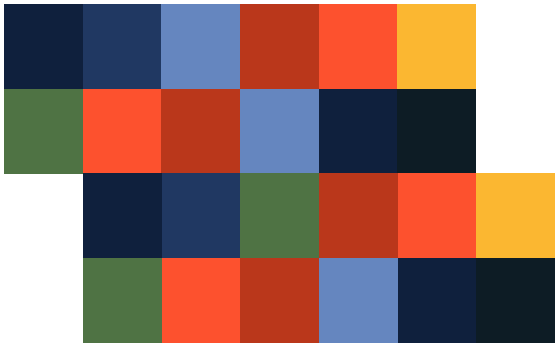
Prerequisites

1. Good understanding on concept of Application in Joget with the know-hows to create Process, Form, List, and UI.
2. Basic understanding on versioning.

Joget®

Content

1. Introduction to Version Control
2. Process Version Control
3. Application Version Control
4. Git Version Control
5. CI/CD
6. Collaborative Development



Chapter 1
Introduction to Version Control

Version Control

- There are 3 types of version controls available in Joget App management. They are:-
  - Application Version.
  - Process Version.
  - Git Version.

Joget

Version Control

- Which, when, and how do we make use of version control?
  - Process Design Fixes or Update.
  - Application Form / List / UI design update.

Joget

Version Control

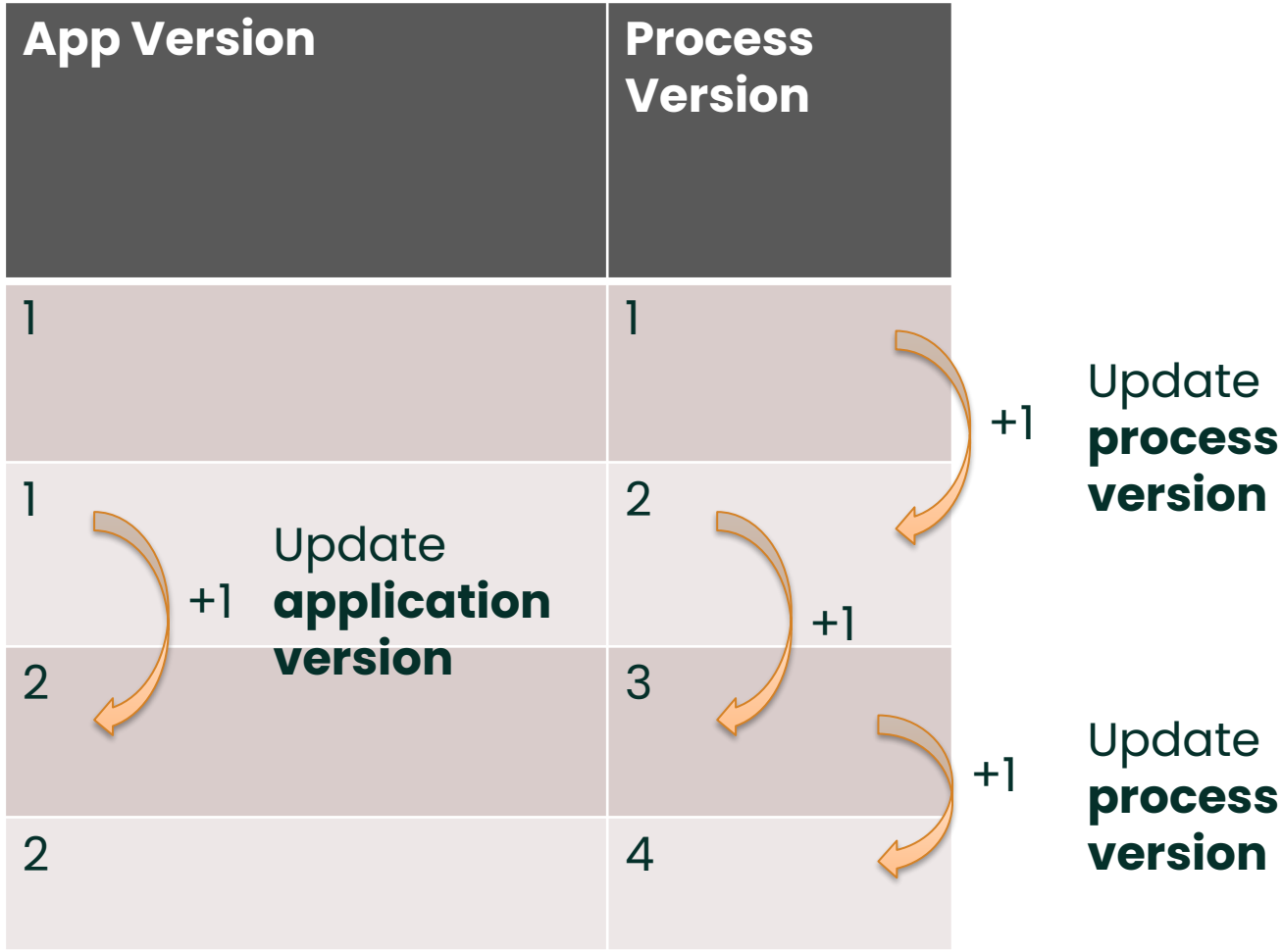
- Updating Process version
  - Updates only the Processes under the current Application version.
  - **Updates** existing running instances of the processes found under the current Application version to the new process design.
- Updating Application version
  - Makes a copy of the Processes, Forms, Lists, UIs of the current version to the new version.
  - Includes all the Processes, Forms, Lists, and UIs.
  - Does **NOT** affect any running process instances.

Joget

Version Control

Action / Components	Update Process Version	Update Application Version
Process	✓	✓
Form		✓
List		✓
UI		✓
Application Settings		✓

Version Control



Joget

Version Control

App Version	Process Version	Migrate existing running instances of the current App version to new Process version
1	1	
1	2	• Yes (All that are created under current App version)
2	3	• No
2	4	• Yes (All that are created under current App version) • Will not affect instances of App version 1)

Update **process version**

Update **application version**

Update **process version**

Joget

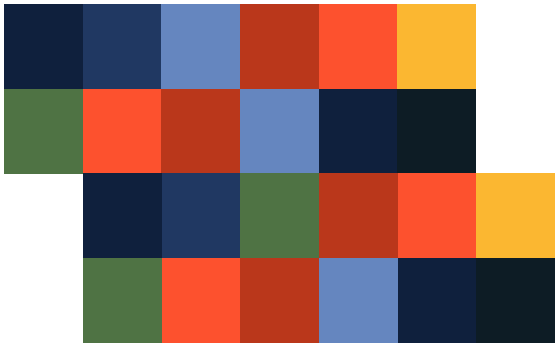
Use Cases

- Updating the Process version is ideal when:-
  1. Urgent update to process design flaw.
- Updating the Application version is ideal when:-
  1. Application is ready to be pushed to production.
  2. Completed design ready to be backed up as a version/backup before moving on to the next iteration of development.

Joget

Chapter Review

- Understand the various types of version control.



Chapter 2

Process Version Control

Process Version

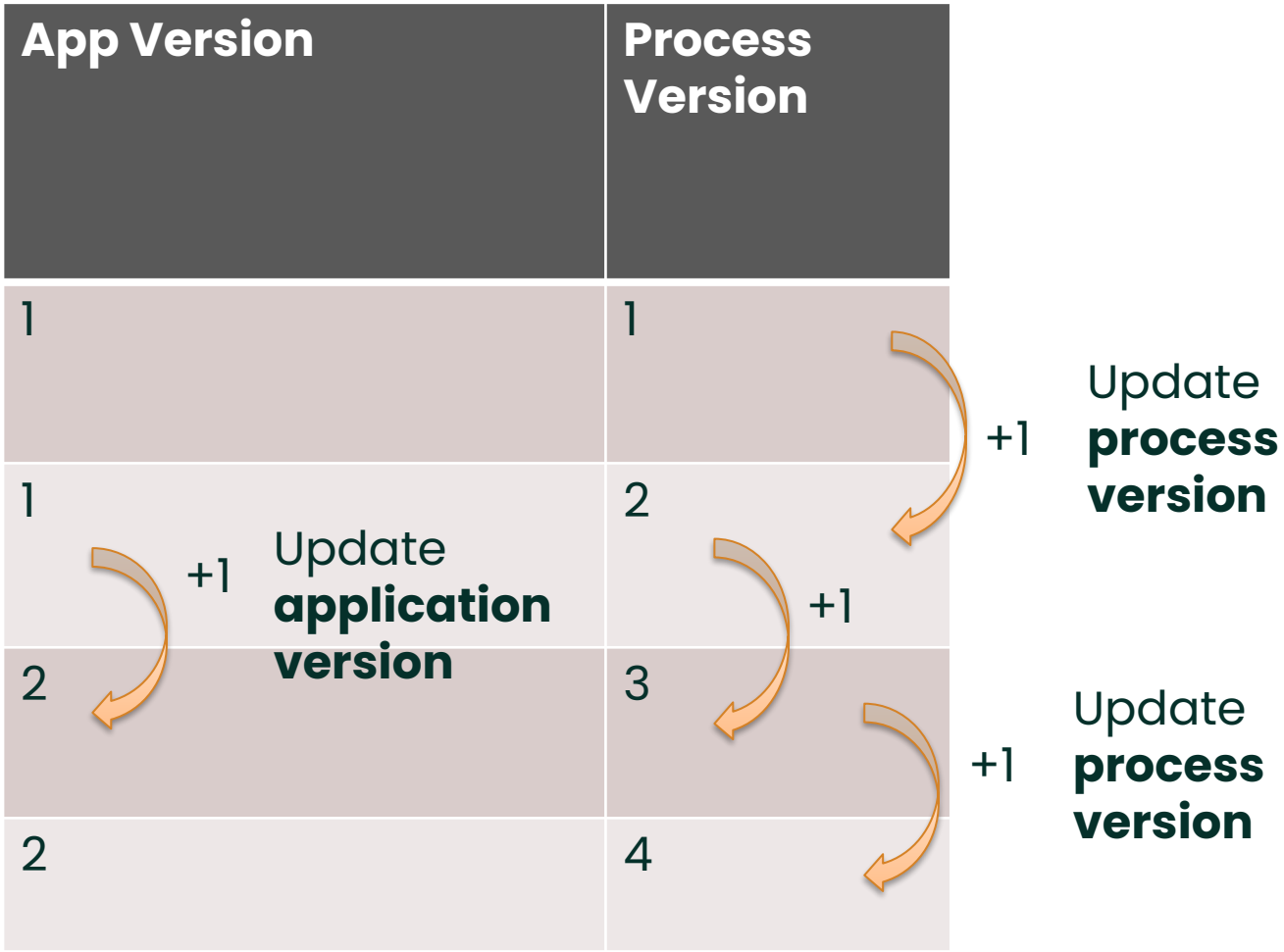
- There may be multiple process versions tagged to one Application version.
- However, there can be only one active Process Version (the latest) in an Application version at any point of time.
- It is NOT possible to rollback to earlier process version in the same application version.

Joget

Version Control

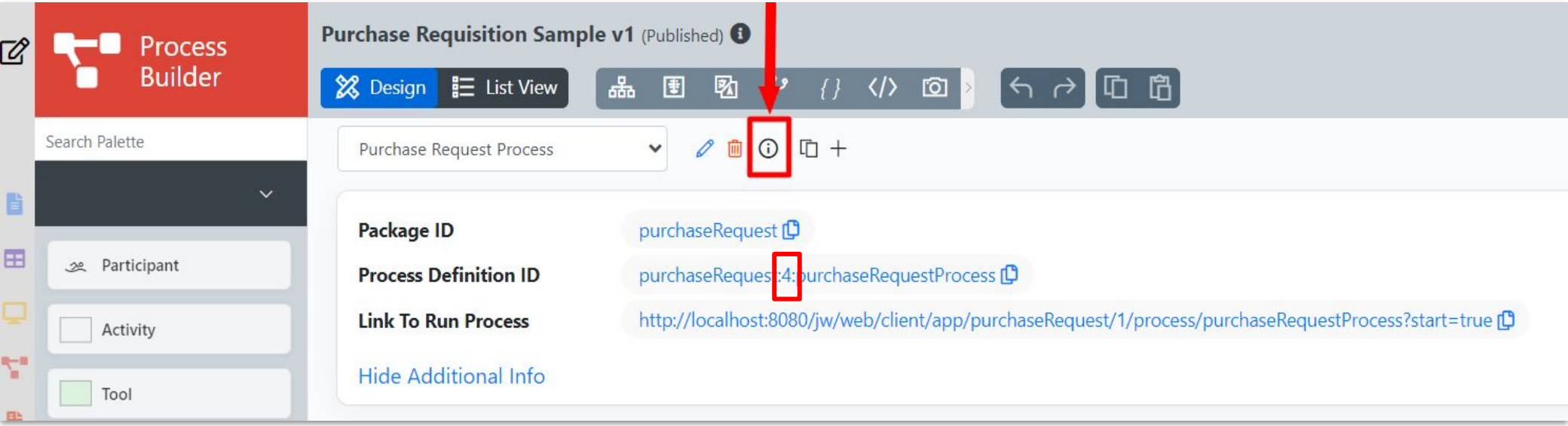
Action / Components	Update Process Version	Update Application Version
Process	✓	✓
Form		✓
List		✓
UI		✓
Application Settings		✓

Version Control



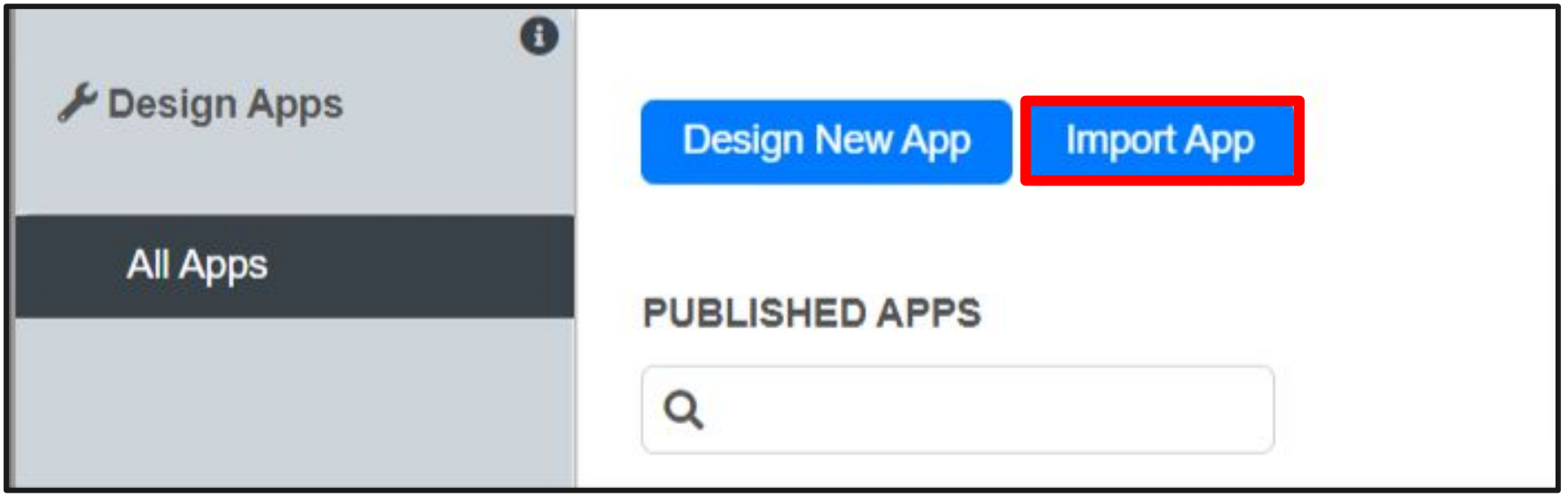
How to Update Process Version?

- Click on "Show Additional Info" link to reveal the **Process Definition ID**. You can find the process version highlighted



How to Update Process Version?

- By updating App version - Upon import of App (of the same App ID)



(This will increase App Version too, more on this later)

Migration of Process Instances

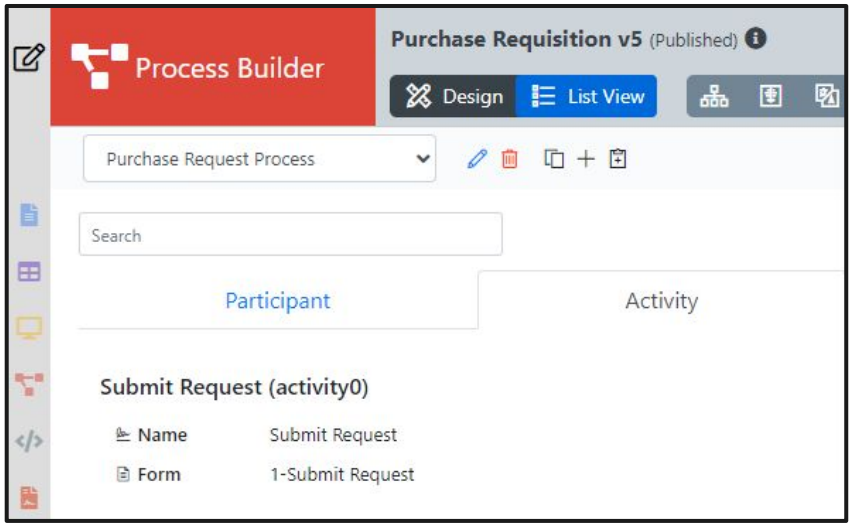
- On the event of process update, process instances that are still running on the current process version will be migrated/updated to the latest process version (in the same app version only).

Migration of Process Instances - Missing Activity

- If there's NO matching activity(ies) that can be matched, Joget will **NOT migrate the process instance** and *it get **aborted***.
- Important Notes as opposed to Joget Workflow v6:
  - Staying in its original process instance is a new behavior in Joget DX. In Joget Workflow v6, the original process instance will be aborted, and a new process instance will be created, resuming where it was last left off.
  - As it stays in its original instance, SLA and relevant attribute data are kept intact, instead of getting resetted.
- More reading at: http://dev.joget.org/community/display/DX8/Update+Existing+Running+Process+Instances+to+the+Newer+Process+Flow+After+Process+Changes

Important Note

- The newly created activity instances **will continue to function as if nothing has changed** and should be transparent to the end users.
- Resumed activities will continue to use previously mapped forms.



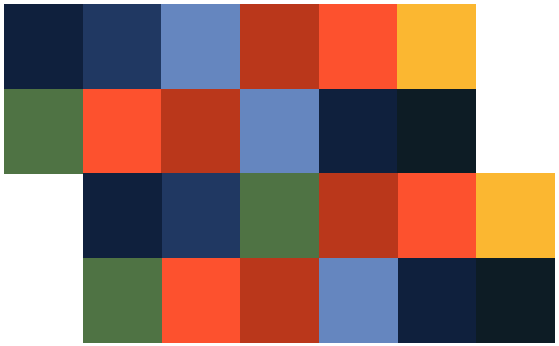
Important Note

- If there's new activity(ies)/tool(s) being added to the new process design. One shall need to configure the mapping(s) accordingly.

Joget

Chapter Review

- Understand on how Process Version works.
- Understand its implications on existing running process instances.



Chapter 3
Application Version Control

Joget

Application Version

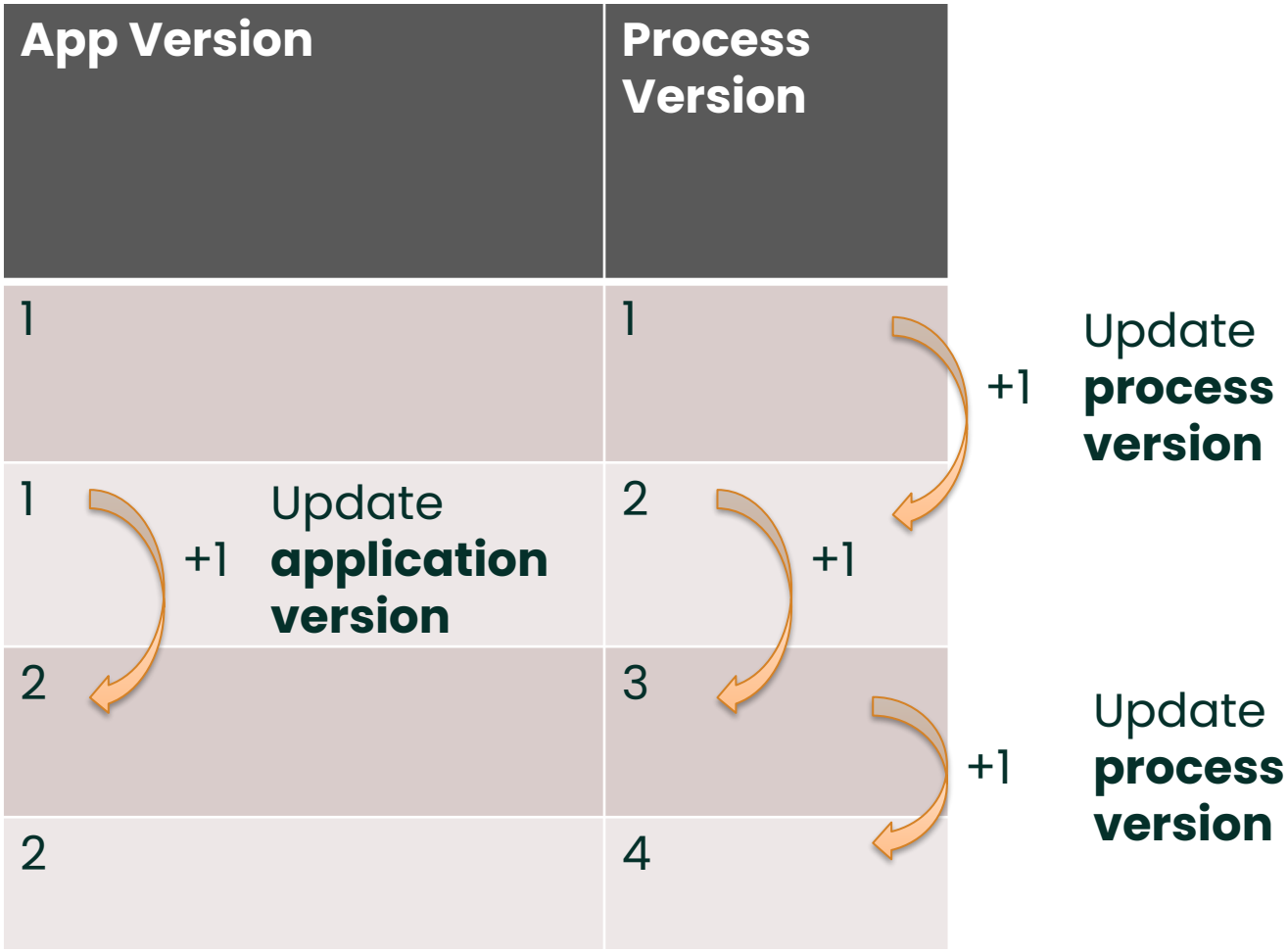
- Application version consists of the following:-
  - Processes
  - Forms
  - Lists
  - UIs
- Each Application version would contain only one Process version (the latest) at any point of time.

Joget

Version Control

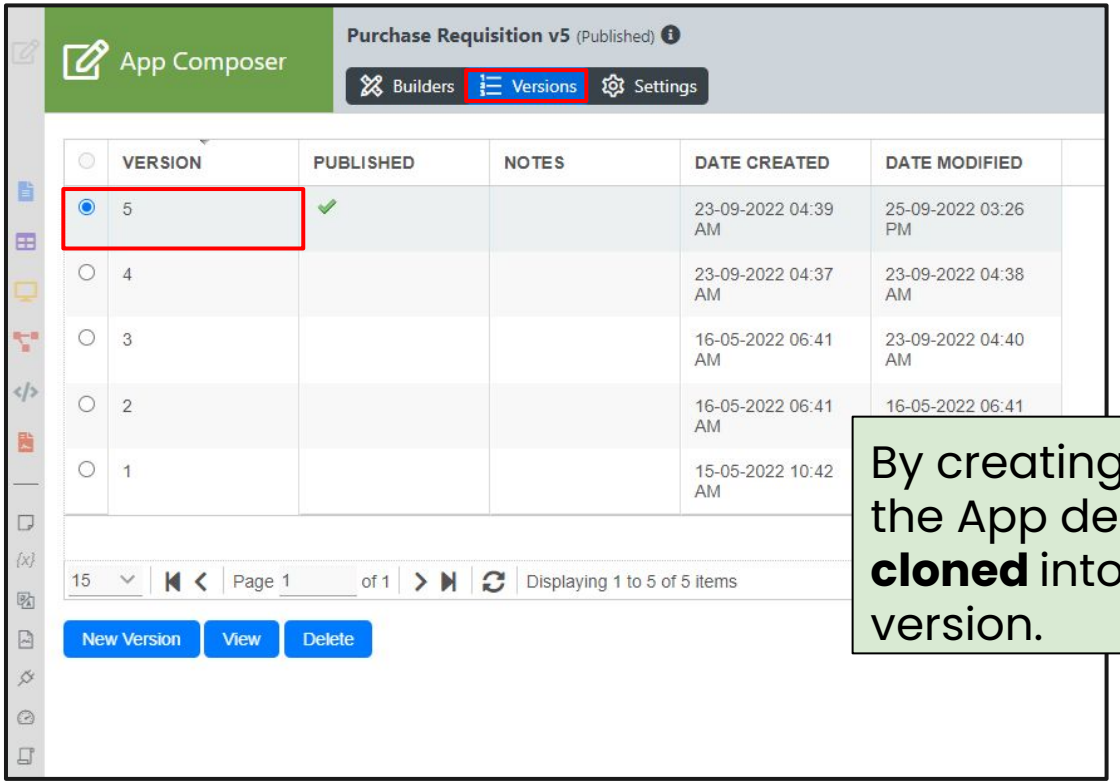
Action / Components	Update Process Version	Update Application Version
Process	✓	✓
Form		✓
List		✓
UI		✓
Application Settings		✓

Version Control



How To Update Application Version?

1. App Composer > Versions > Select version > New Version



By creating a **New Version**, the App design will be **cloned** into the new version.

Online Reference:
https://dev.joget.org/community/display/DX8/App+Versioning+and+Publishing

How To Update Application Version?

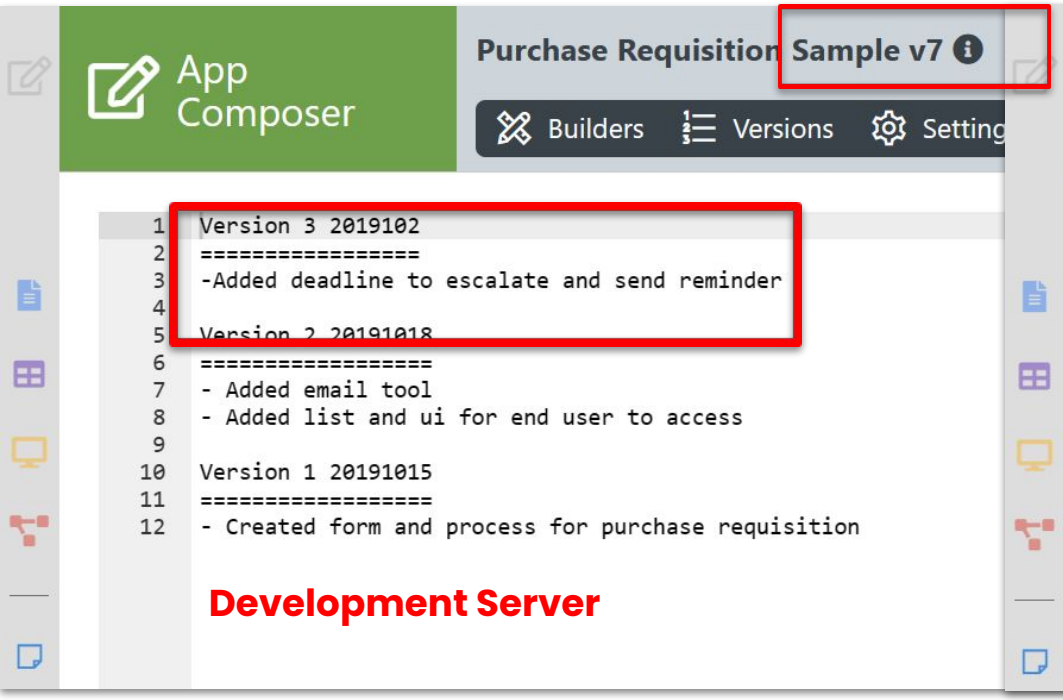
2. Import App
   - By importing the app into a Joget server, the Application Version will **increase by 1** over the existing version already in the server.

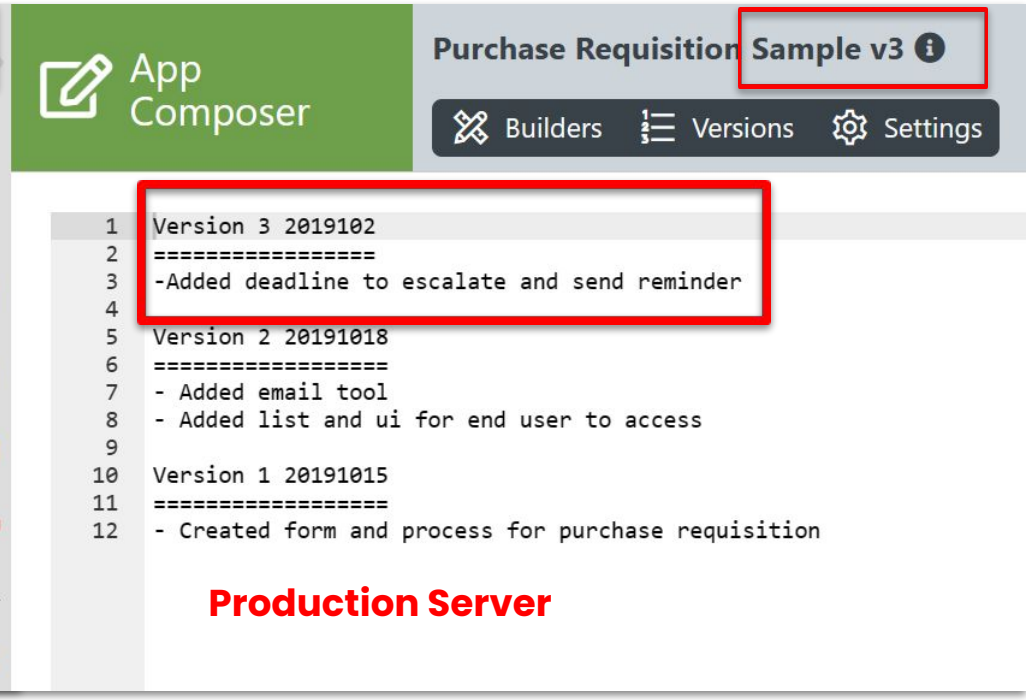
What does this means?

When you are dealing with the same app across different Joget servers, you may end up with different app version in each server but with exact same app design.

App Version Across Different Servers

- When you are dealing with the same app across different Joget servers, you may end up with different app version in each server but with exact same app design.



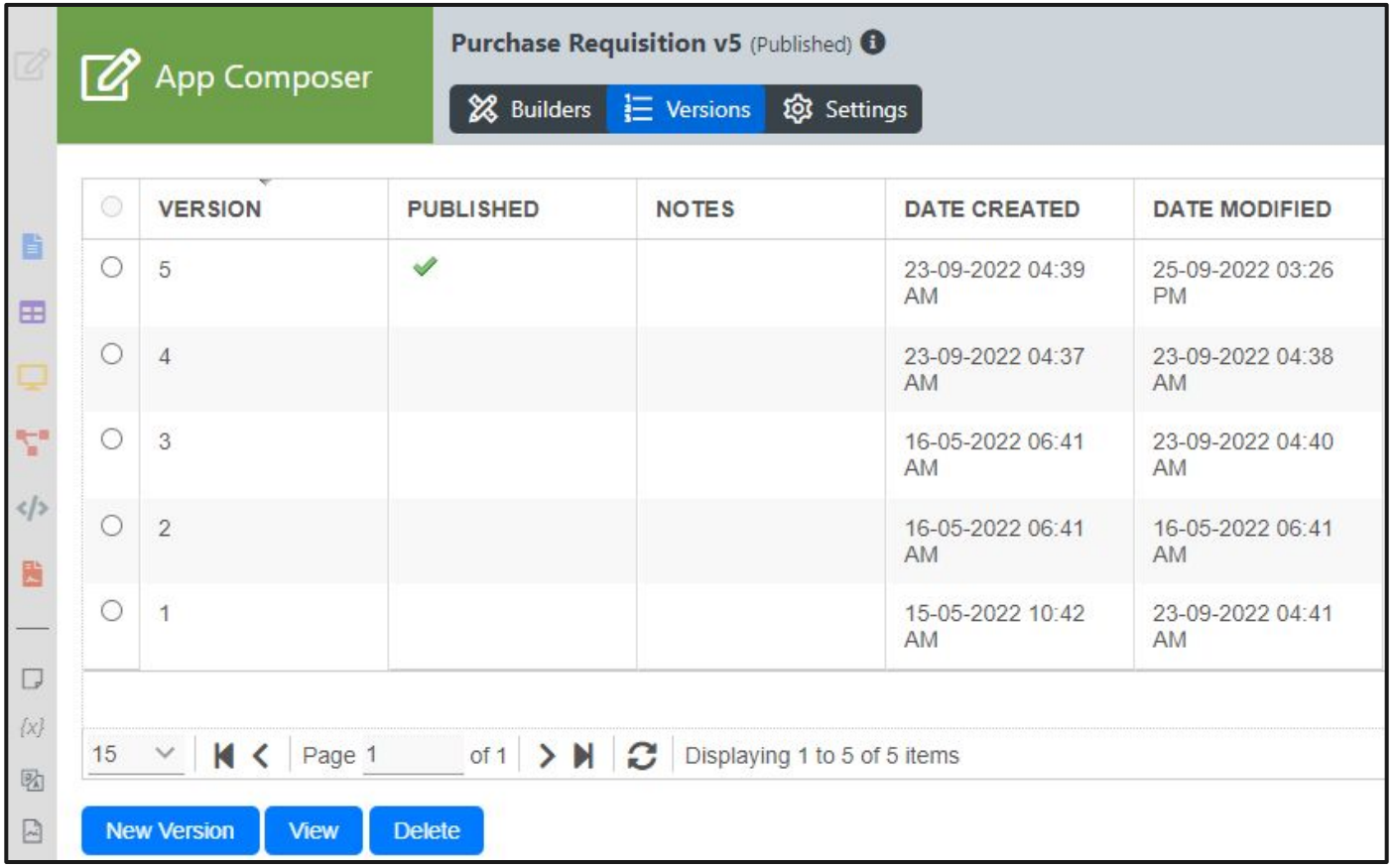


Keeping Track of App Design Across Different Servers

- With the nature of increment of the last app version when an app is imported in, it is imperative to keep track of the “real” app version (app design).
- Make use of **Notes** in the App Composer.

Application Published state

- With more than 1 version available for the same Application in a Joget server, it is now possible to toggle between versions.



Joget

Published Application Version

- New process instances created will be based on the Published version.
- All elements accessed by end users will also be based on the Published version except for:-
  - For Process Instances created under different Application version, users will continue to use the Forms tied to the specific Application version for its assignments.

Joget

Important Note

- By increasing the Application Version, the Process Version will be increased as well.

Joget

Exercise on Version Control

1. Create a new Joget Application with a **Process, Form and UI**. (That's v1)
2. Run the Application, create a new process Instance.
3. Update the Process Design and observe the changes.
4. Increase the Application Version by creating a new version. (From v1 to v2)
5. Modify the Process and Form (in v2), create new process instance and observe the changes.
6. Compare the old and new process instances.

Exercise on Version Control

1. **Create a new Joget Application with a Process, Form and UI. (That's v1)**
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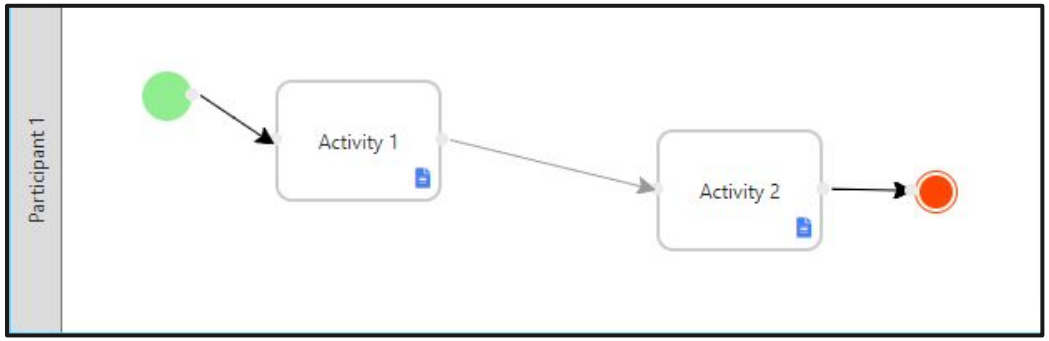
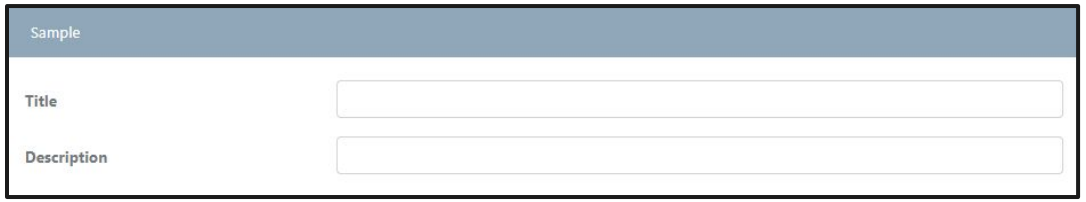
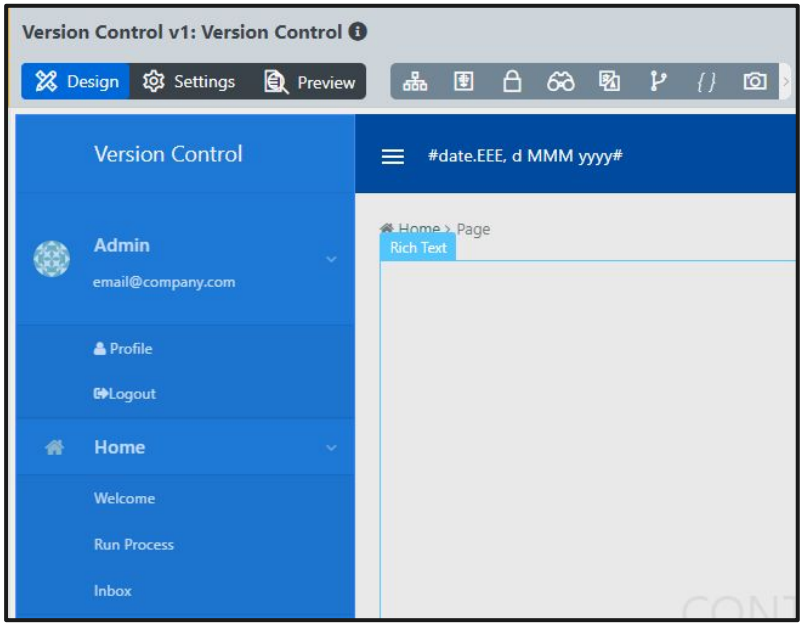
Exercise on Version Control

1. Create a new Joget Application with a **Process, Form and UI**. (That's v1)
   Example:
   A process flow with 2 activities with both of them mapped to the same form that contains 2 text fields.







Joget

Exercise on Version Control

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2. **Run the Application, create a new process Instance.**
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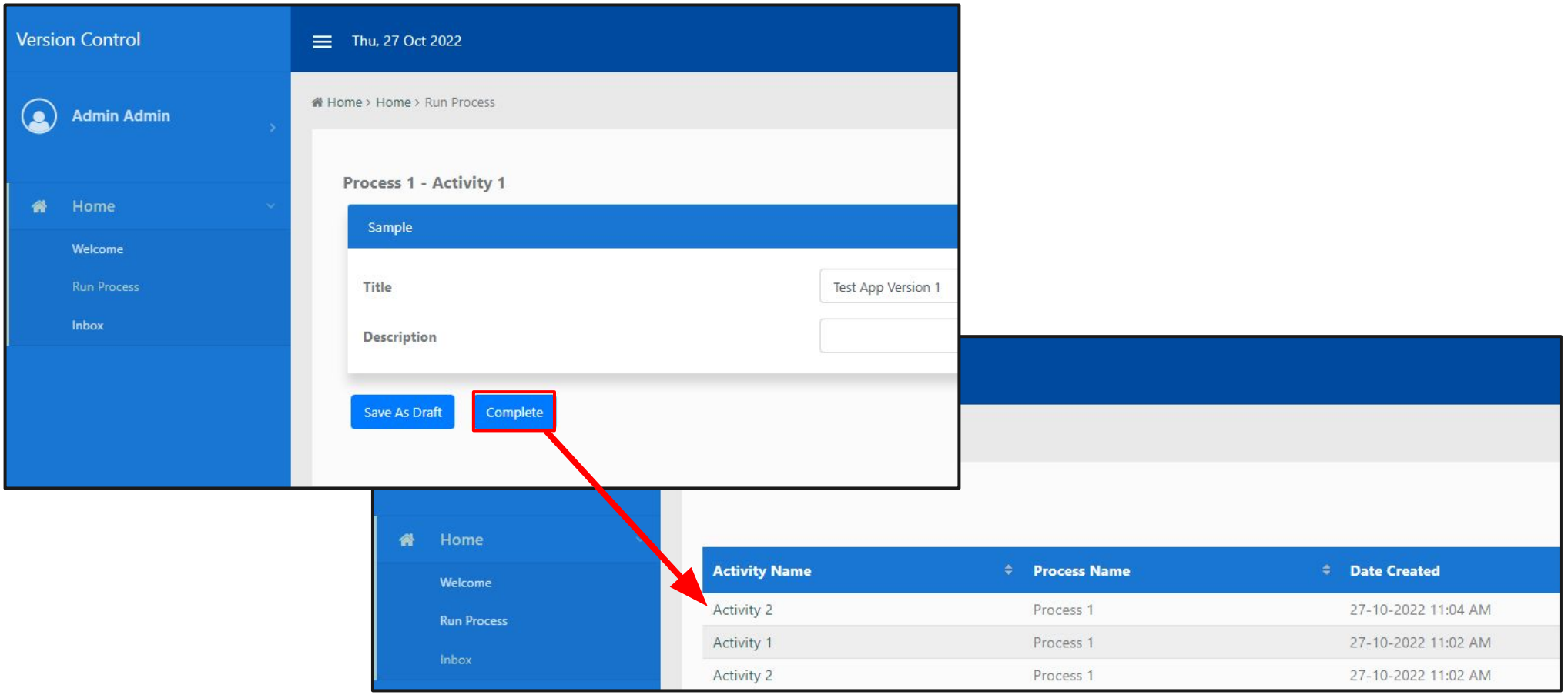
Exercise on Version Control

2. Run the Application, create a new process Instance.



Joget

Exercise on Version Control

2. Run the Application, create a new process Instance.
   - Observe that on the completion of Activity 1, it will flow to Activity 2.
   - On completion of Activity 2, the process instance comes to an end.
   - Create another process instance and have the it pending at Activity 2 to proceed to the next step.

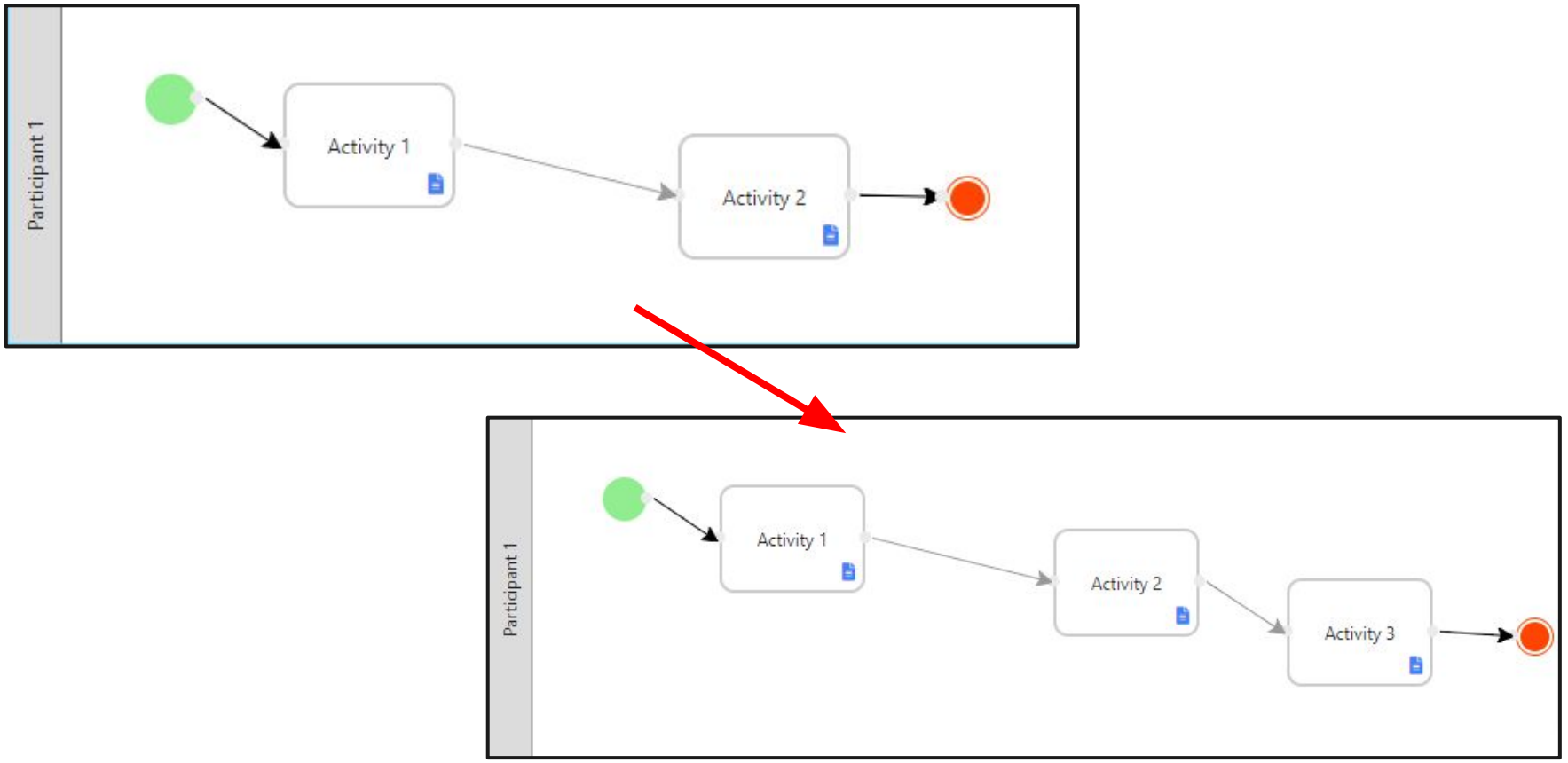
Joget

Exercise on Version Control

1. Create a new Joget Application with a **Process, Form and UI**. (That's v1)
2. Run the Application, create a new process Instance.
3. **Update the Process Design and observe the changes.**
4. Increase the Application Version by creating a new version. (From v1 to v2)
5. Modify the Process and Form (in v2), create new process instance and observe the changes.
6. Compare the old and new process instances.

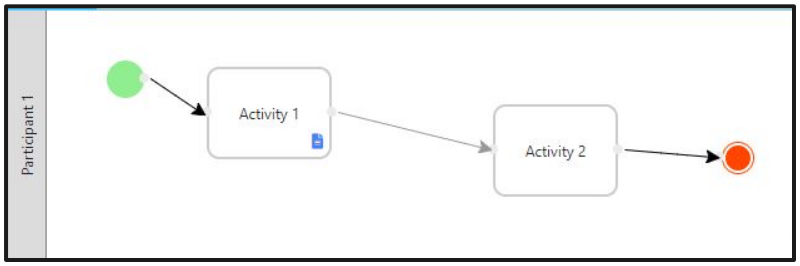
Exercise on Version Control

3. Update the Process Design and observe the changes.

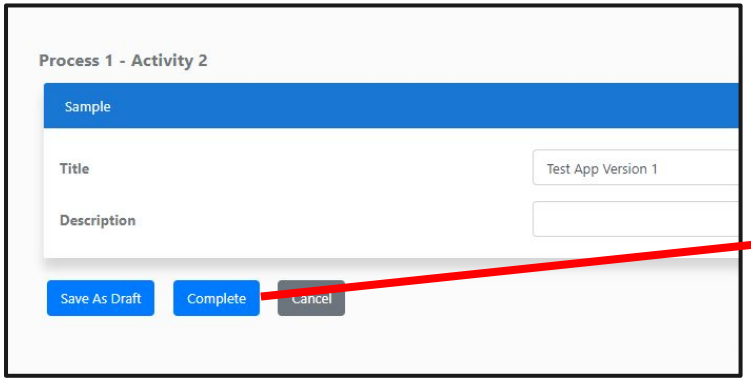


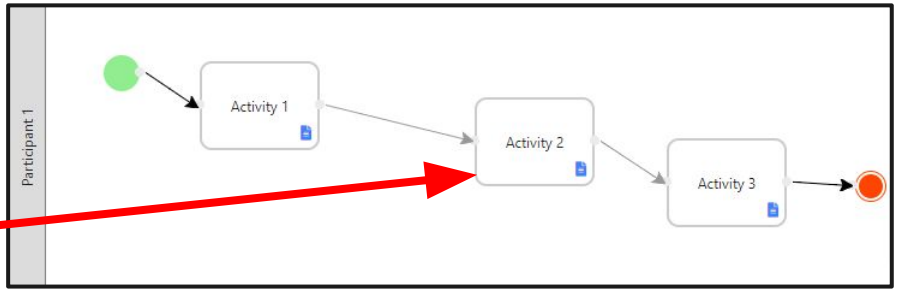
Exercise on Version Control

3. Update the Process Design and observe the changes.
   - Observe that we have process instance that is started before the process design change.



   - On completion of Activity 2, what will happen?





Joget

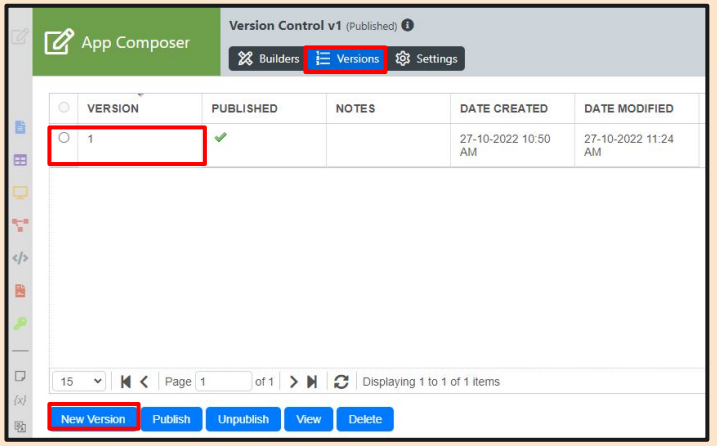
Exercise on Version Control

1. Create a new Joget Application with a **Process, Form and UI**. (That's v1)
2. Run the Application, create a new process Instance.
3. Update the Process Design and observe the changes.
4. **Increase the Application Version by creating a new version. (From v1 to v2)**
5. Modify the Process and Form (in v2), create new process instance and observe the changes.
6. Compare the old and new process instances.

Exercise on Version Control

4. Increase the Application Version by creating a new version. (From v1 to v2)
   - Observe that at this point of time, App Version 1 and App Version 2 are identical.
   - Switch the published version from 1 to 2.

RECAP: App Composer > Versions > Select version > New Version



By creating a **New Version**, the App design will be **cloned** into the new version.

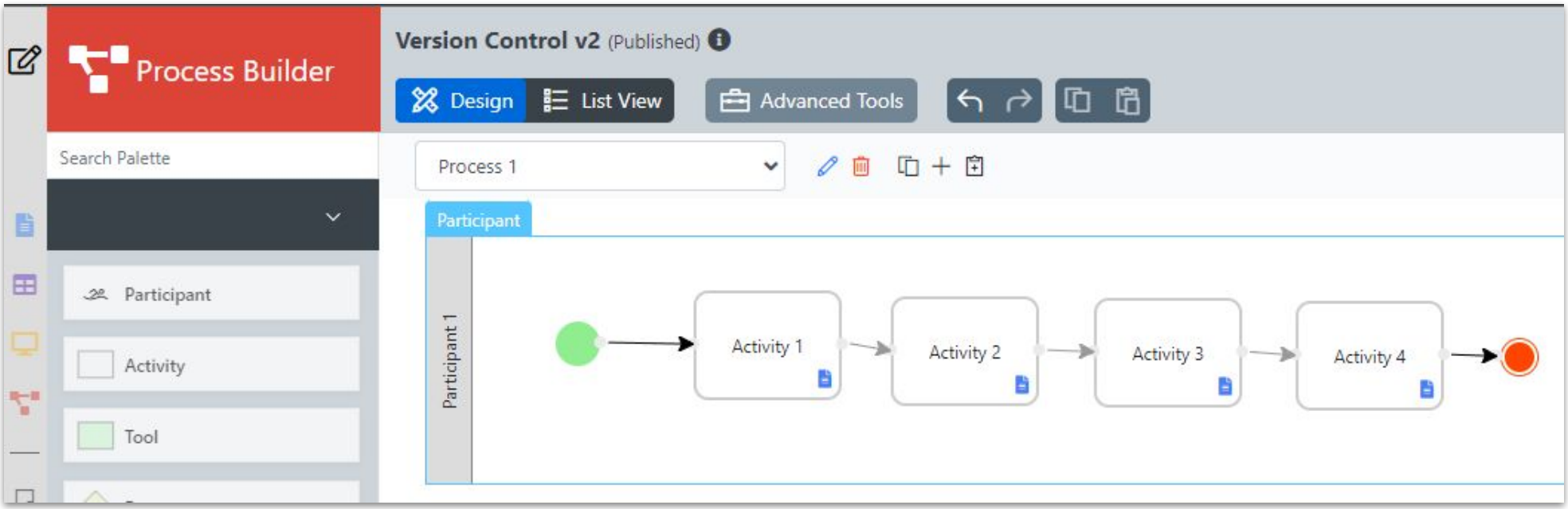
Joget

Exercise on Version Control

1. Create a new Joget Application with a **Process, Form and UI**. (That's v1)
2. Run the Application, create a new process Instance.
3. Update the Process Design and observe the changes.
4. Increase the Application Version by creating a new version. (From v1 to v2)
5. **Modify the Process and Form (in v2), create new process instance and observe the changes.**
6. Compare the old and new process instances.

Exercise on Version Control

5. Modify the Process and Form (in v2), create new process instance and observe the changes.
   - Add new text field to the form.
   - Add new activity to the process.



Joget

Exercise on Version Control

1. Create a new Joget Application with a **Process, Form and UI**. (That's v1)
2. Run the Application, create a new process Instance.
3. Update the Process Design and observe the changes.
4. Increase the Application Version by creating a new version. (From v1 to v2)
5. Modify the Process and Form (in v2), create new process instance and observe the changes.
6. **Compare the old and new process instances.**

Joget

Exercise on Version Control

6. Compare the old and new process instances.
   - Will process instances started on **App Version 2** flow to **Activity 4**?
   - Will process instances started on **App Version 1** flow to **Activity 4**?
   - Which process instance is showing the new form design,
     why and why not?

Joget

Exercise on Version Control

1. Create a new Joget Application with a **Process, Form and UI**. (That's v1)
2. Run the Application, create a new process Instance.
3. Update the Process Design and observe the changes.
4. Increase the Application Version by creating a new version. (From v1 to v2)
5. Modify the Process and Form (in v2), create new process instance and observe the changes.
6. Compare the old and new process instances.

Joget

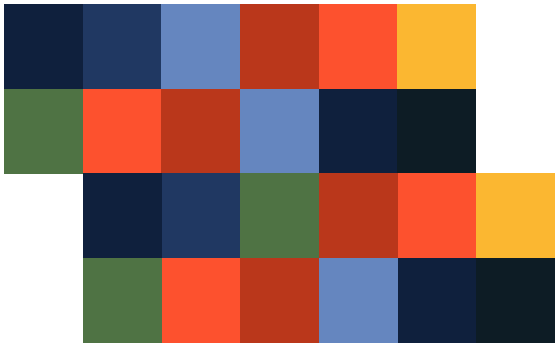
Lessons Learnt From The Exercise

- Changing process design of App Version 2 did NOT affect running instance of App Version 1.
- Each App Version would only contain the one (and latest) process design.
- Running instances of App Version 1 will show Forms of App Version 1, likewise, for Version 2, regardless of current Published App Version.
- Forms will be shown based on Published App Version except for those tied to running instances.

Joget

Chapter Review

- Understand how to manage Application Version and its impact.

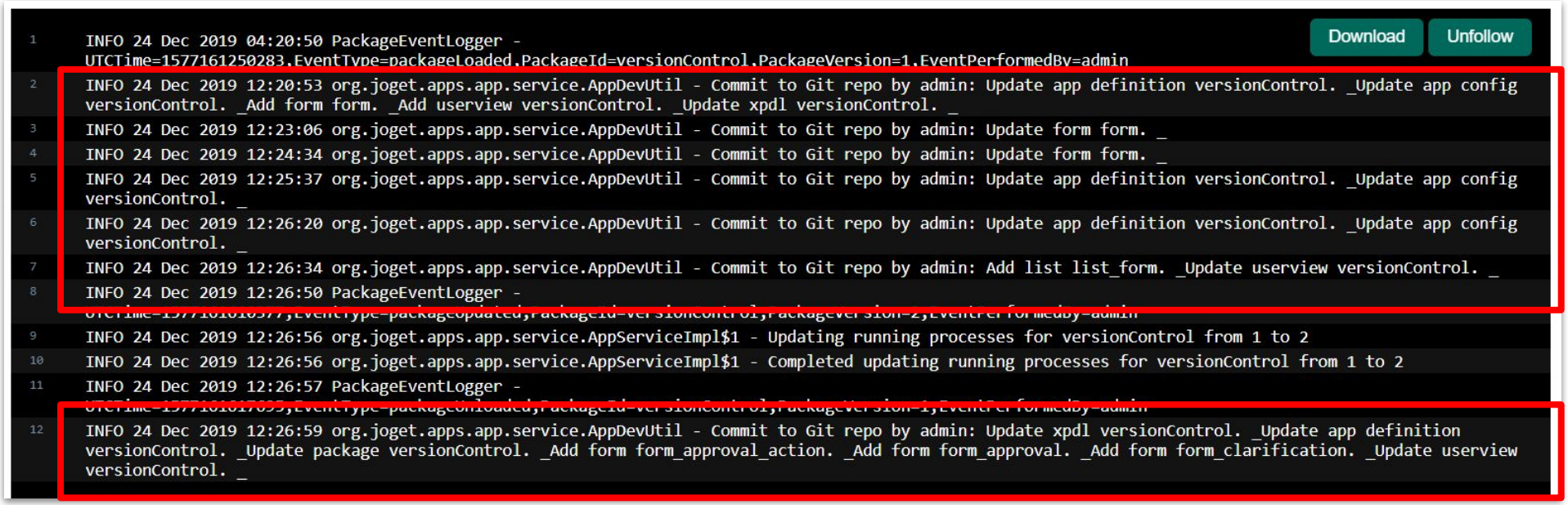


Chapter 4

Git Version Control

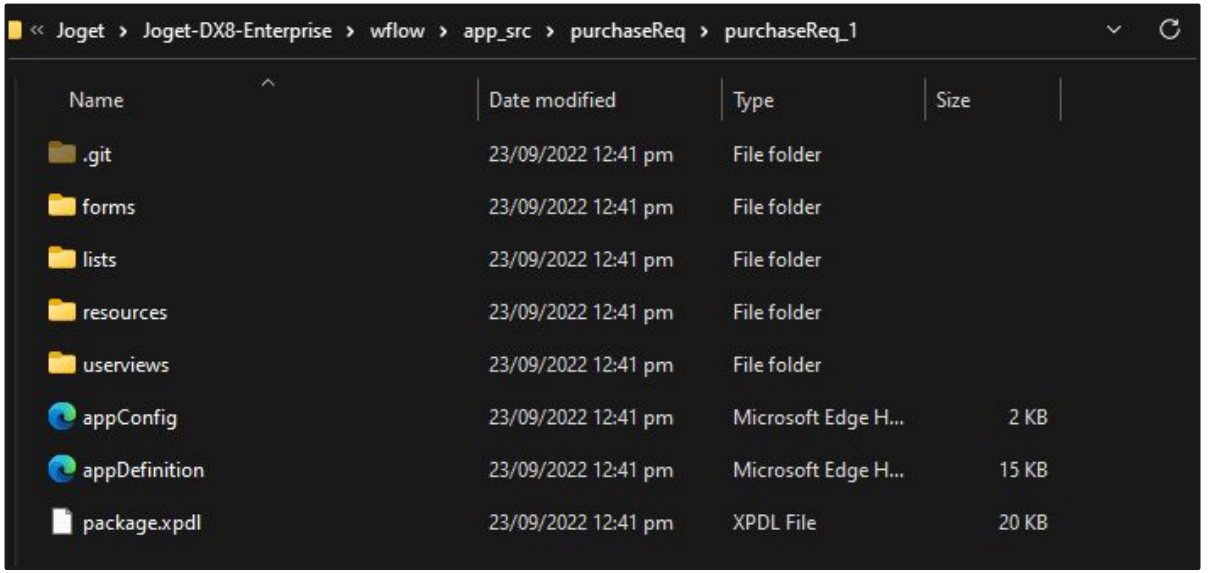
Built-in Git

- Any changes within the app will be committed into Git



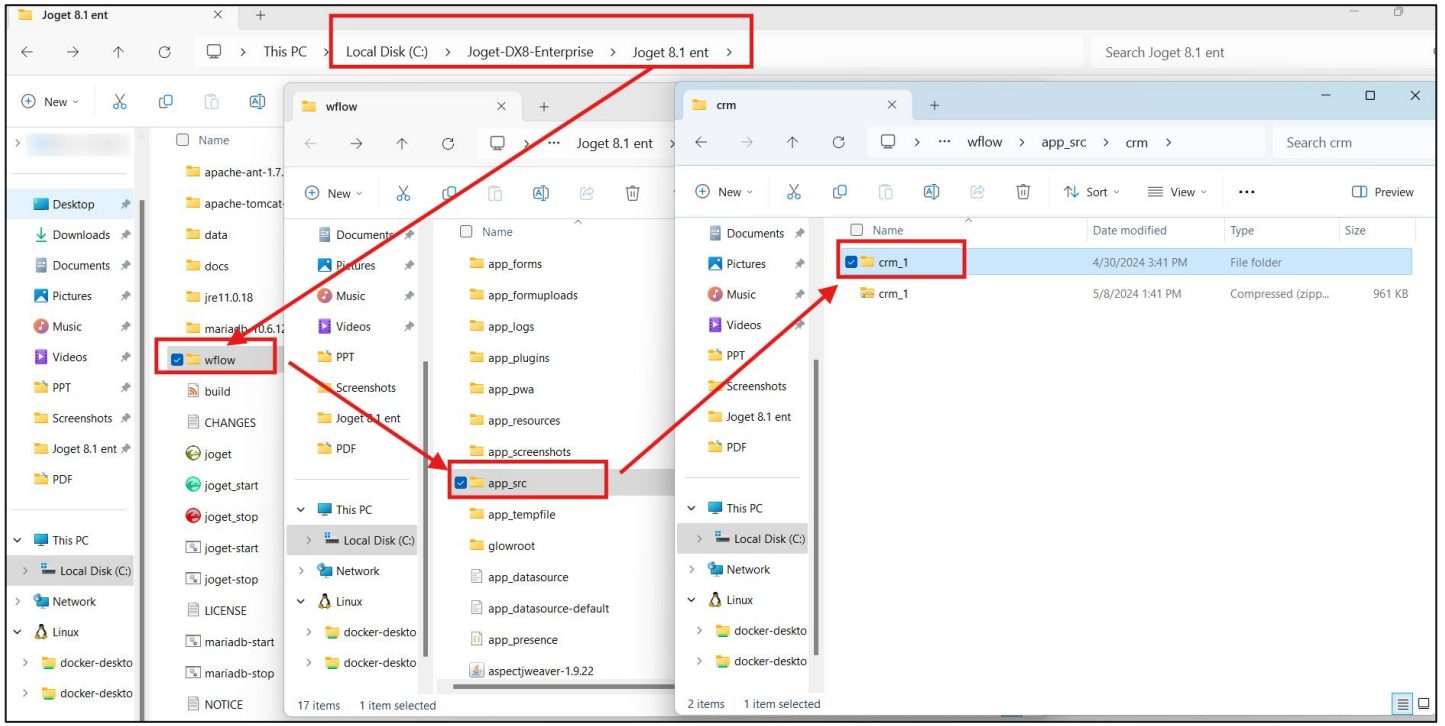
How To Access the Built-In Git?

- To access into the built-in Git, the local repository is in **<Joget installation folder>\wflow\app_src\<App ID>\<App ID_version number>**



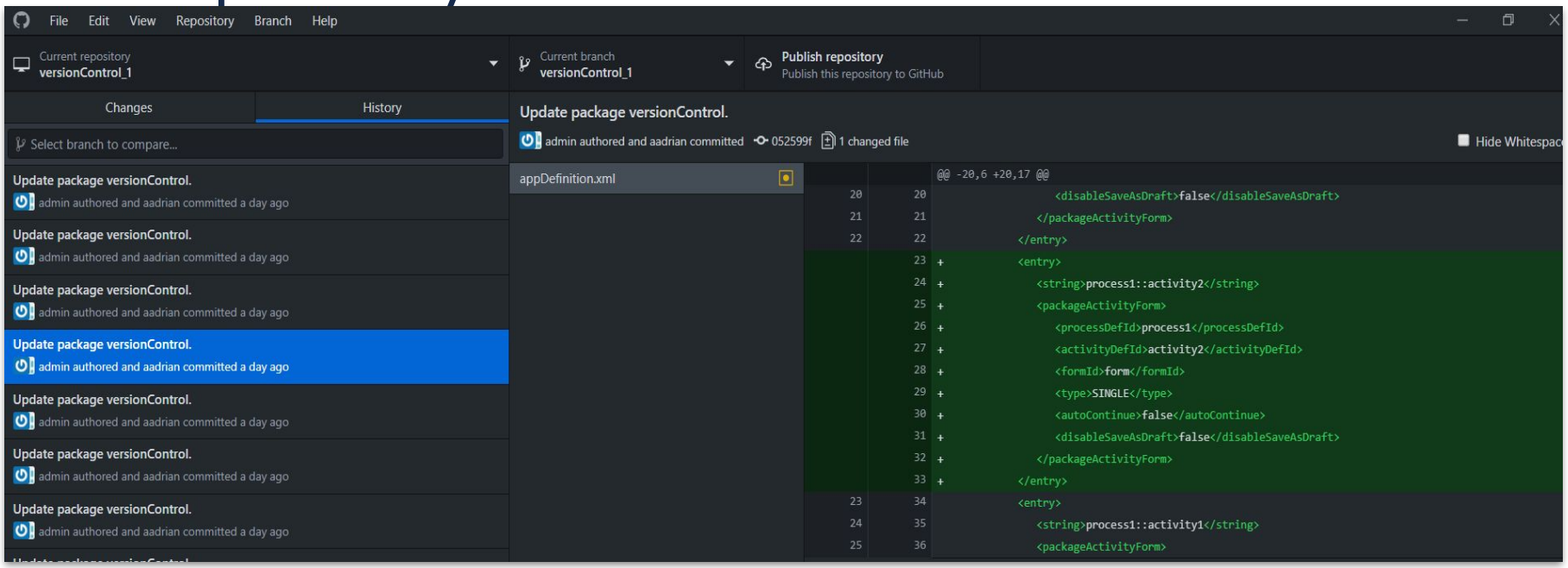
Import App from Zipped app_src Files

- **<App ID_version number>** in **app_src** file can be zipped and imported
- Zip one of the app's version folder eg: **crm_1**
- Import the zip file.
- Once imported, **Application Version will increase by 1.**



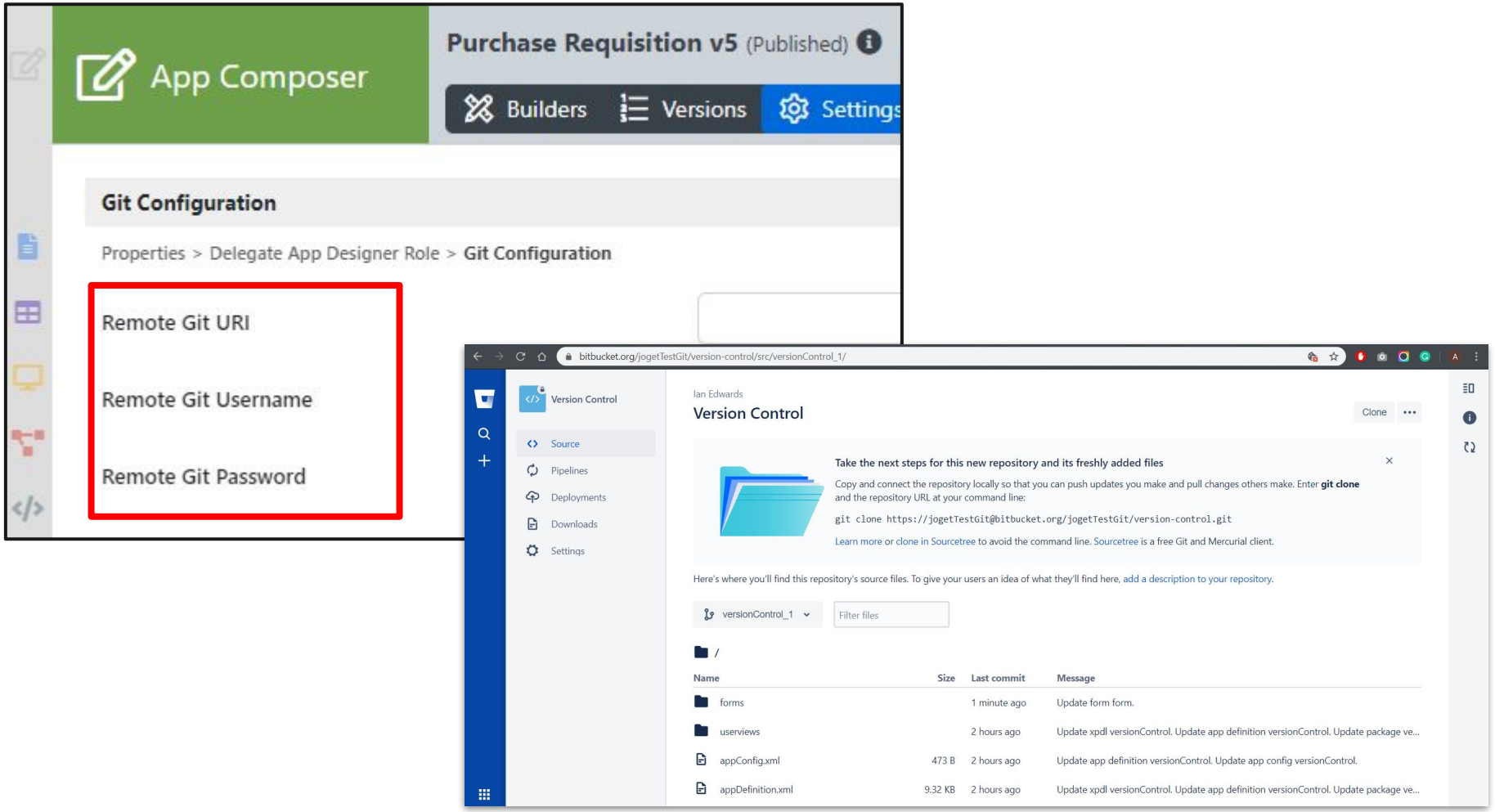
How To Access the Built-In Git?

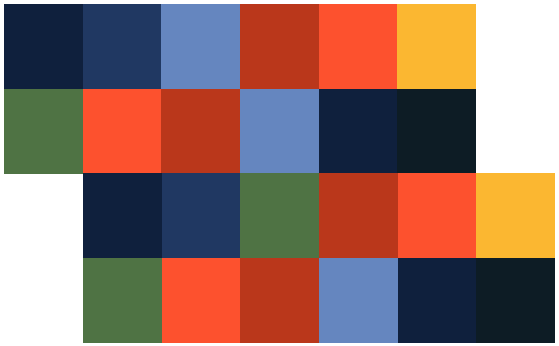
- Sample of using GitHub Desktop to access the Git Repository



Remote Git

- You can also integrate to external Git



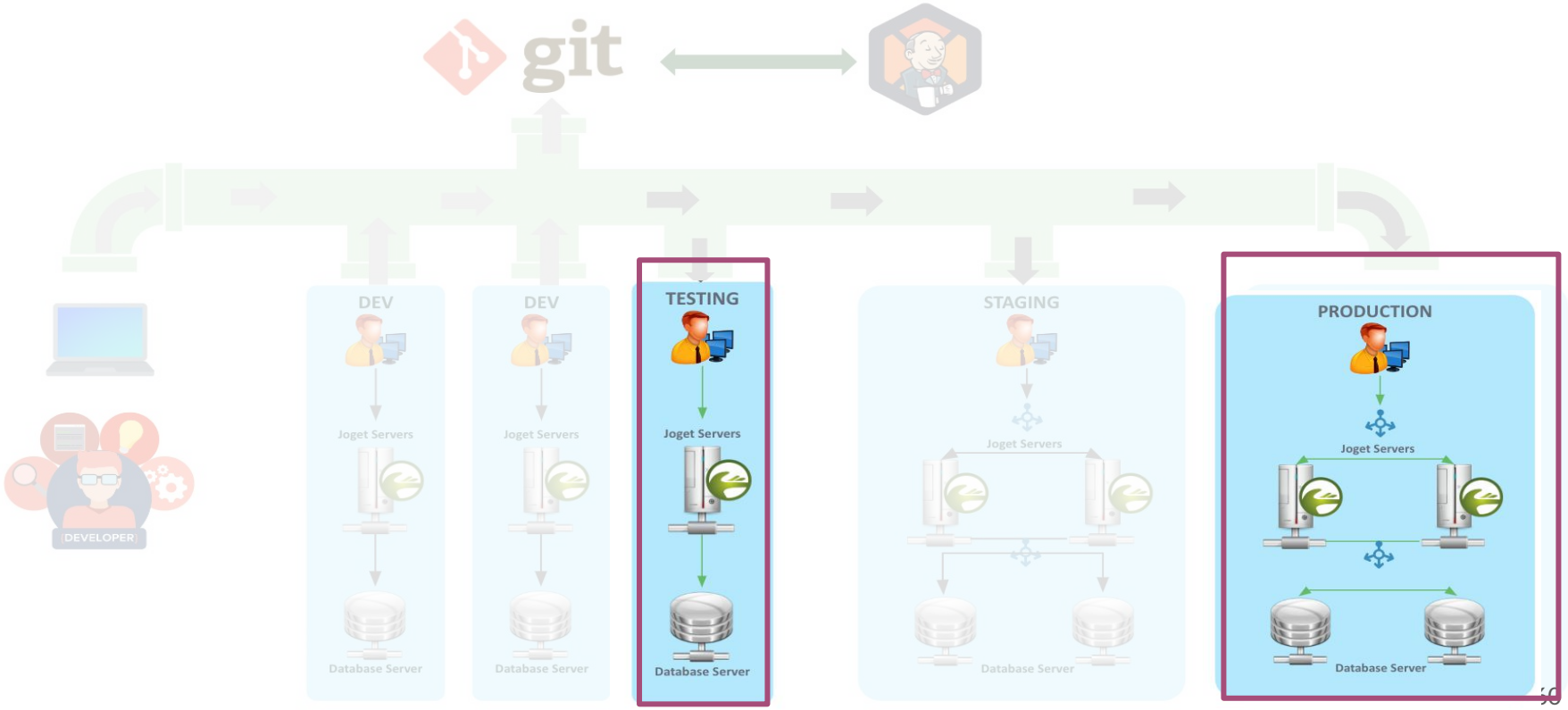


Chapter 5

CI / CD

CI / CD using GIT and Joget

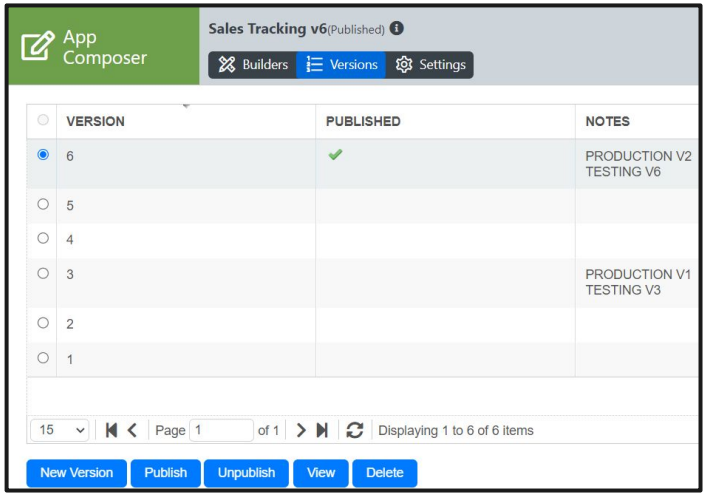
- In this section we will discuss how to manage of a Joget app across 2 different servers.

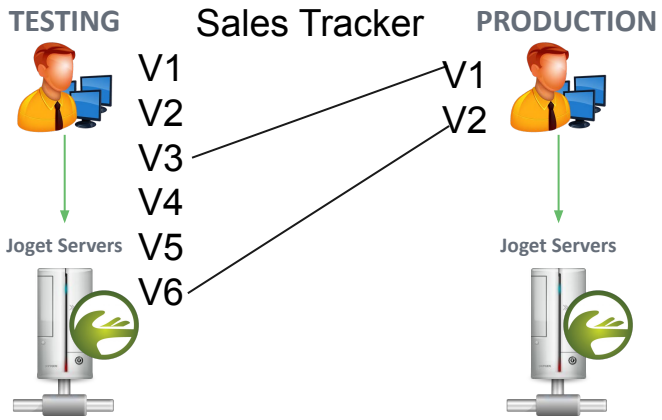


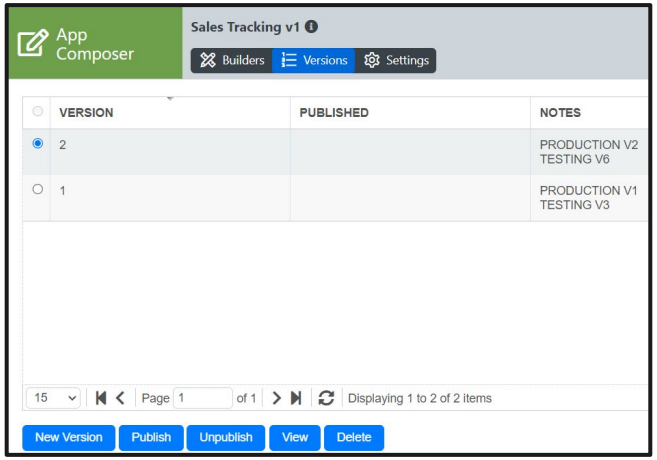
CI / CD using GIT and Joget

In this first scenario, V3 of the app in the Testing server has been exported as V1 in the Production server, and V6 has been exported as V2.

The question here how do we bring changes made in testing V6 to Production V2?







CI / CD using GIT and Joget – Option 1

- There are 2 solution to previous question
- The first is by Copying the app from Testing V6 and merge into Production V3.

Joget

CI / CD using GIT and Joget - Option 1

- Export Testing V6 and Import as Production V3
- If there is any running processes in Production V2, decision will need to made whether to MIGRATE to Production V3.

  To migrate, execute

```
AppService.updateRunningProcesses(packageId, oldProcessVersion,
newProcessVersion);
```

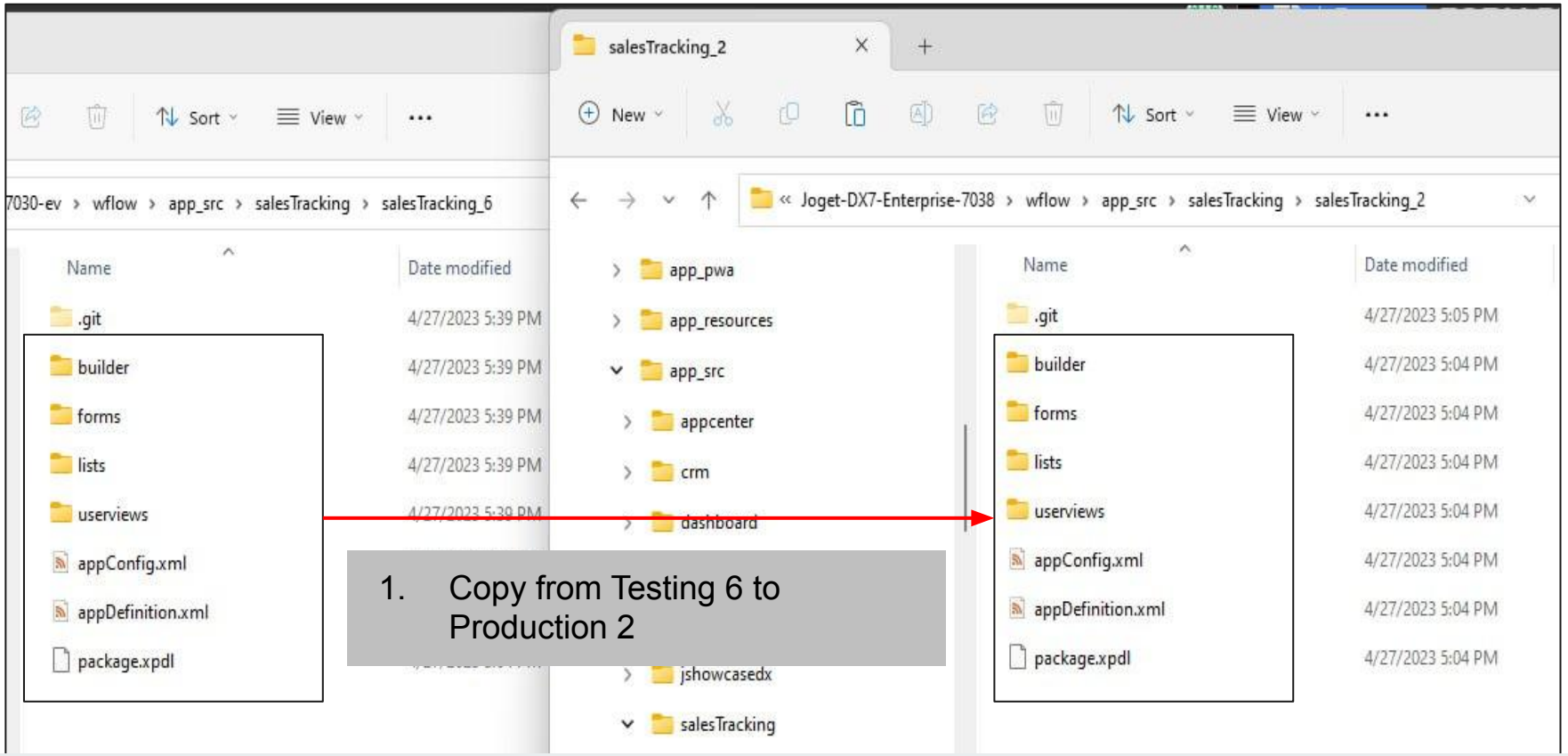
Joget

CI / CD using GIT and Joget – Option 2

- In the second solution, start by copying the app from Testing V6 and merge into Production V2.

CI / CD using GIT and Joget – Option 2

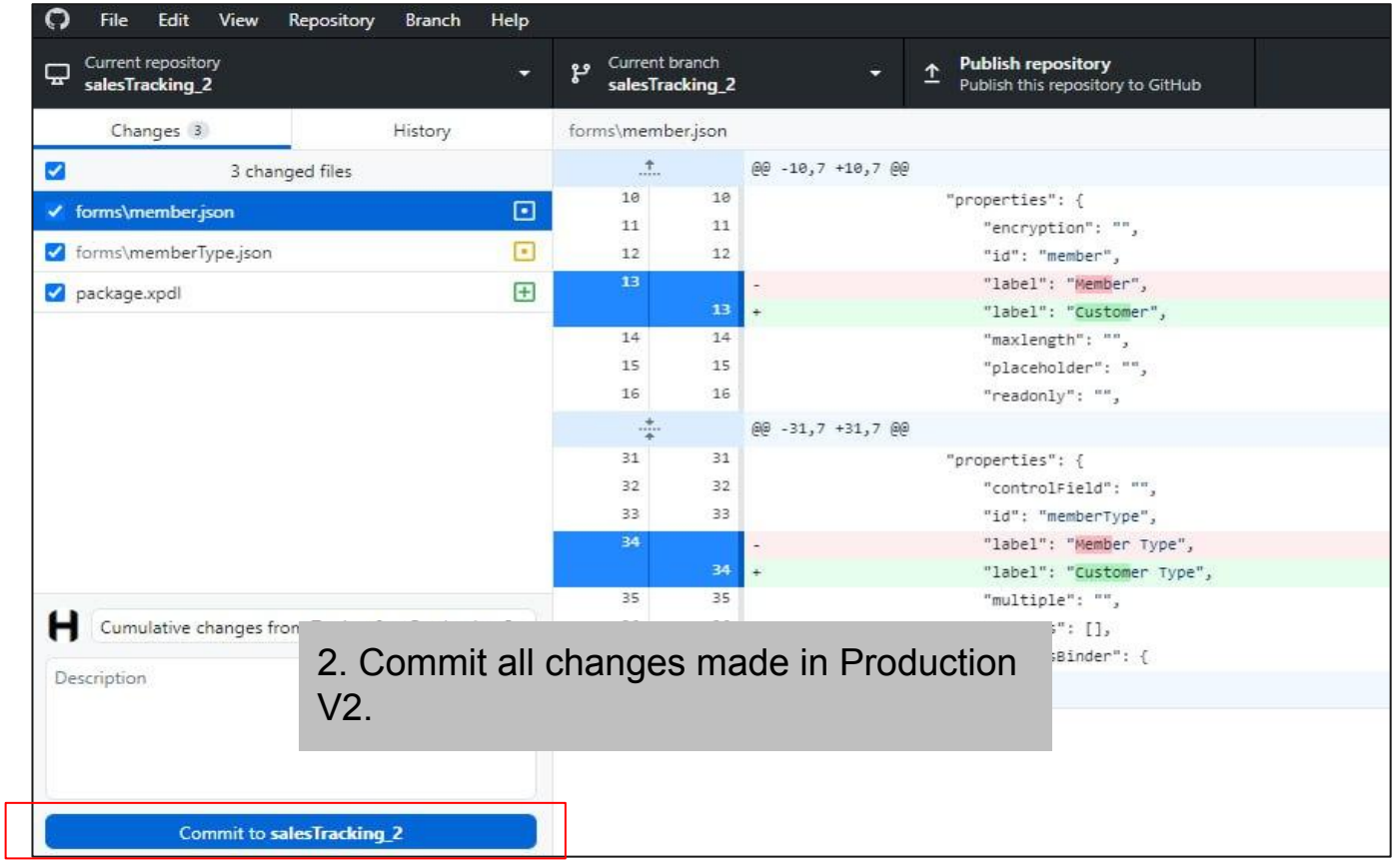
- **Copy** from **Testing V6** and **merge** into **Production V2**.



Note: appConfig.xml contains environment specific settings (dev, test, prod) such as counters, smtp settings that you may want to preserve.

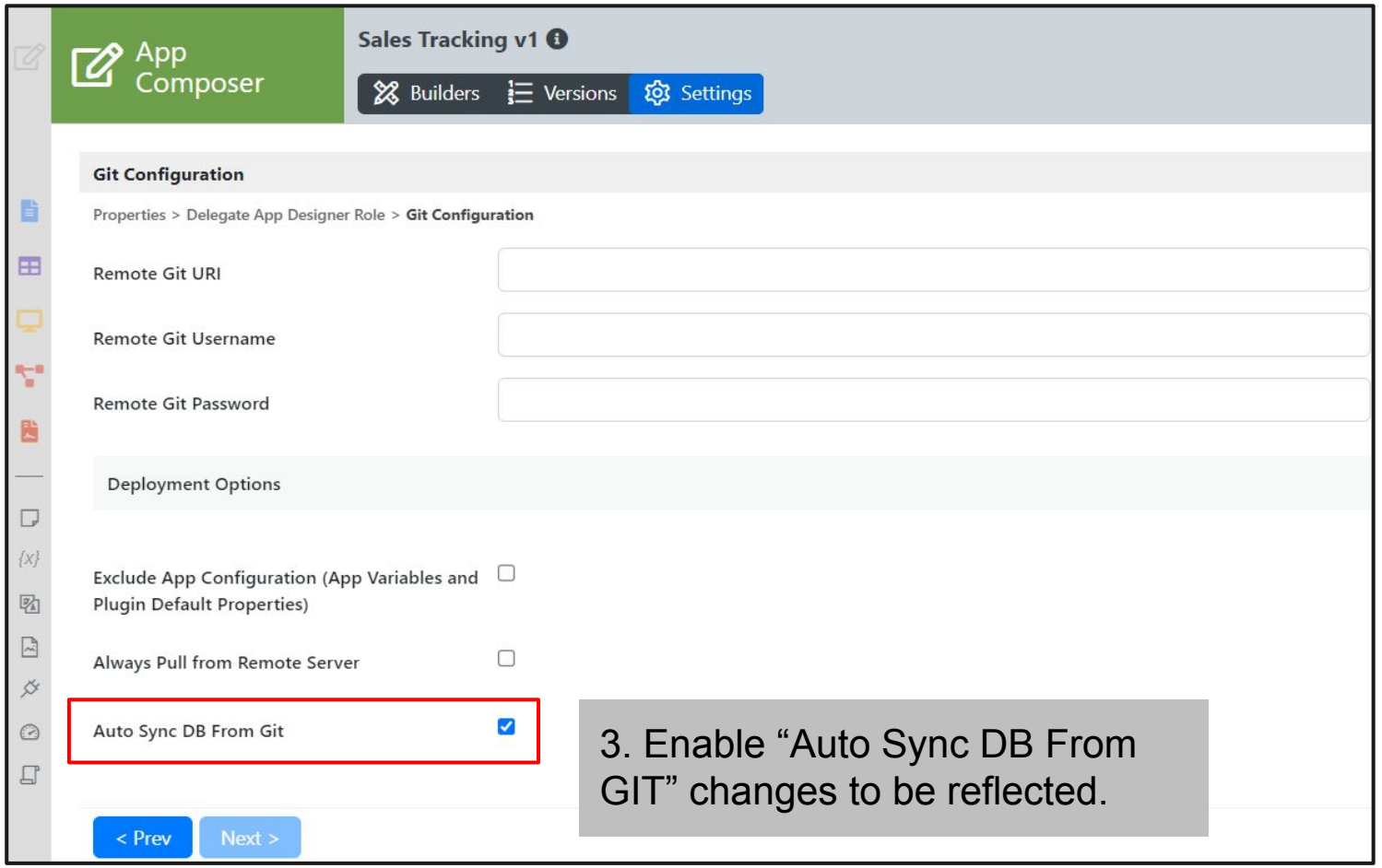
CI / CD using GIT and Joget - Option 2

- **Copy** from **Testing V6** and **merge** into **Production V2**.



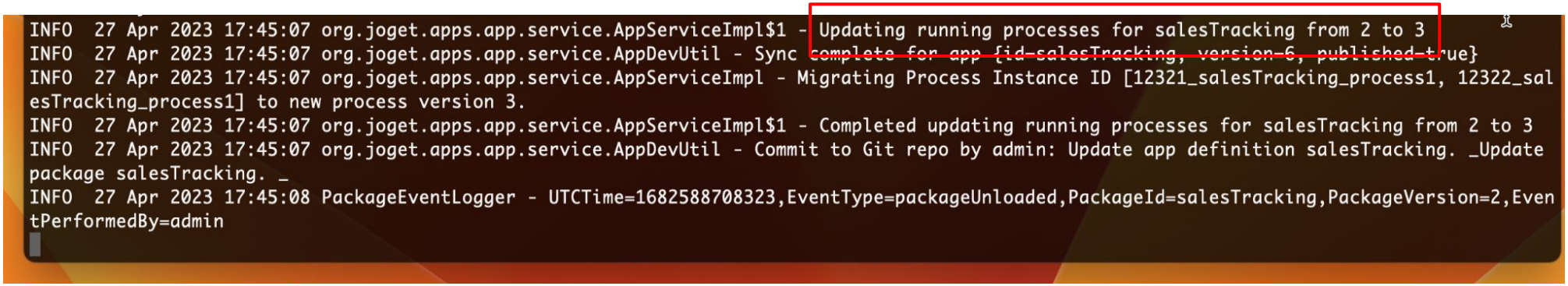
CI / CD using GIT and Joget – Option 2

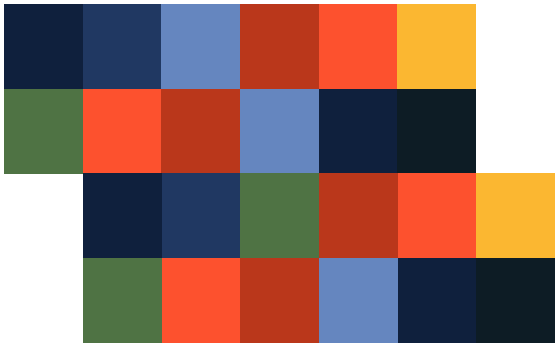
- **Copy** from **Testing V6** and **merge** into **Production V2**.



CI / CD using GIT and Joget - Option 2

- **Copy** from **Testing V6** and **merge** into **Production V2**.
- If there is any process design change, any running processes in **Production V2** will be **automatically** migrated to the latest process design.





Chapter 5
Collaborative Development

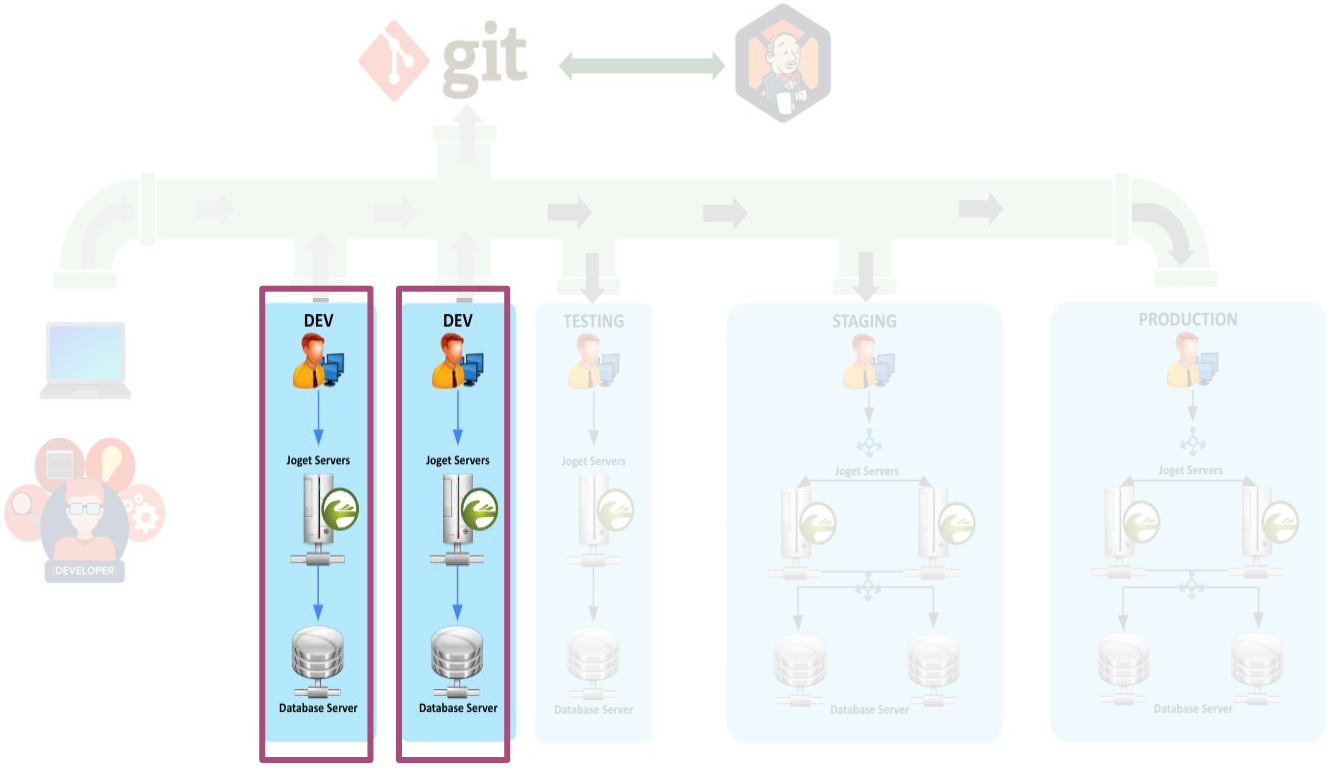
Collaborative Development on Joget

There are main 2 methods of Collaborative Development on Joget:

- The first option being a common GIT repository that app designers point their app to.
- The second option is that multiple app designers work on the same Joget server.

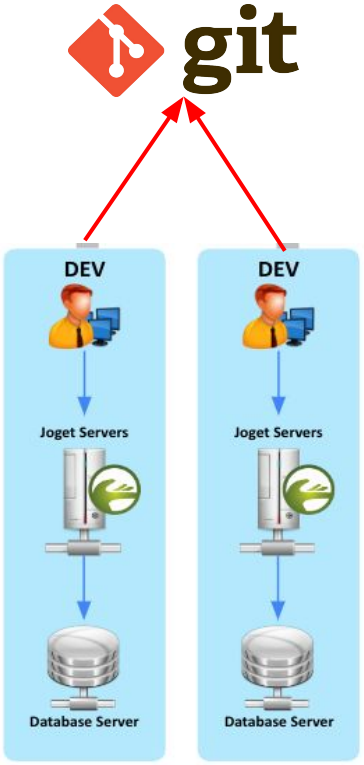
Collaborative Development on Joget – Option 1

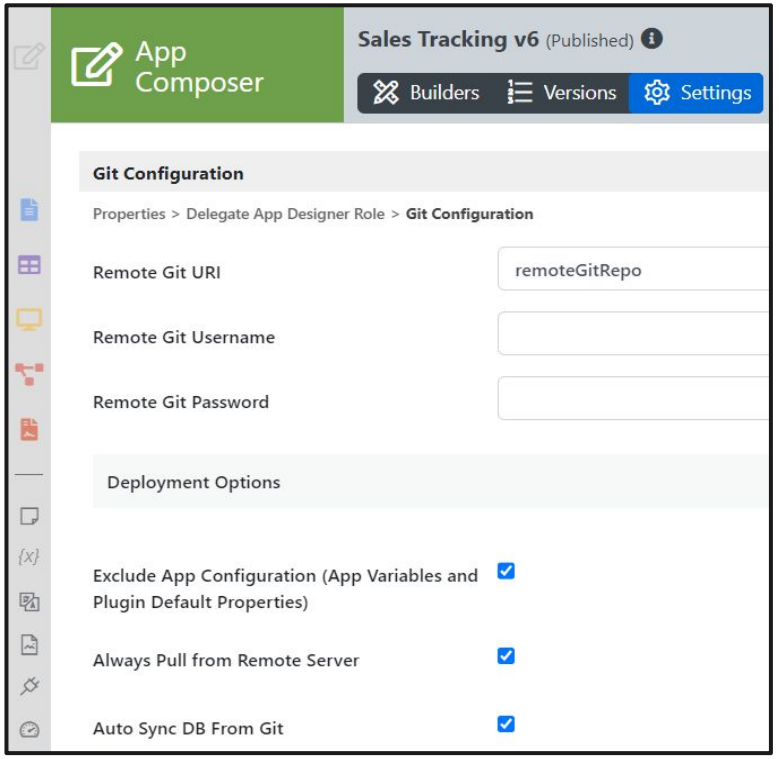
Two Designers (A & B) run Joget on their local machines and work on the same app.



Collaborative Development on Joget – Option 1

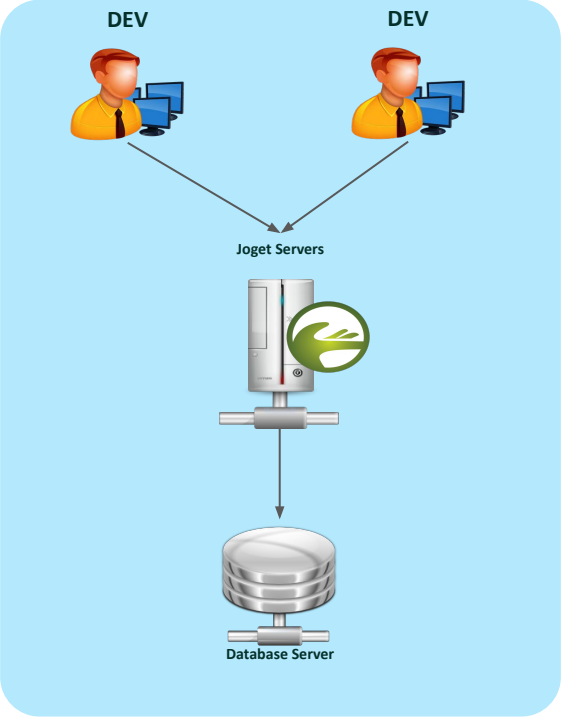
- Both Designers will point their app to a common git repository and any changes made will synced to this remote repository.





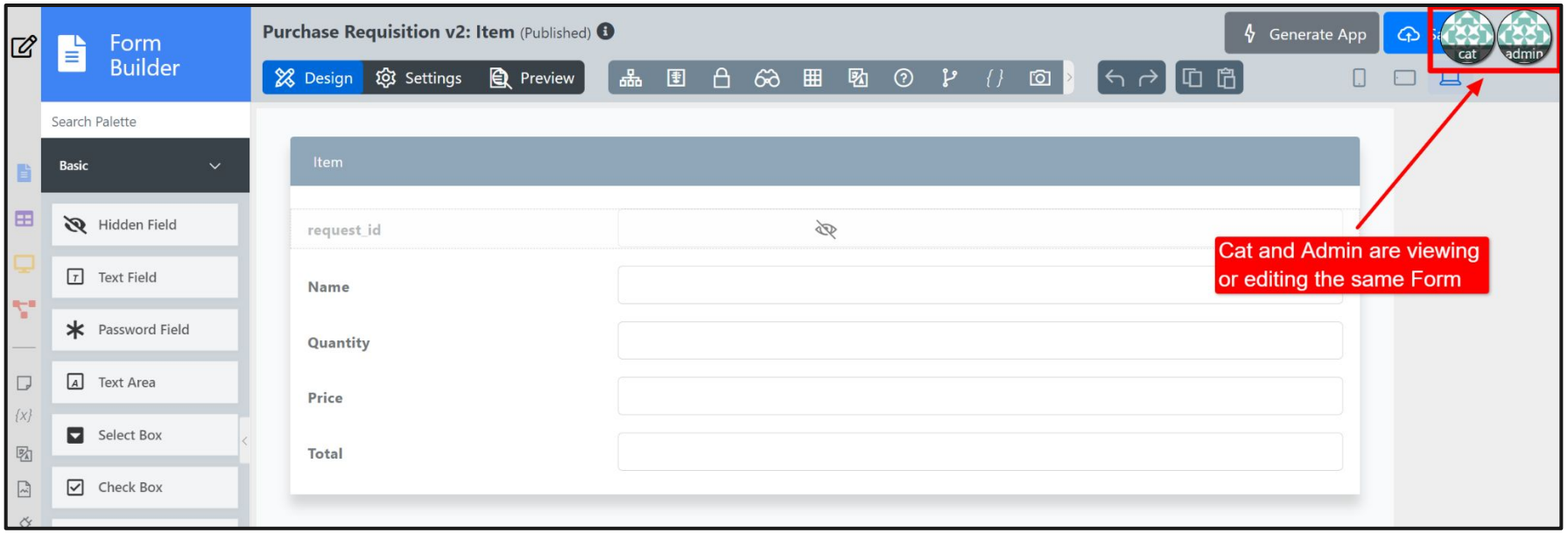
Collaborative Development on Joget – Option 2

In this solutions, both designers shall work on the same Joget server.



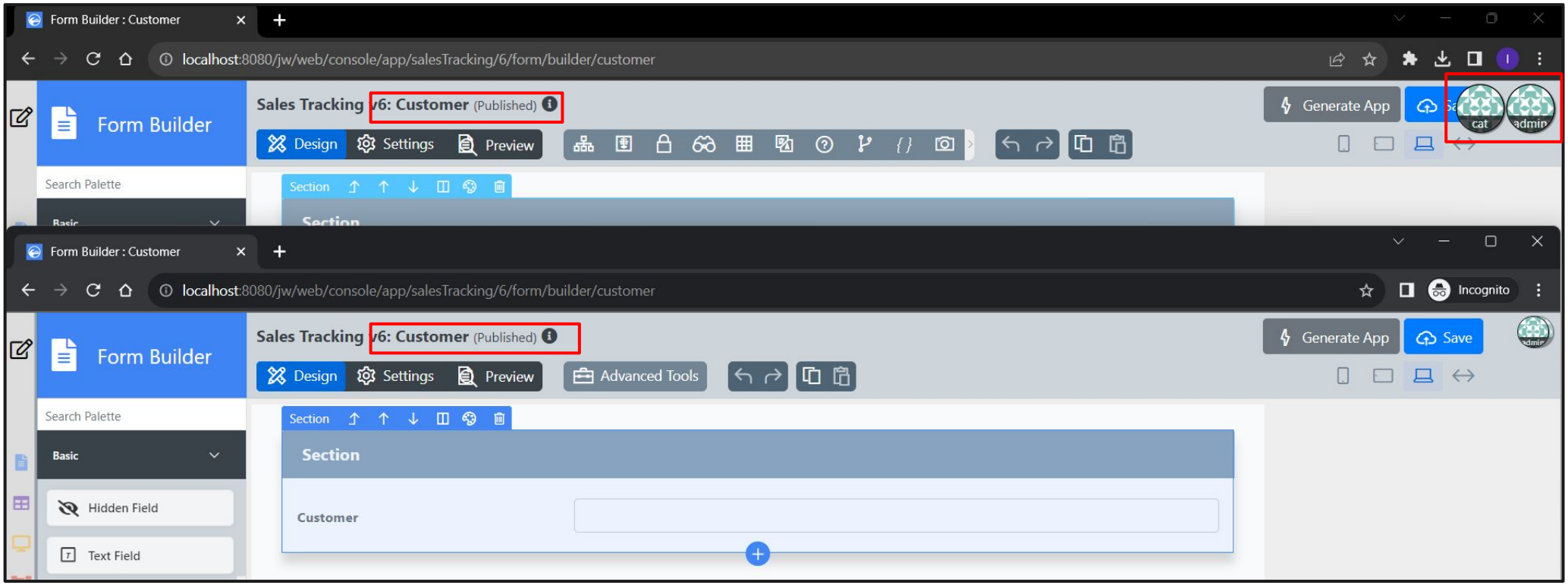
Presence Indicator

- Real-time presence will check to see if someone else is viewing or editing a Joget Component while you have it open - Helps avoid conflicts and promote collaboration



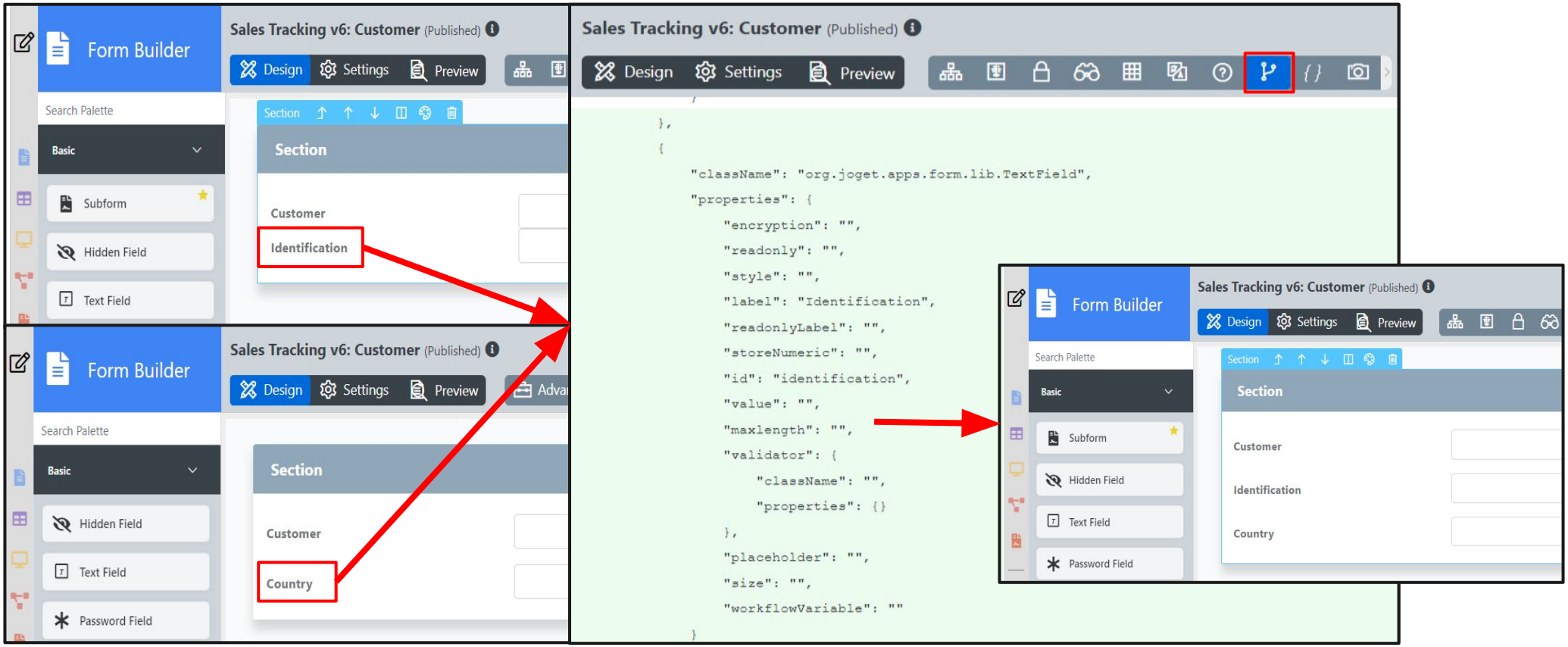
Collaborative Development on Joget – Option 2

- Designers work on the same entity would be indicated on presence indicator.



Collaborative Development on Joget – Option 2

- Changes made on the same entity (i.e. form) will be merged.



Joget

Module Review

1. Introduction to Version Control
2. Process Version Control
3. Application Version Control
4. Git Version Control
5. CI/CD
6. Collaborative Development

Joget

Recommended Further Learning

- http://dev.joget.org/community/display/DX8/Version

Joget

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