



Joget DX

Version Control

 <http://facebook.com/jogetworkflow>

 <http://twitter.com/jogetworkflow>

Prerequisites

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

Content

1. Introduction to Version Control
2. Process Version Control
3. Application Version Control
4. Git Version Control



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.

Version Control

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

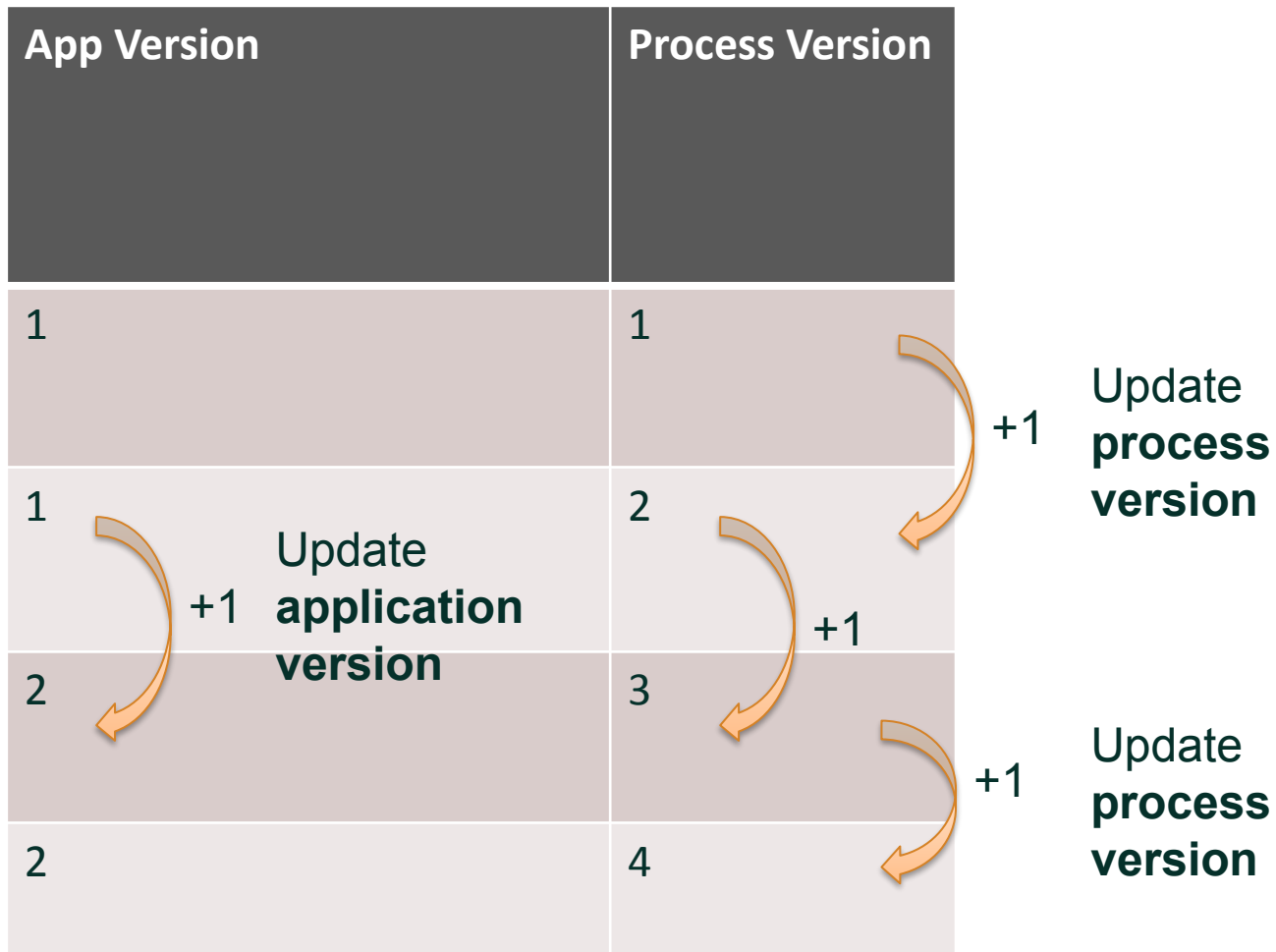
Version Control

- 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, Userviews of the current version to the new version.
 - Includes all the Processes, Forms, Datalists, and Userviews.
 - Does **NOT** affect any running process instances.

Version Control

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

Version Control



Version Control

App Version	Process Version	Migrate existing running instances of the current App version to new Process version
1	1	
1	2	<ul style="list-style-type: none"> • Yes (All that are created under current App version)
2	3	<ul style="list-style-type: none"> • No
2	4	<ul style="list-style-type: none"> • 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**

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.

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.

Version Control

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

Version Control

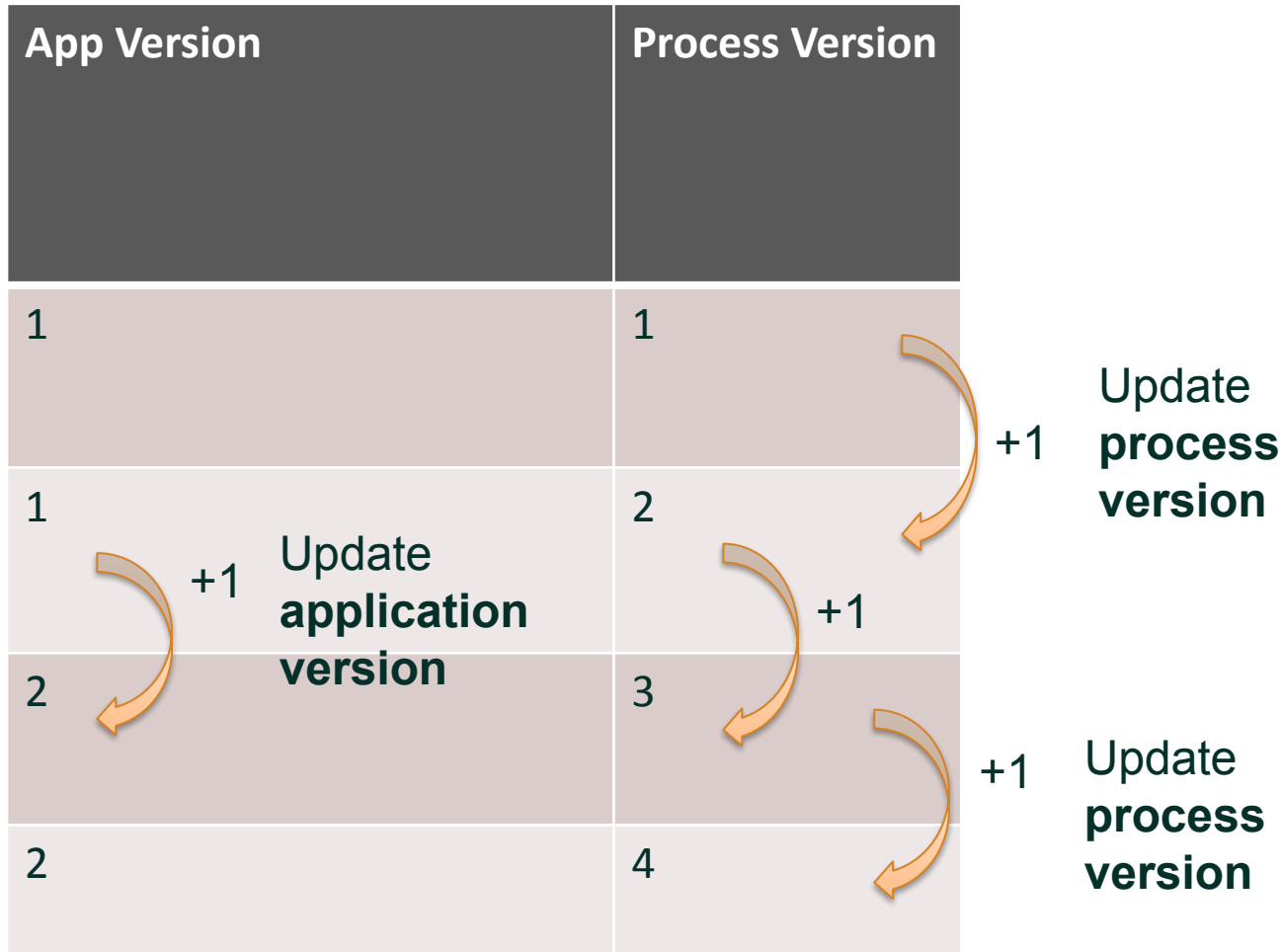
App Version	Process Version
1	1
1	2
2	3
2	4

+1 Update process version

+1 Update application version

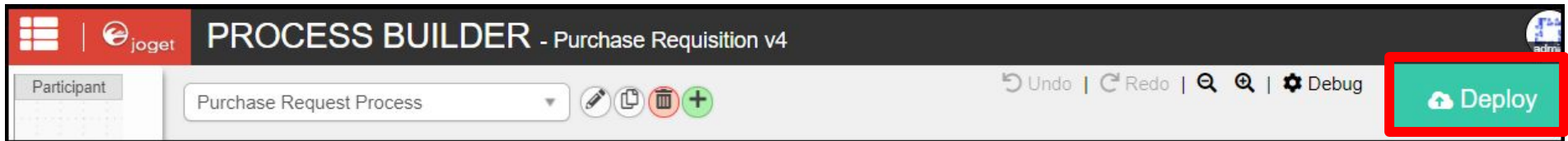
+1

+1 Update process version

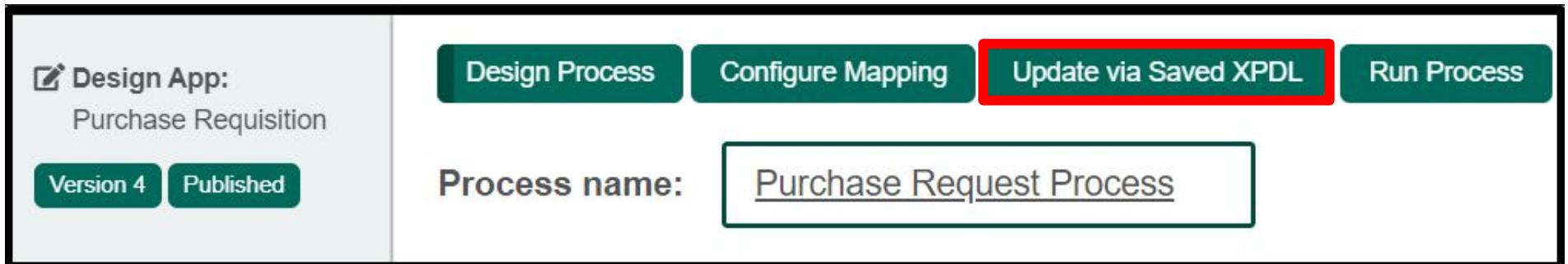


How to Update Process Version?

- Upon deployment from the Workflow Designer.

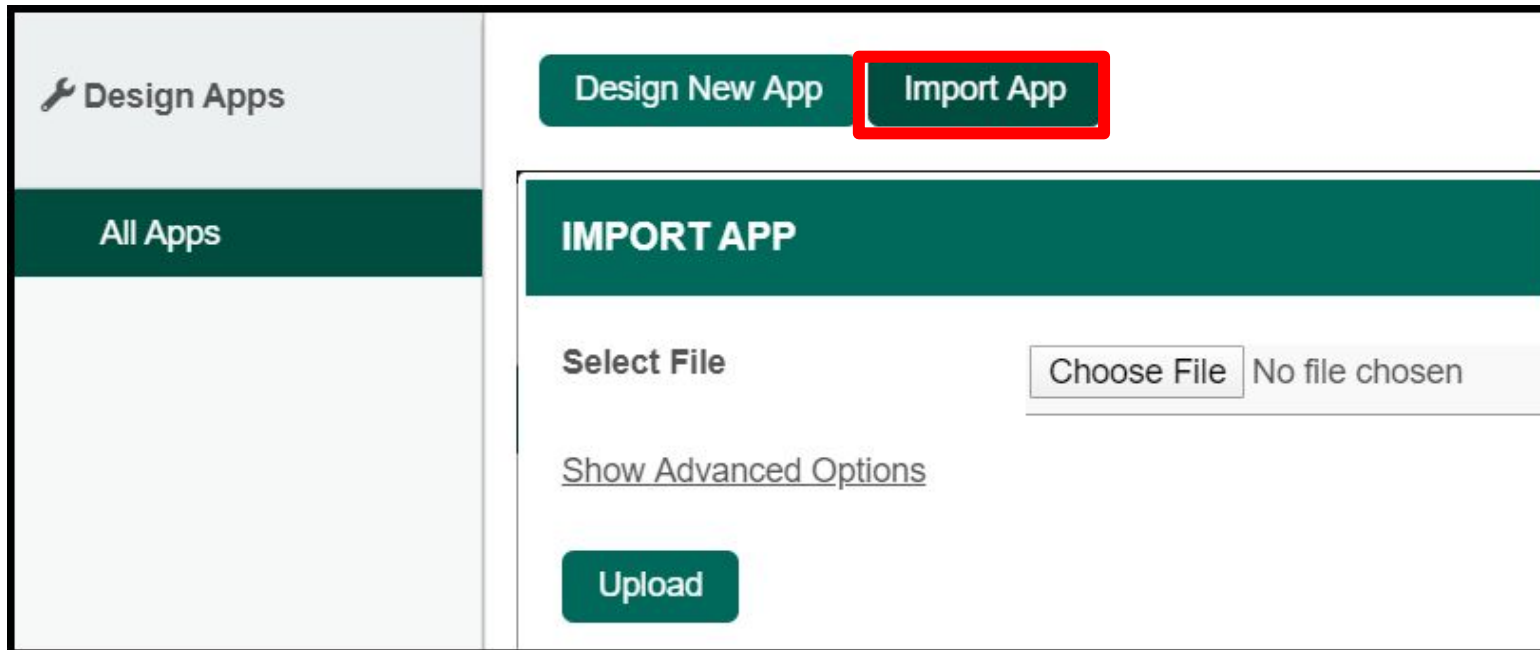


- Update via Saved XPDL from the application designer.



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

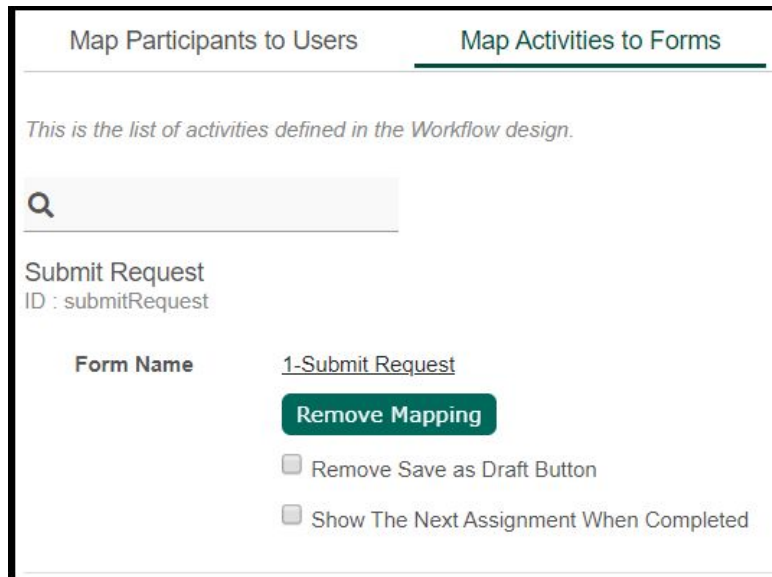
- On the event of process update, process instances that are still running on the current process version will be migrated/updated to the latest process version (in the same app version only).

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/DX7/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.



Map Participants to Users Map Activities to Forms

This is the list of activities defined in the Workflow design.

Q

Submit Request
ID : submitRequest

Form Name	<u>1-Submit Request</u>
-----------	-------------------------

[Remove Mapping](#)

Remove Save as Draft Button

Show The Next Assignment When Completed

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.

Chapter Review

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



Chapter 3

Application Version Control

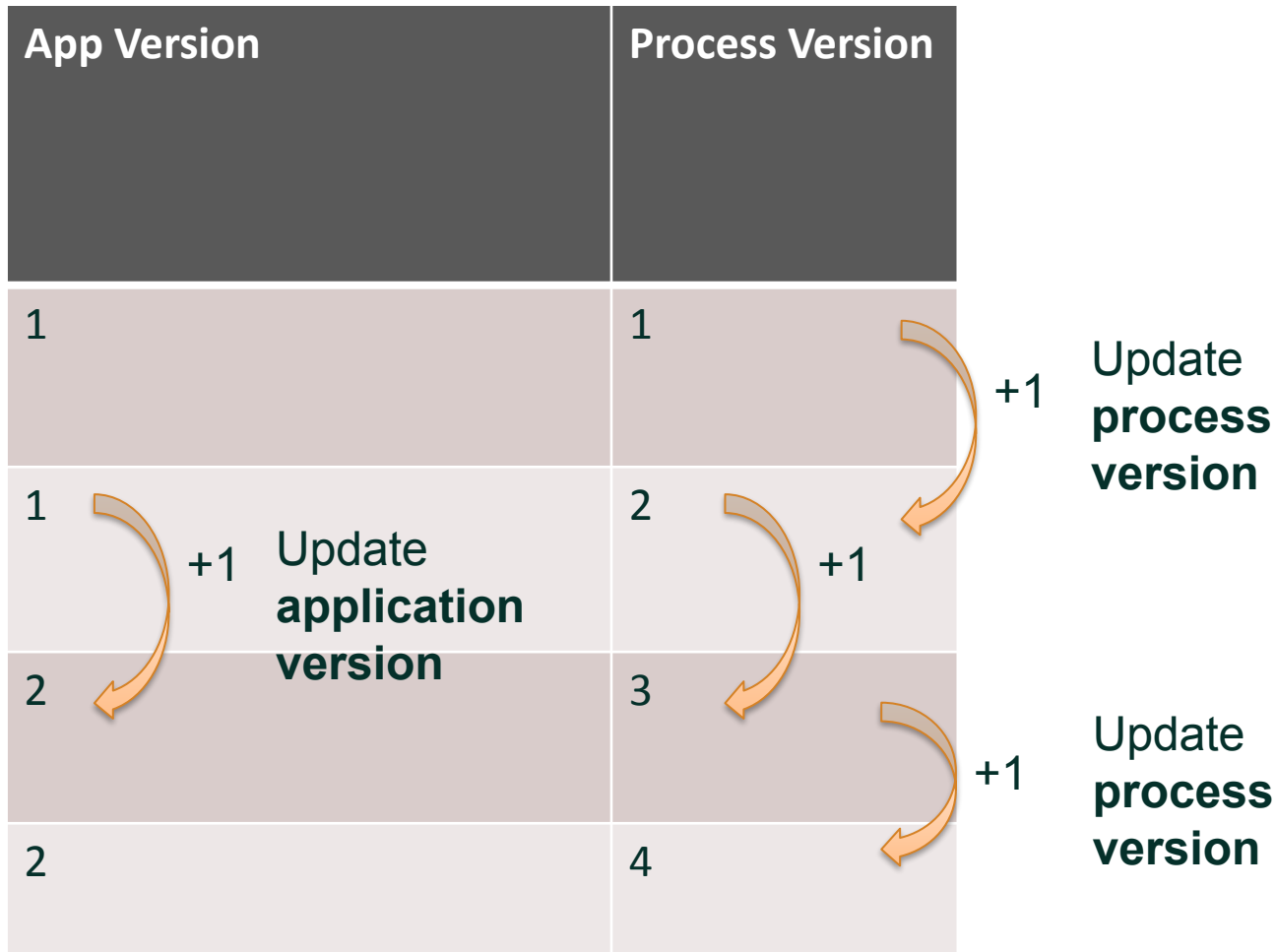
Application Version

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

Version Control

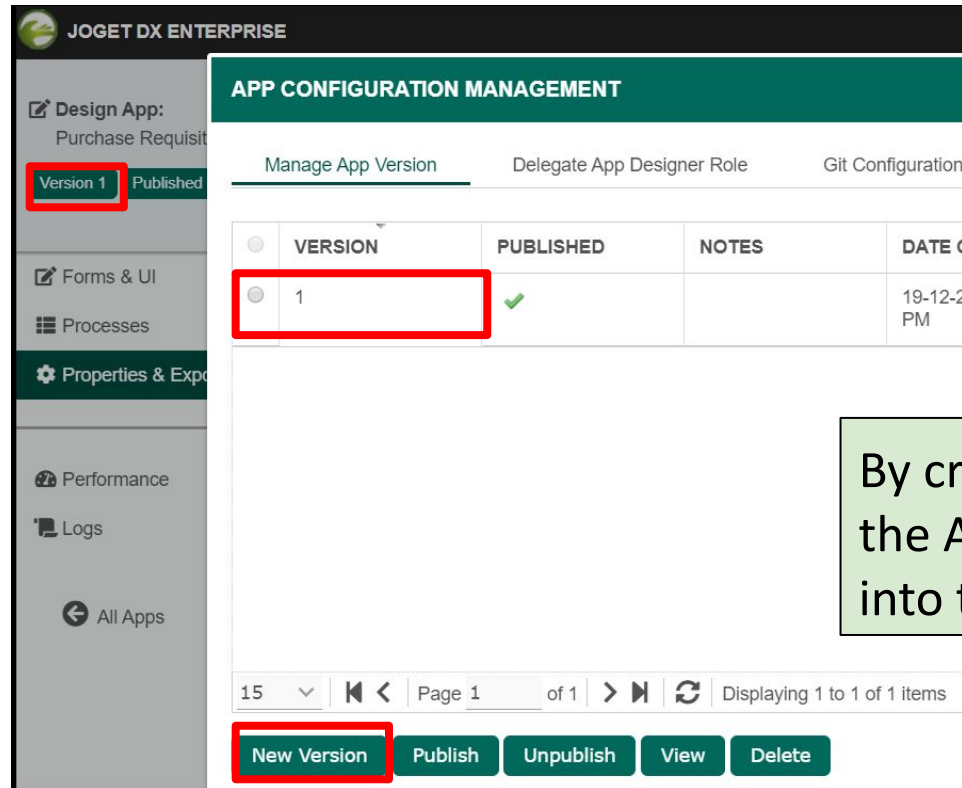
Action / Components	Update Process Version	Update Application Version
Process	✓	✓
Form		✓
List		✓
Userview		✓
Application Settings		✓

Version Control



How To Update Application Version?

1. App Control Panel > Versions > Select version > New Version



The screenshot shows the 'APP CONFIGURATION MANAGEMENT' interface in Joget DX Enterprise. The 'Manage App Version' tab is selected. A table displays the current application version:

VERSION	PUBLISHED	NOTES	DATE CR
1	✓		19-12-20 PM

At the bottom of the interface, the 'New Version' button is highlighted in red.

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

Online Reference:

<https://dev.joget.org/community/display/DX7/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.

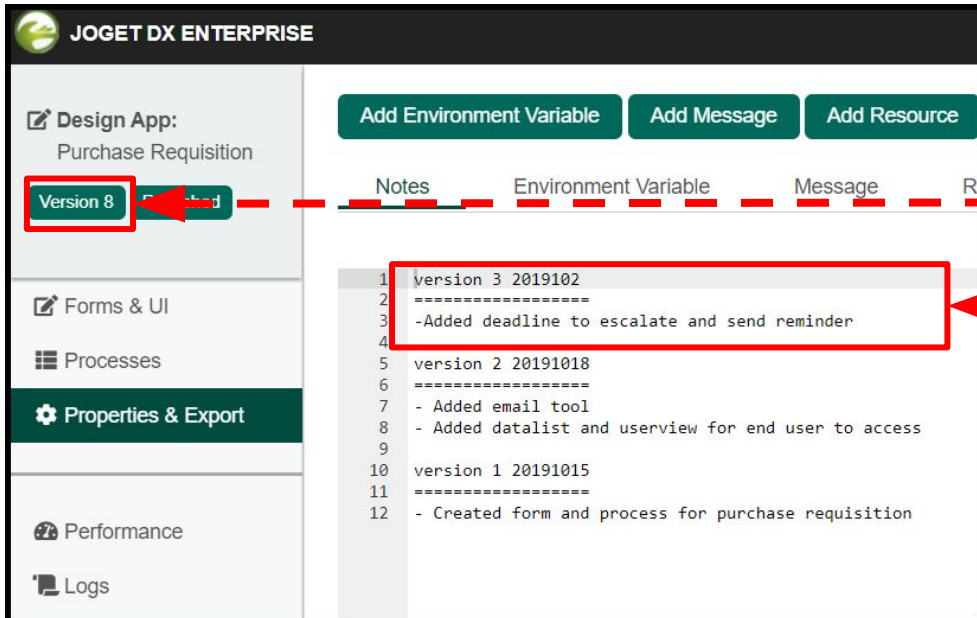
What does this means?

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

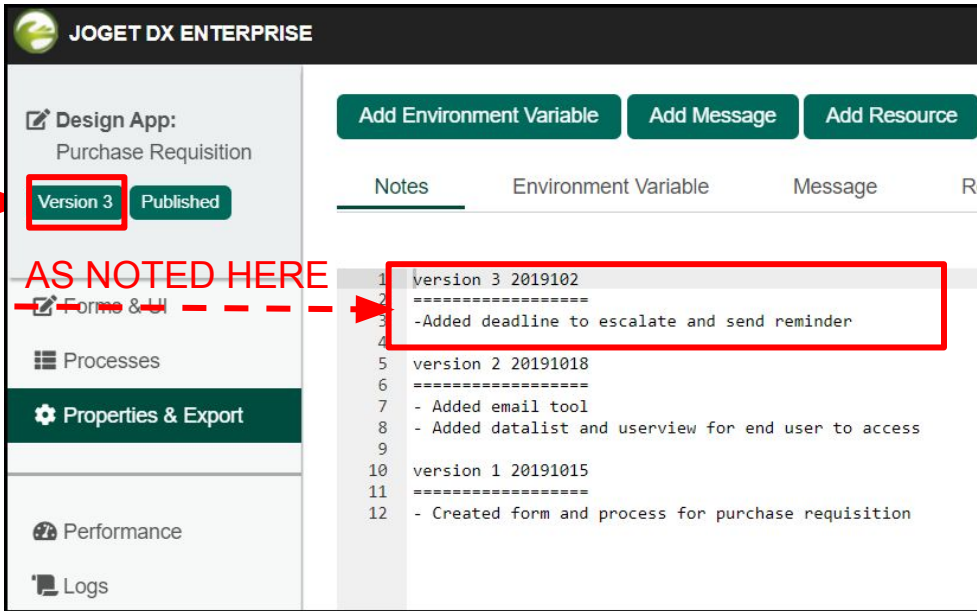
- When you are dealing with the same app across different Joget servers, you may end up with different app version in each server but with exact same app design.

Development Server



The screenshot shows the Joget DX Enterprise interface for a 'Purchase Requisition' app. On the left sidebar, the 'Version 8' button is highlighted with a red box. A red dashed arrow points from this button to the 'Version 3' button on the Production Server screenshot. In the main content area, a list of versions is shown, with the entry for 'version 3 2019102' highlighted by a red box. This entry includes the note: '-Added deadline to escalate and send reminder'. A red dashed arrow points from this note to the 'AS NOTED HERE' text on the Production Server screenshot.

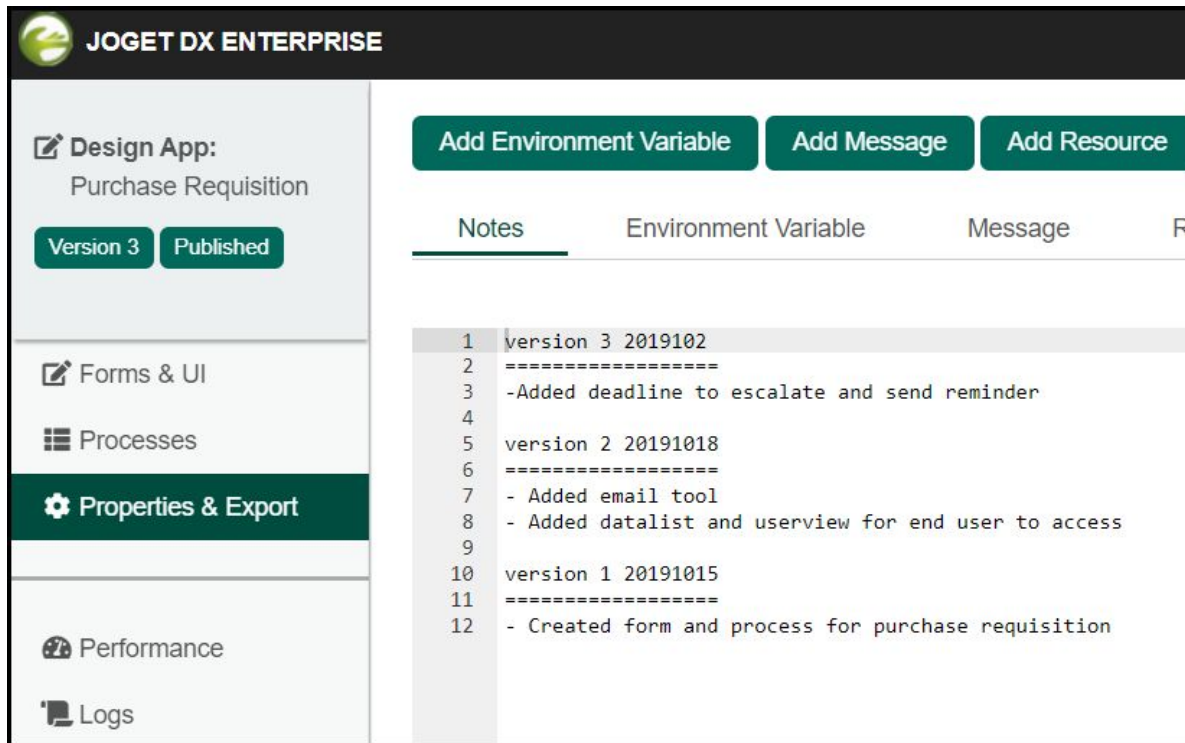
Production Server



The screenshot shows the Joget DX Enterprise interface for the same 'Purchase Requisition' app on a production server. The 'Version 3' button is highlighted with a red box. A red dashed arrow points from the 'Version 8' button on the Development Server to this button. In the main content area, the entry for 'version 3 2019102' is highlighted by a red box, with the note: '-Added deadline to escalate and send reminder'. The text 'AS NOTED HERE' is written in red above this entry. A red dashed arrow points from this text to the corresponding note on the Development Server screenshot.

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 app’s properties.



JOGET DX ENTERPRISE

Design App:
Purchase Requisition

Version 3 Published

Forms & UI

Processes

Properties & Export

Performance

Logs

Add Environment Variable Add Message Add Resource

Notes Environment Variable Message Re

```

1 | version 3 2019102
2 | =====
3 | -Added deadline to escalate and send reminder
4 |
5 | version 2 20191018
6 | =====
7 | - Added email tool
8 | - Added datalist and userview for end user to access
9 |
10 | version 1 20191015
11 | =====
12 | - Created form and process for purchase requisition
  
```

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.

APP CONFIGURATION MANAGEMENT						
Manage App Version		Delegate App Designer Role		Git Configuration		
VERSION	PUBLISHED	NOTES	DATE CREATED	DATE MODIFIED		
4		version 3 2019102 =====	22-12-2019 09:26 PM	23-12-2019 05:26 AM		
3	✓	version 3 2019102 =====	22-12-2019 09:25 PM	23-12-2019 05:34 AM		
2		version 2 20191018 =====	22-12-2019 09:25 PM	23-12-2019 05:33 AM		
1		version 1 20191015 =====	19-12-2019 03:38 PM	23-12-2019 05:33 AM		

15 | Page 1 of 1 | Displaying 1 to 4 of 4 items

[New Version](#)
[Publish](#)
[Unpublish](#)
[View](#)
[Delete](#)

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.

Important Note

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

Exercise on Version Control

1. Create a new Joget Application with a **Process, Form and Userview**. (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

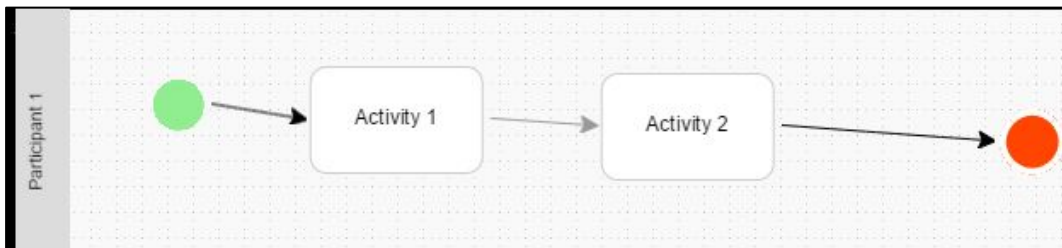
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Exercise on Version Control

1. Create a new Joget Application with a **Process, Form and Userview**. (That's v1)

Example:

A process flow with 2 activities with both of them mapped to the same form that contains 2 text fields.



Sample

Drag This Column

Title	<input type="text"/>
Description	<input type="text"/>

Version Control
Click to edit

#date.EEE, d MMM yyyy#

Menu

<i class='icon-home'></i> Home

Drop menu item here

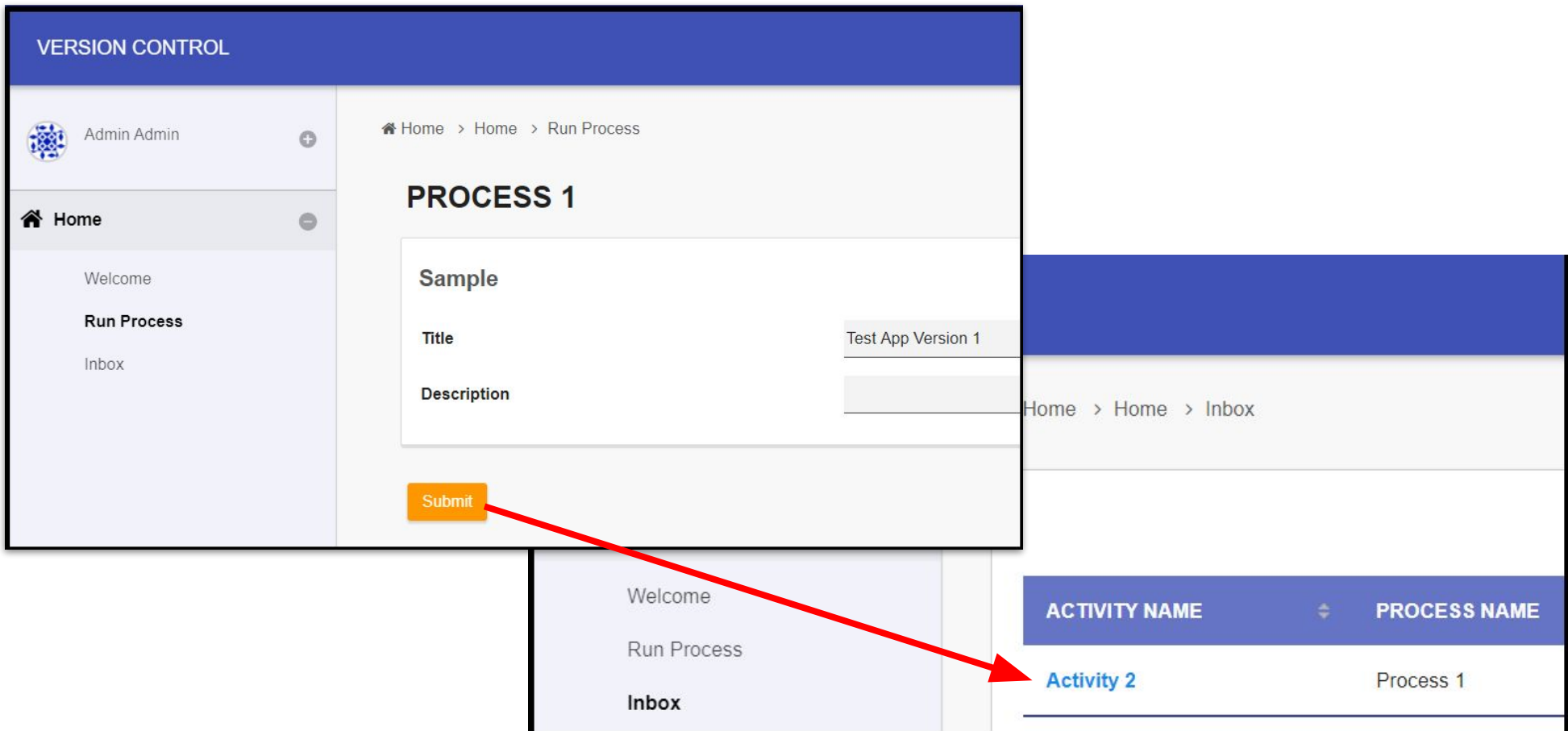
- Welcome
- Run Process
- Inbox

Exercise on Version Control

1. Create a new Joget Application with a **Process, Form and Userview**. (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

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



The screenshot shows the Joget workflow engine interface. On the left is a sidebar with a user profile 'Admin Admin' and a navigation menu with 'Home', 'Run Process', and 'Inbox'. The main area is titled 'VERSION CONTROL' and shows a breadcrumb 'Home > Home > Run Process'. A form titled 'PROCESS 1' is displayed with the following fields:

- Title:** Test App Version 1
- Description:** (empty)

A red arrow points from the 'Submit' button in the 'PROCESS 1' form to a table in the bottom right corner. The table lists process instances:

ACTIVITY NAME	PROCESS NAME
Activity 2	Process 1

Exercise on Version Control

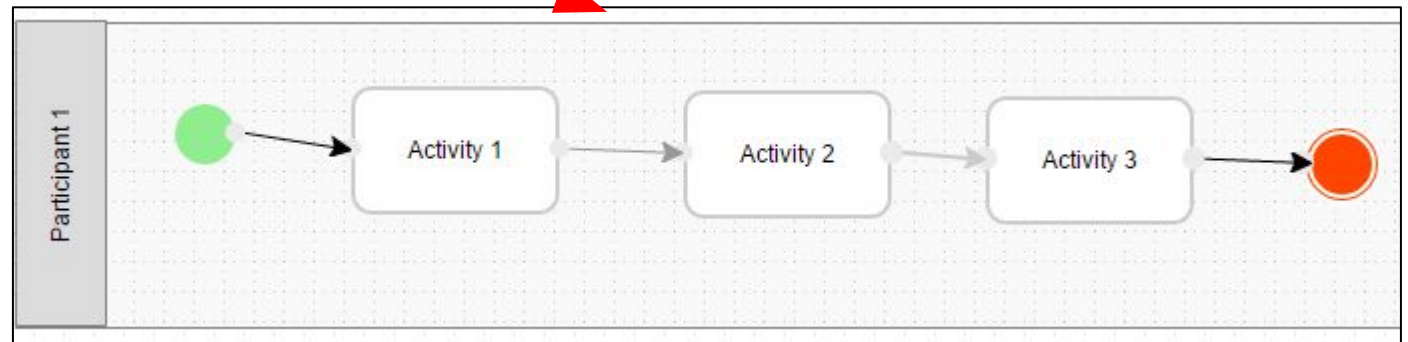
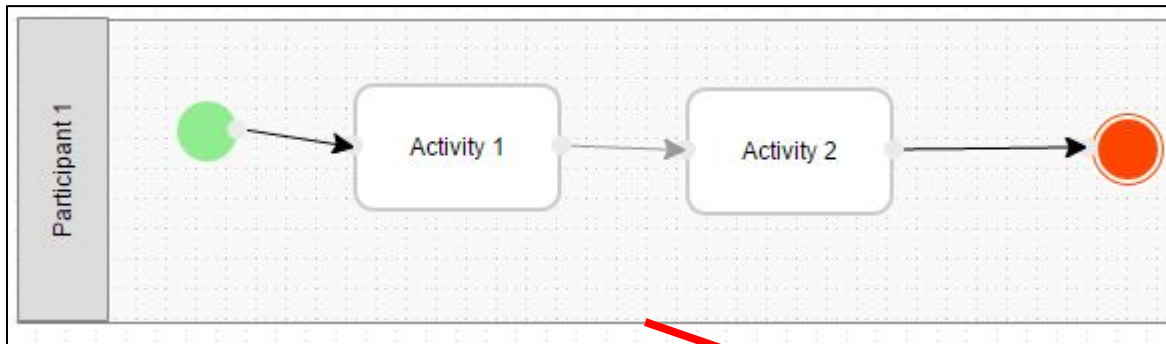
2. Run the Application, create a new process Instance.
 - Observe that on the completion of Activity 1, it will flow to Activity 2.
 - On completion of Activity 2, the process instance comes to an end.
 - Create another process instance and have the it pending at Activity 2 to proceed to the next step.

Exercise on Version Control

1. Create a new Joget Application with a **Process, Form and Userview**. (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)
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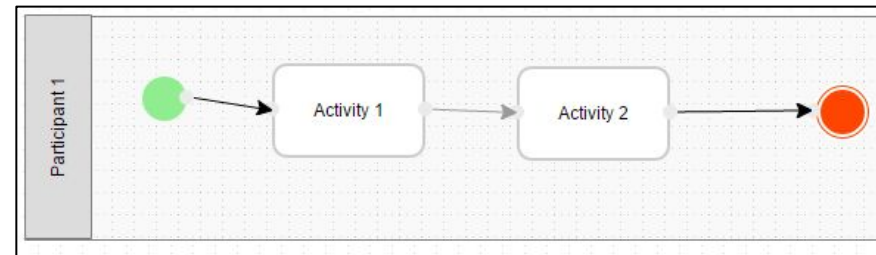
Exercise on Version Control

- Update the Process Design and observe the changes.

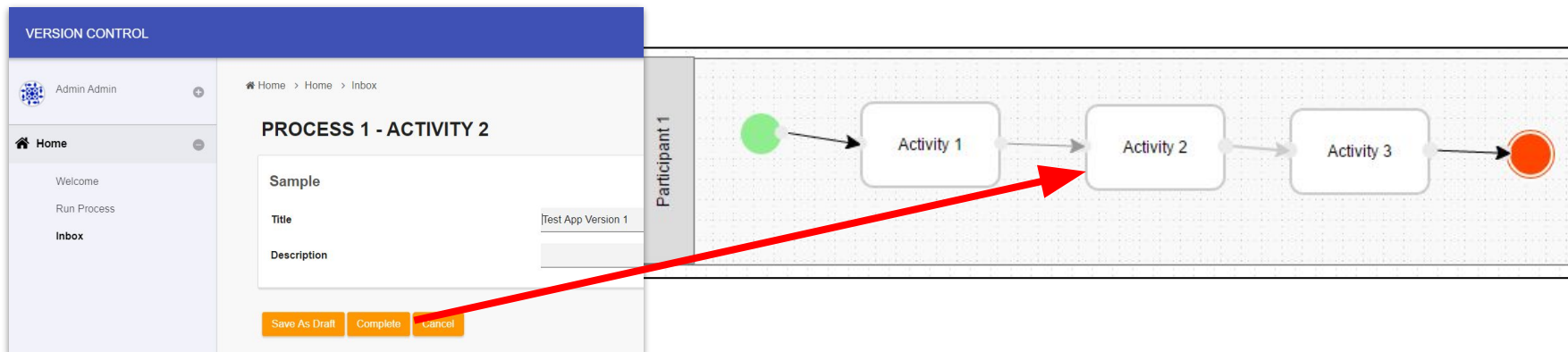


Exercise on Version Control

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?



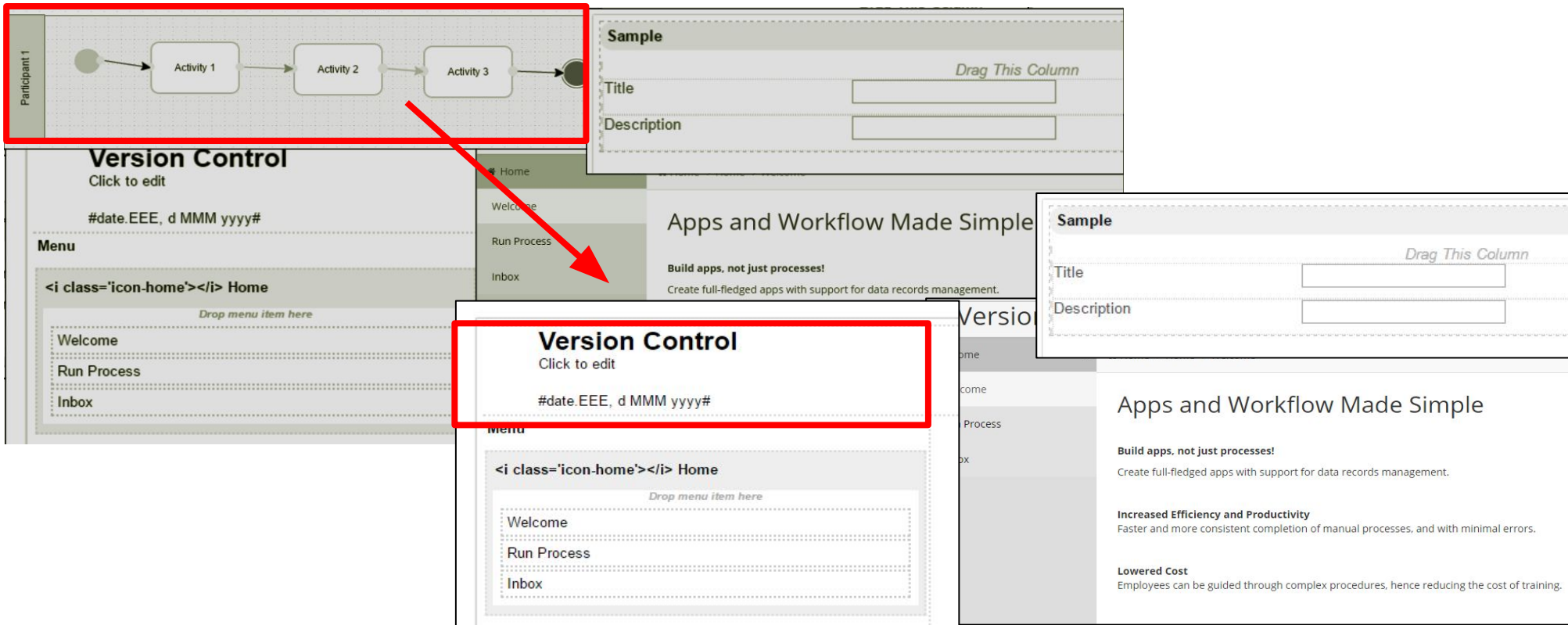
The screenshot shows the 'VERSION CONTROL' interface. On the left is a navigation menu with 'Home' selected. The main area displays 'PROCESS 1 - ACTIVITY 2' with fields for 'Sample', 'Title' (containing 'Test App Version 1'), and 'Description'. At the bottom are buttons for 'Save As Draft', 'Complete', and 'Cancel'. A red arrow points from the 'Complete' button to the 'Activity 2' box in the process flow diagram on the right. The process flow diagram for 'Participant 1' shows a sequence of three activities: Activity 1, Activity 2, and Activity 3, starting from a green circle and ending at a red circle.

Exercise on Version Control

1. Create a new Joget Application with a **Process, Form and Userview**. (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

- Increase the Application Version by creating a new version. (From v1 to v2)

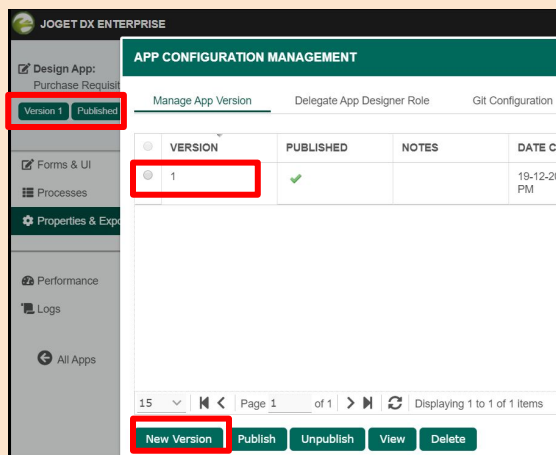


The image illustrates the process of creating a new version of an application in Joget. It shows a workflow diagram with three activities (Activity 1, Activity 2, Activity 3) and a 'Version Control' dialog box. The dialog box has a 'Click to edit' button and a date field. A 'Sample' form is also shown, which is used to create a new version. The 'Sample' form has a 'Title' field and a 'Description' field. The 'Version Control' dialog box is highlighted with a red box, and a red arrow points from the workflow diagram to it. Another red box highlights the 'Sample' form, and a third red box highlights the 'Version Control' dialog box again.

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 Designer > Versions > Select version > New Version



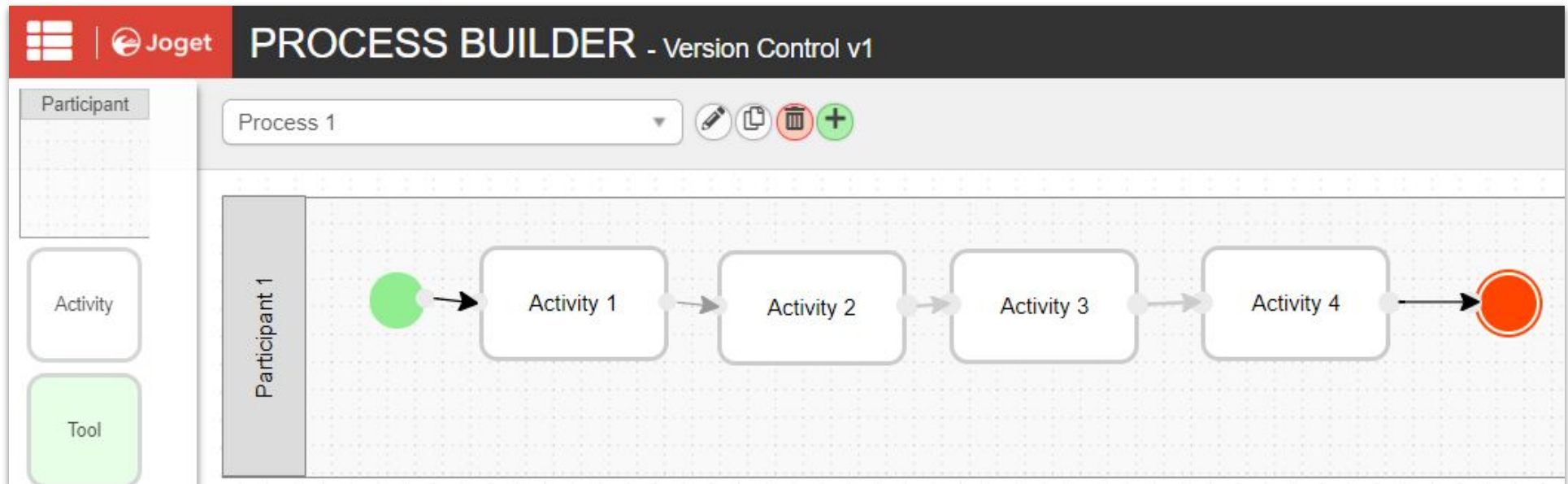
By creating a **New Version**, the App design will be **cloned** into the new version.

Exercise on Version Control

1. Create a new Joget Application with a **Process, Form and Userview**. (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.



Exercise on Version Control

1. Create a new Joget Application with a **Process, Form and Userview**. (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

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?

Exercise on Version Control

1. Create a new Joget Application with a **Process, Form and Userview**. (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.

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.

Chapter Review

- Understand how to manage Application Version and its impact.



Chapter 4

Git Version Control

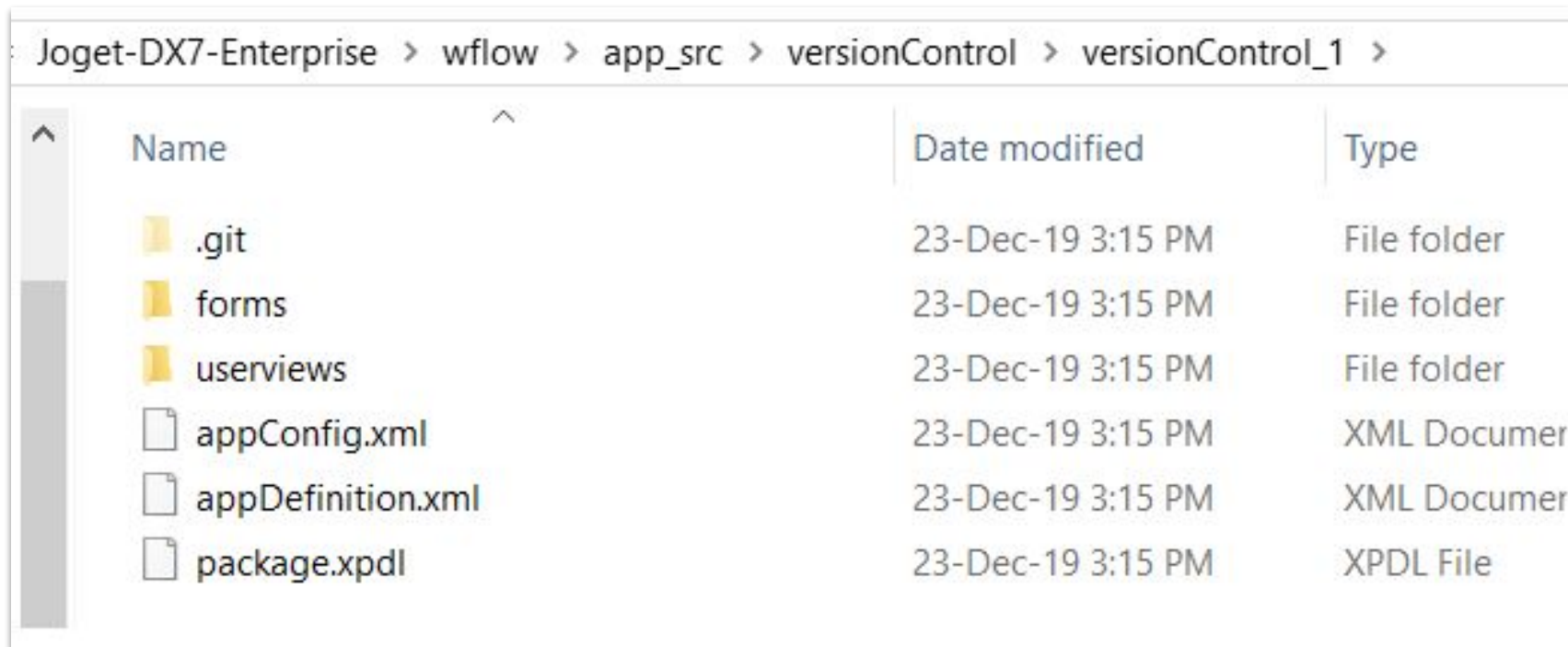
Built-in Git

- Any changes within the app will be committed into Git

```
1 INFO 24 Dec 2019 04:20:50 PackageEventLogger -
  UTCTime=1577161250283, EventType=packageLoaded, PackageId=versionControl, PackageVersion=1, EventPerformedBy=admin
2 INFO 24 Dec 2019 12:20:53 org.joget.apps.app.service.AppDevUtil - Commit to Git repo by admin: Update app definition versionControl. _Update app config
  versionControl. _Add form form. _Add userview versionControl. _Update xpd versionControl. _
3 INFO 24 Dec 2019 12:23:06 org.joget.apps.app.service.AppDevUtil - Commit to Git repo by admin: Update form form. _
4 INFO 24 Dec 2019 12:24:34 org.joget.apps.app.service.AppDevUtil - Commit to Git repo by admin: Update form form. _
5 INFO 24 Dec 2019 12:25:37 org.joget.apps.app.service.AppDevUtil - Commit to Git repo by admin: Update app definition versionControl. _Update app config
  versionControl. _
6 INFO 24 Dec 2019 12:26:20 org.joget.apps.app.service.AppDevUtil - Commit to Git repo by admin: Update app definition versionControl. _Update app config
  versionControl. _
7 INFO 24 Dec 2019 12:26:34 org.joget.apps.app.service.AppDevUtil - Commit to Git repo by admin: Add list list_form. _Update userview versionControl. _
8 INFO 24 Dec 2019 12:26:50 PackageEventLogger -
  UTCTime=157716170377, EventType=packageUpdated, PackageId=versionControl, PackageVersion=2, EventPerformedBy=admin
9 INFO 24 Dec 2019 12:26:56 org.joget.apps.app.service.AppServiceImpl$1 - Updating running processes for versionControl from 1 to 2
10 INFO 24 Dec 2019 12:26:56 org.joget.apps.app.service.AppServiceImpl$1 - Completed updating running processes for versionControl from 1 to 2
11 INFO 24 Dec 2019 12:26:57 PackageEventLogger -
  UTCTime=157716170559, EventType=packageLoaded, PackageId=versionControl, PackageVersion=1, EventPerformedBy=admin
12 INFO 24 Dec 2019 12:26:59 org.joget.apps.app.service.AppDevUtil - Commit to Git repo by admin: Update xpd versionControl. _Update app definition
  versionControl. _Update package versionControl. _Add form form_approval_action. _Add form form_approval. _Add form form_clarification. _Update userview
  versionControl. _
```

How To Access the Built-In Git?

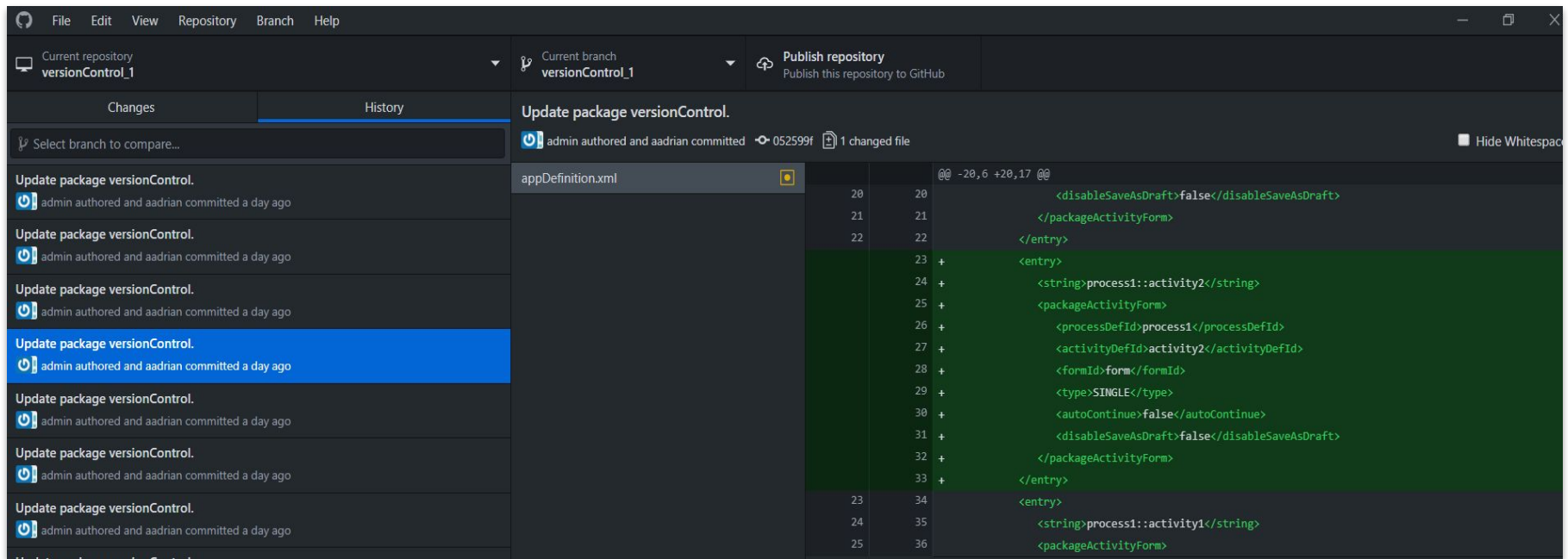
- To access into the built-in Git, the local repository is in <Joget installation folder>\wflow\app_src\<App ID>\<App ID_version number>



Name	Date modified	Type
.git	23-Dec-19 3:15 PM	File folder
forms	23-Dec-19 3:15 PM	File folder
userviews	23-Dec-19 3:15 PM	File folder
appConfig.xml	23-Dec-19 3:15 PM	XML Document
appDefinition.xml	23-Dec-19 3:15 PM	XML Document
package.xpdl	23-Dec-19 3:15 PM	XPDL File

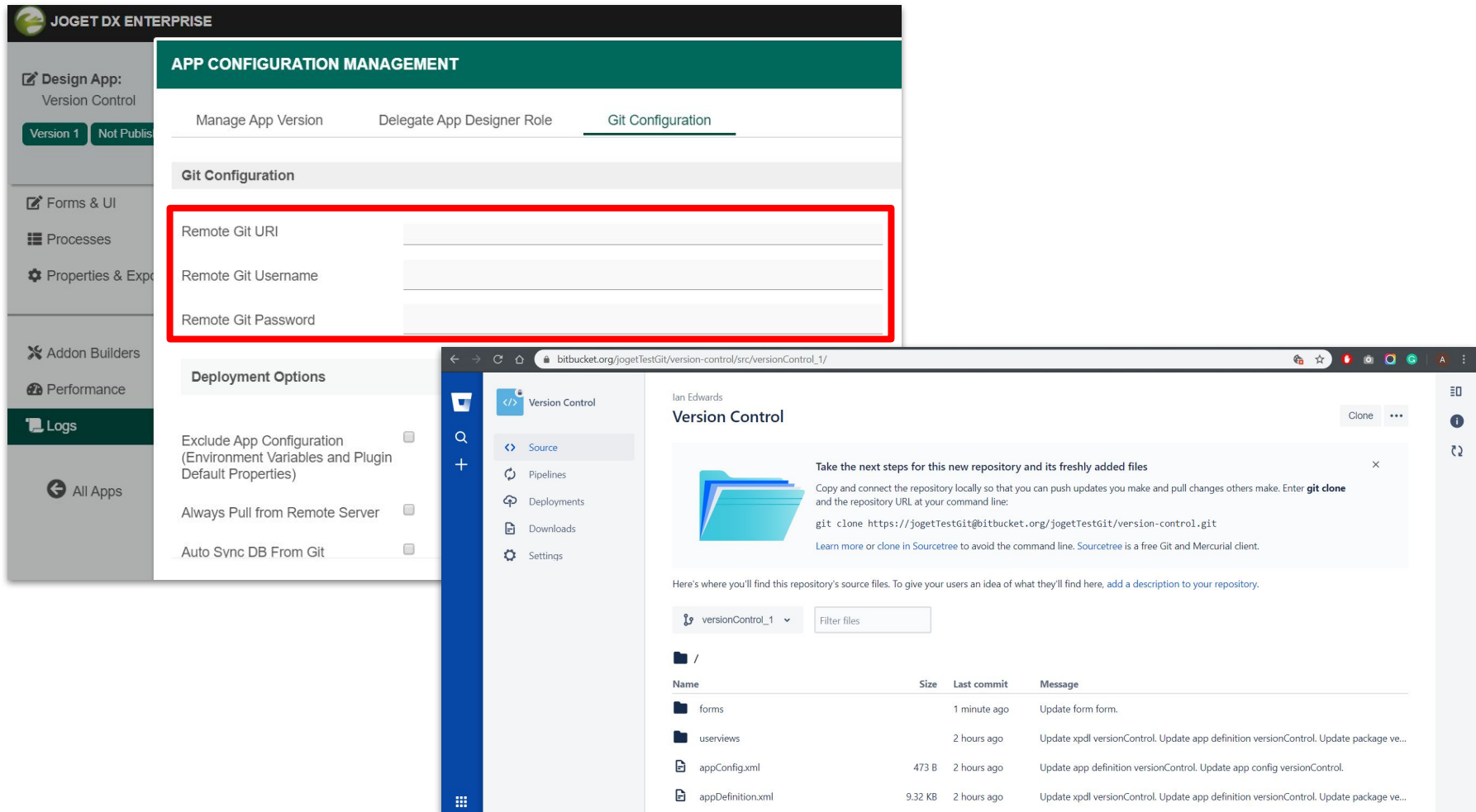
How To Access the Built-In Git?

- Sample of using GitHub Desktop to access the Git Repository



Remote Git

- You can also integrate to external Git



The screenshot displays the Joget DX Enterprise interface. On the left, a sidebar contains navigation options: Design App: Version Control (with sub-options Version 1 and Not Published), Forms & UI, Processes, Properties & Exports, Addon Builders, Performance, Logs, and All Apps. The main content area is titled 'APP CONFIGURATION MANAGEMENT' and has three tabs: 'Manage App Version', 'Delegate App Designer Role', and 'Git Configuration'. The 'Git Configuration' tab is active and contains three input fields: 'Remote Git URI', 'Remote Git Username', and 'Remote Git Password', which are highlighted with a red rectangular border. Below these fields are 'Deployment Options' with checkboxes for 'Exclude App Configuration (Environment Variables and Plugin Default Properties)', 'Always Pull from Remote Server', and 'Auto Sync DB From Git'.

Overlaid on the bottom right is a Bitbucket repository view for 'Version Control' by 'Ian Edwards'. The repository URL is 'https://jogetTestGit@bitbucket.org/jogetTestGit/version-control.git'. A message prompts the user to clone the repository. Below the message is a file browser showing the repository structure:

Name	Size	Last commit	Message
/			
forms		1 minute ago	Update form form.
userviews		2 hours ago	Update xpd versionControl. Update app definition versionControl. Update package ve...
appConfig.xml	473 B	2 hours ago	Update app definition versionControl. Update app config versionControl.
appDefinition.xml	9.32 KB	2 hours ago	Update xpd versionControl. Update app definition versionControl. Update package ve...

Module Review

1. Introduction to Version Control
2. Process Version Control
3. Application Version Control
4. Git Version Control

Recommended Further Learning

- <http://dev.joget.org/community/display/DX7/Version>

Stay Connected With Joget

- www.joget.org
- community.joget.org
- twitter.com/jogetworkflow
- facebook.com/jogetworkflow
- youtube.com/jogetworkflow