
Joget DX

SLA & Deadlines

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Prerequisites

1. Good understanding on how to design a Workflow Process with SLA & Deadlines

Content

1. Service Level Agreement (SLA)
2. Deadlines
3. Introduction to Deadline Plugin

Chapter 1

Service Level Agreement (SLA)

Service Level Agreement (SLA) Limit

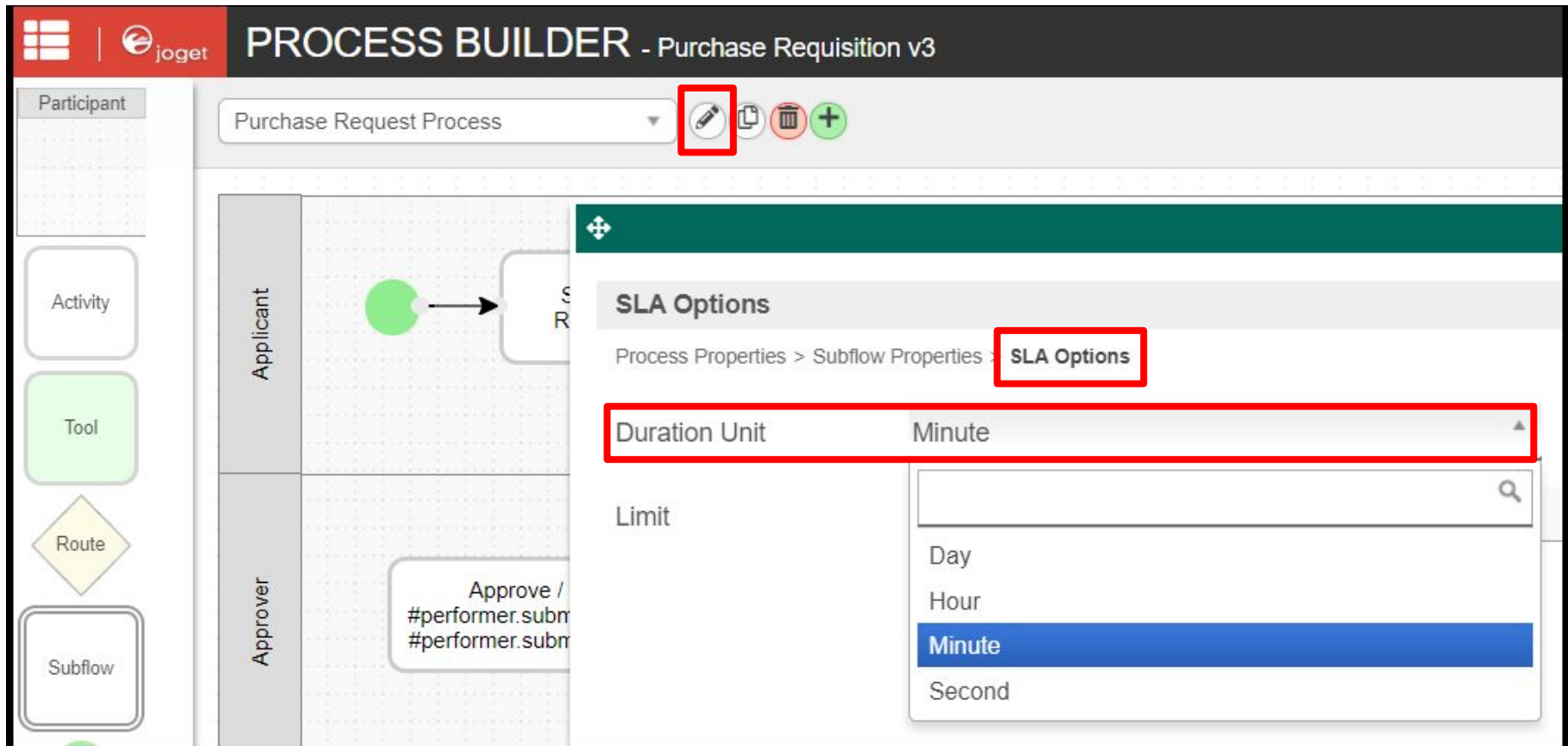
- Why set limits?
 - By setting limits to workflow activities, you are able to define appropriate service levels for your processes.
 - Participants in the workflow can be made aware of adherence to these service levels.
 - You can generate reports to determine the efficiency of your processes e.g. identify bottlenecks, etc.

How to Set SLA Limit?

- Define process-level **duration unit**
(Duration unit will be **shared** among activities in the process)
- Set **SLA Limit** on targeted activity or process
- **SLA** can be affected by the use of Deadline plugins.

Define Duration Unit

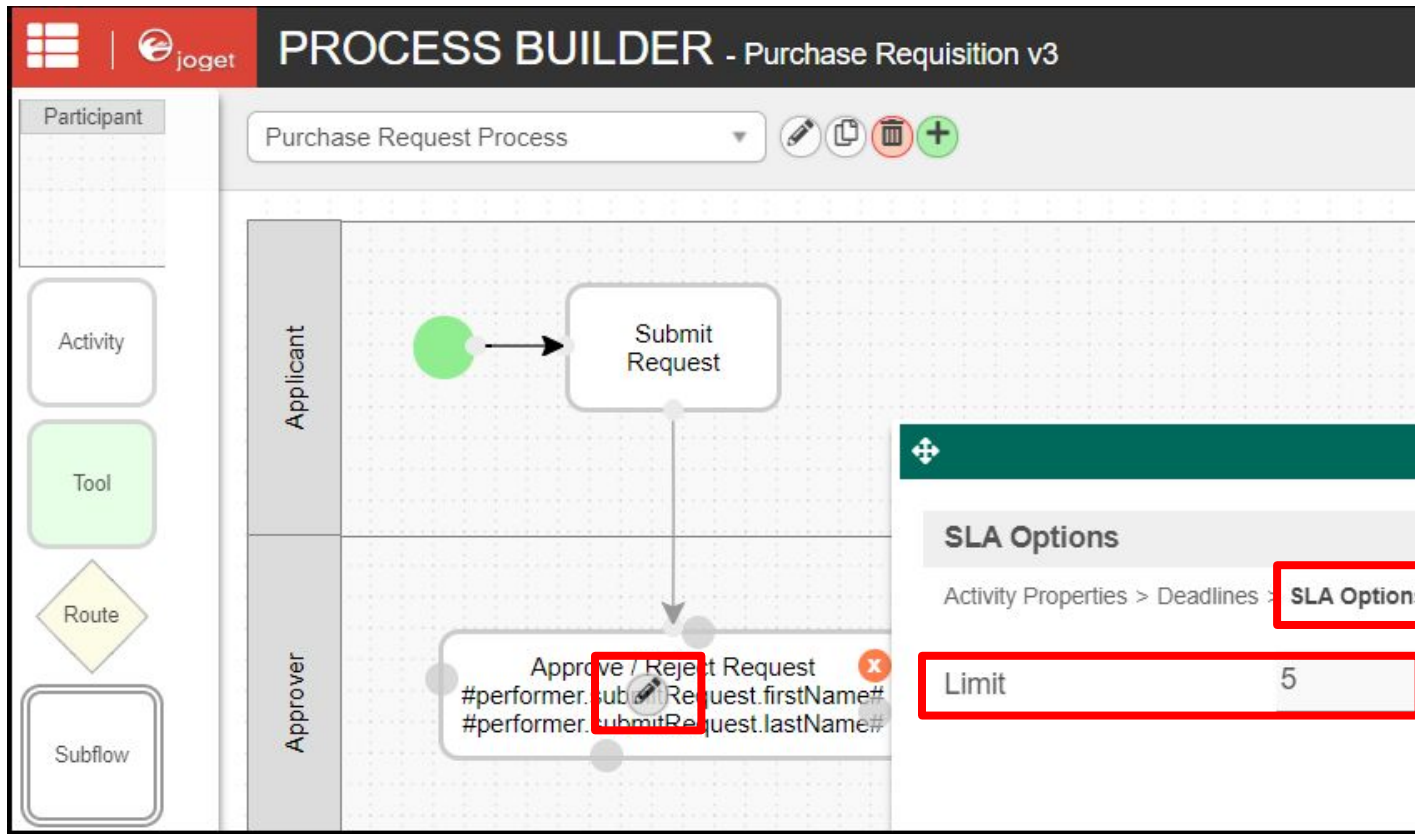
- Edit process's properties to set the duration unit.
- Set to **minute**.



The screenshot shows the Joget Process Builder interface for a process named "Purchase Request Process". The interface includes a left sidebar with tool icons for Participant, Activity, Tool, Route, and Subflow. The main workspace shows a process flow with a green start node and a task node. A right-hand panel is open to the "SLA Options" configuration for a subflow. In this panel, the "SLA Options" title and the "Duration Unit" dropdown menu are highlighted with red boxes. The "Duration Unit" dropdown is currently set to "Minute" and is open, showing a list of options: "Day", "Hour", "Minute" (which is selected and highlighted in blue), and "Second".

Set SLA Limit on Activity

- Set “5” in **Approve / Reject Request** activity. (Duration unit was set earlier to **minute**)



The screenshot shows the Joget Process Builder interface for a process named "Purchase Request Process". The process flow includes a "Submit Request" activity for the "Applicant" role, followed by an "Approve / Reject Request" activity for the "Approver" role. The "Approve / Reject Request" activity is highlighted with a red box, and its properties are shown in a panel on the right. In the "SLA Options" section of the panel, the "Limit" is set to "5".

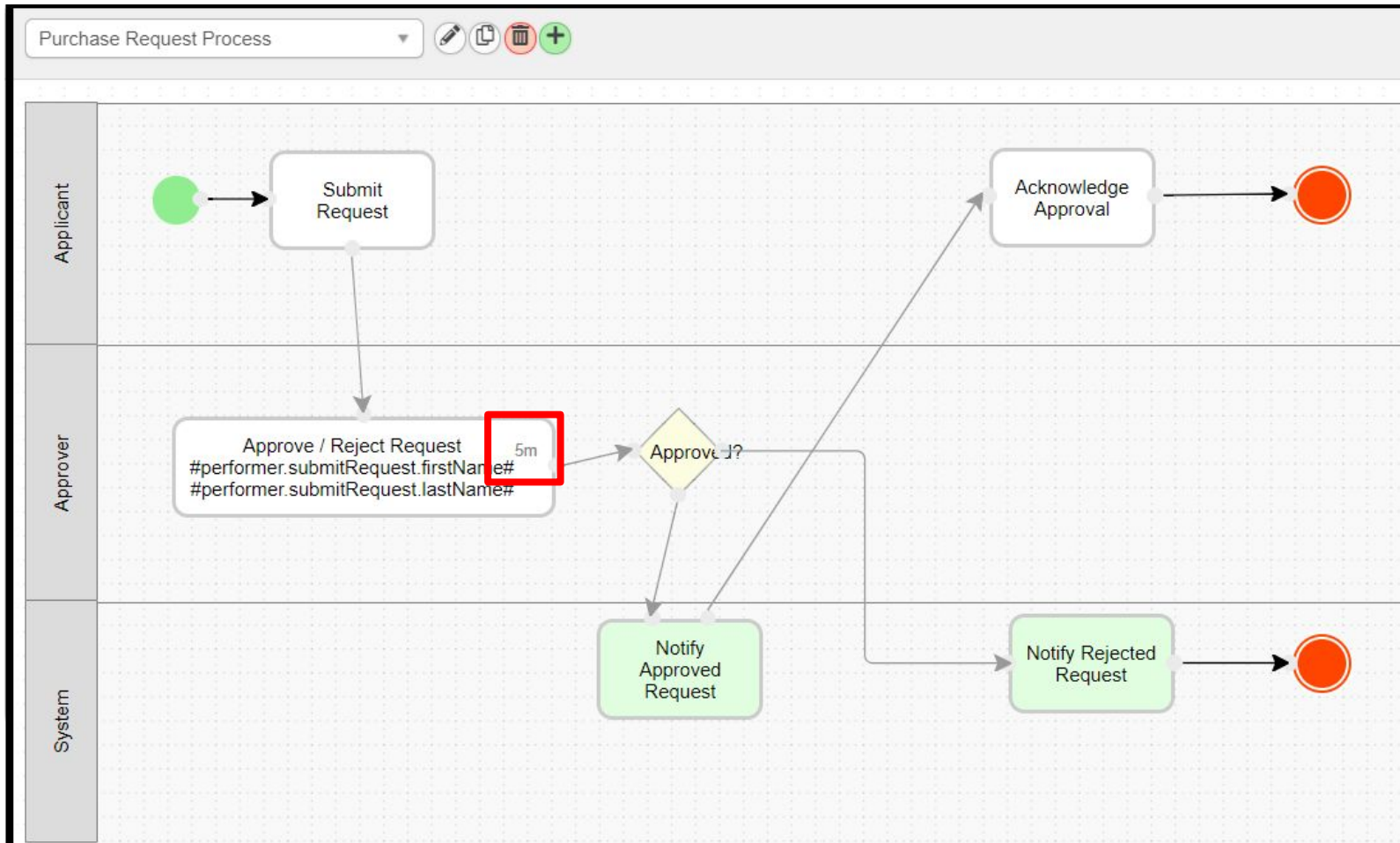
SLA Options

Activity Properties > Deadlines > **SLA Options**




Limit	5
-------	---

SLA Limit Indicator

- SLA will be reflected in process diagram itself.



Service Level Monitor

- For activities that have defined **limits**, task assignments will have **due dates**.
- When processes that have limits are deployed, you will notice that the **Service Level Monitor** column in the Inbox will display a **colour coded square**    .
- The colour of the Service Level Monitor will change from **GREEN** to **YELLOW** as the due date approaches. Once the due date is reached, the colour will be **RED**.

Defining SLA Indicator

- Medium Warning Level
 - Color: Yellow
 - Default Value: 20% of elapsed time.
- Critical Warning Level
 - Color: Red
 - Default Value: 50% of elapsed time.
- Can be changed in the System Settings. (System wide effect)

Medium Warning Level	<input type="text"/>
	<i>default: 20</i>
Critical Warning Level	<input type="text"/>
	<i>default: 50</i>

Service Level Monitor

- SLA Indicator will be seen in the task Inbox.

PURCHASE REQUISITION PORTAL 🏠

Admin Admin admin Home > Purchase Requisition > Inbox

Welcome 10

Purchase Requisition

Submit New Request

Inbox

ACTIVITY NAME	PROCESS NAME	DATE CREATED	SERVICE LEVEL MONITOR	DUE DATE
Approve / Reject Request Admin Admin	Purchase Request Process	20-12-2019 07:30 AM	■	20-12-2019 07:35 AM
Approve / Reject Request Admin Admin	Purchase Request Process	20-12-2019 07:29 AM	■	20-12-2019 07:34 AM
Approve / Reject Request Admin Admin	Purchase Request Process	20-12-2019 07:28 AM	■	20-12-2019 07:33 AM
Approve / Reject Request Admin Admin	Purchase Request Process	20-12-2019 07:28 AM	■	20-12-2019 07:33 AM

4 items found, displaying all items.
[CSV](#) | [Excel](#) | [XML](#) | [PDF](#)

Process Monitoring

- SLA Indicator is also available in the Process Monitoring module for the administrator.

Monitor Apps

- Running Processes
- Completed Processes
- Audit Trail
- Tomcat Logs

View Graph
Abort Instance
Remove Instance
Re-evaluate

App [Purchase Requisition v1](#)

Process name [Purchase Request Process](#)

Process ID 833_purchaseRequest_purchaseRequestProcess

Process Definition ID purchaseRequest#9#purchaseRequestProcess

Process Version 9

State open.running

Service Level Monitor -

Requester admin

Start Time 12-04-2018 04:12 PM

Limit

Due Date

Delay

Finish Time

Time From Date Started

[Activity List](#)

Activity ID	Activity Name	State	Create time	Service Level Monitor
1013_833_purchaseReque	Approve / Reject Request	open_not_running.not_started	12-04-2018 04:12 PM	■

SLA Report on Userview

- SLA Report can also be made available for end user (e.g. Manager) to inspect.

PURCHASE REQUISITION PORTAL

Admin Admin

Home

Welcome

SLA Report

Purchase Requisition

Home > / Home > / SLA Report

10 Show

<input type="checkbox"/>	PROCESS NAME	MIN DELAY (SECONDS)	MAX DELAY (SECONDS)	RATIO ON TIME	RATIO WITH DELAY	SERVICE LEVEL MONITOR
<input type="checkbox"/>	Purchase Request Process	0	0	100	0	■

<input type="checkbox"/>	ACTIVITY NAME	MIN DELAY (SECONDS)	MAX DELAY (SECONDS)	RATIO ON TIME	RATIO WITH DELAY	SERVICE LEVEL MONITOR
<input type="checkbox"/>	Approve / Reject Request for Admin Admin	34	34	0	100	■
<input type="checkbox"/>	Submit Request	0	0	100	0	■

2 items found, displaying all items.

[CSV](#) | [Excel](#) | [XML](#) | [PDF](#)

- Reference: <http://dev.joget.org/community/displayDX7/SLA+Report>

Chapter Review

- Set SLA limit to workflow activity, which enables the implementation of service level monitoring.

Exercise

- Tweak the SLA settings to only turn to **YELLOW** when half of the remaining time elapsed and...
- Change to **RED** when all the remaining time runs out.

A short horizontal line with a black left half and an orange right half.

Chapter 2

Deadlines

Deadlines and Exceptions

- For each activity, Deadline(s) can be set.
- Deadlines act as a timer which triggers an Exception transition to another activity when a specified duration has elapsed
- Deadlines that has reached its elapsed duration will be queued and then be picked up by the **Deadline Checker**.



Deadline reached



EXCEPTION

Plugin Types



App Builder Components & Supported Plugin Types

Userview Builder

- Userview Menu
- Userview Permission
- Userview Theme

Datalist Builder

- Datalist Binder
- Datalist Action
- Datalist Column Formatter
- Datalist Filter Type

Process Builder

- Deadline
- Process Participant
- Process Tool
- Process Form Modifier
- Decision Tool

Form Builder

- Form Element
- Form Load Binder
- Form Store Binder
- Form Options Binder
- Form Validator
- Form Permission
- Process Form Modifier
- Post Form Submission Processing
- Generator

Addon Builder

App Platform

- Audit Trail
- Hash Variable
- Web Service

Platform

- Directory Manager
- Web Service

Deadlines

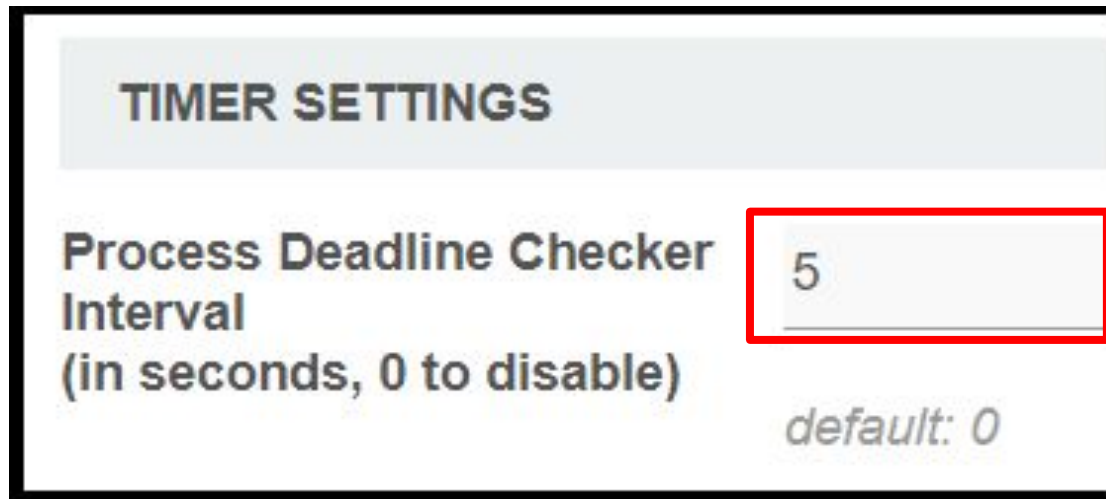
- Deadline execution can be **synchronous** or **asynchronous**.
- For **synchronous** execution, the current activity will no longer be active when the deadline is triggered.
 - Used in cases such as approval escalation.
- For **asynchronous** execution, the next activity will be executed while the current activity is still waiting.
 - Used in cases such as sending reminders.
- Multiple deadlines are supported for each activity.

Deadline Checker

- The Deadline Checker kicks in at **specified intervals** when enabled.
- **Deadlines due** at the time will be **picked up** and processed in batches of 10 by the Deadline Checker until finish.
- The deadline checker will resume counting only when it completes processing all pending deadline tasks.
- Set an appropriate interval that suits your environment.

Activating Deadline Checker

- The **Process Deadline Checker** MUST be enabled under **System Settings > General Settings** for deadlines to work.
- This will enable periodic checks on activities' pending deadline tasks as defined by the **checker interval**.



TIMER SETTINGS

Process Deadline Checker Interval
(in seconds, 0 to disable)

5

default: 0

Deadline Checker Discussion

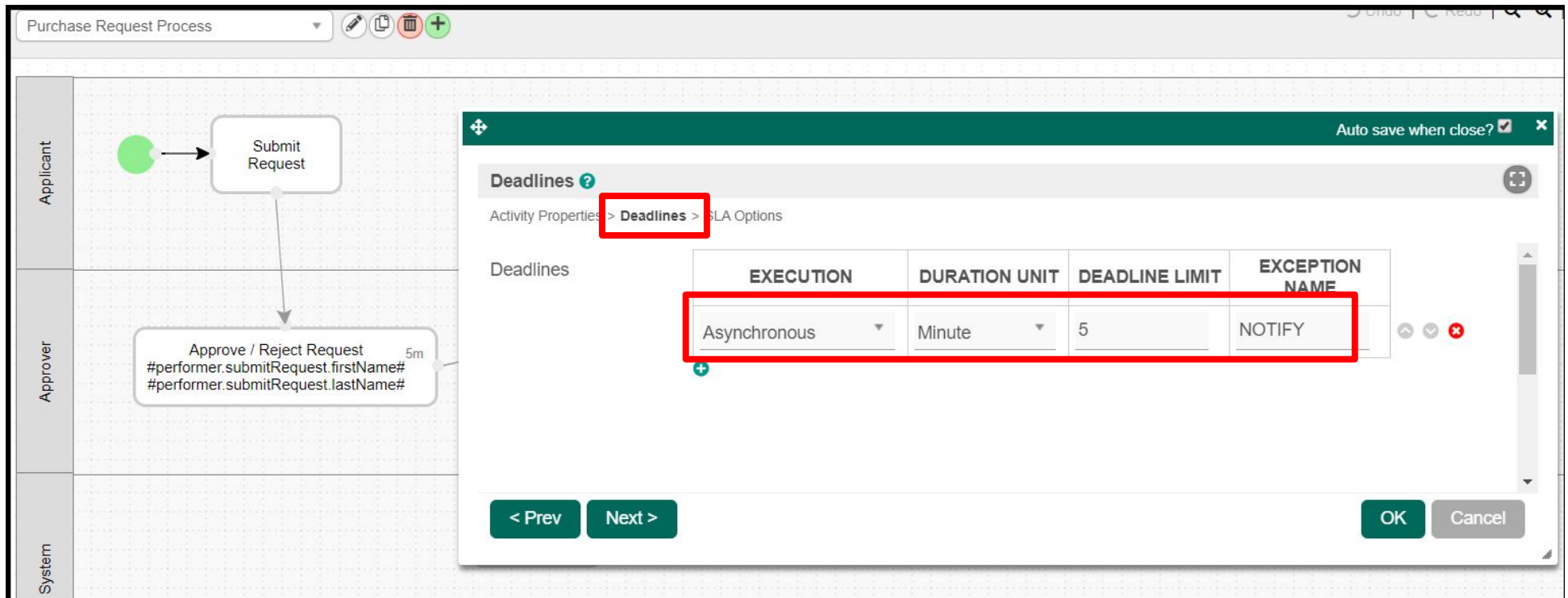
- What will the timeline be like for a Deadline set at 1 minute and Deadline Checker at 1 hour?
(Think of the mailman analogy)

Setting Deadlines and Exceptions

- **Deadlines** are set at **activities**.
- **Exceptions** are set at **transitions**.
- Exceptions transition to another **activity** or **tool**.
- These are required for the deadline feature to work.

Add a New Deadline

- Add a new Deadline to the **Approve / Reject Request** activity.
- Add **Asynchronous** deadline, set it to 5 minutes.
- Set an exception name. It **must** be unique.



Purchase Request Process

Applicant: Submit Request

Approver: Approve / Reject Request (5m)
 #performer.submitRequest.firstName#
 #performer.submitRequest.lastName#

System

Deadlines ?

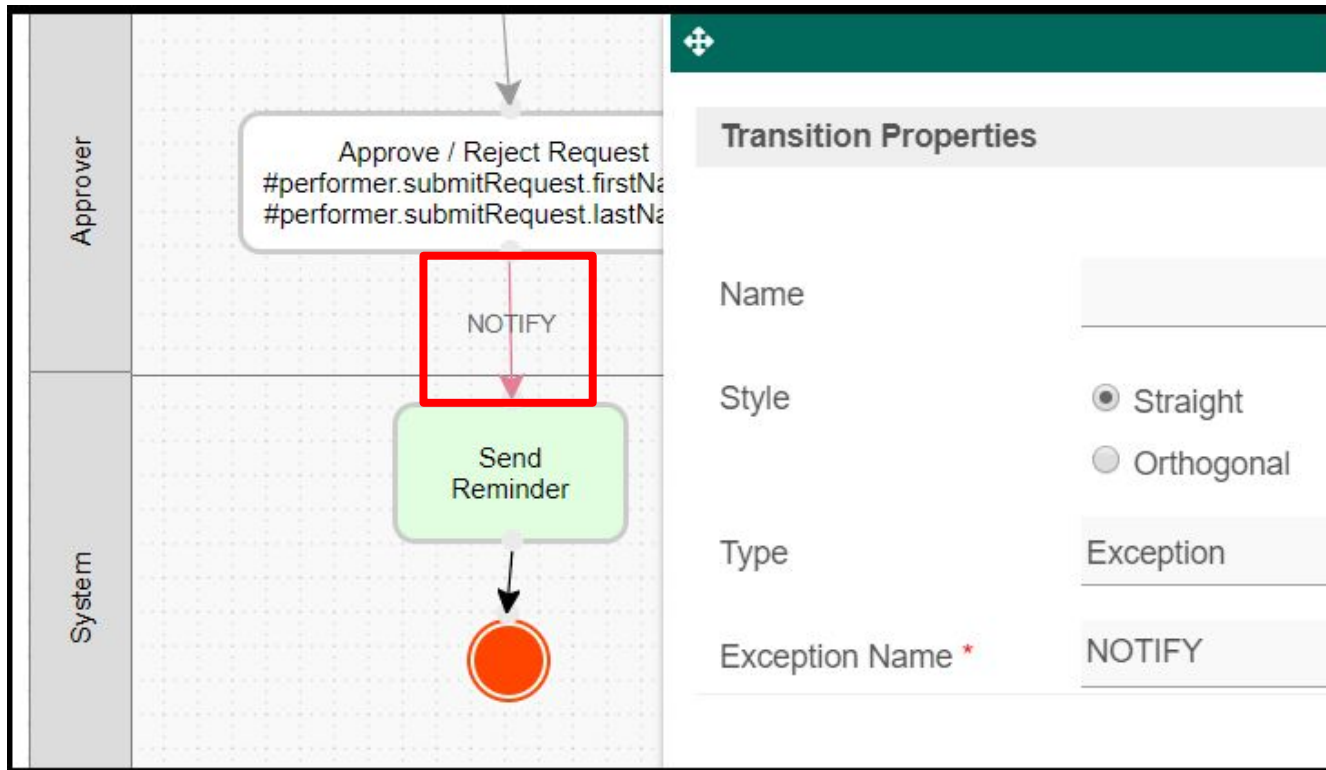
Activity Properties > **Deadlines** > SLA Options

EXECUTION	DURATION UNIT	DEADLINE LIMIT	EXCEPTION NAME
Asynchronous	Minute	5	NOTIFY

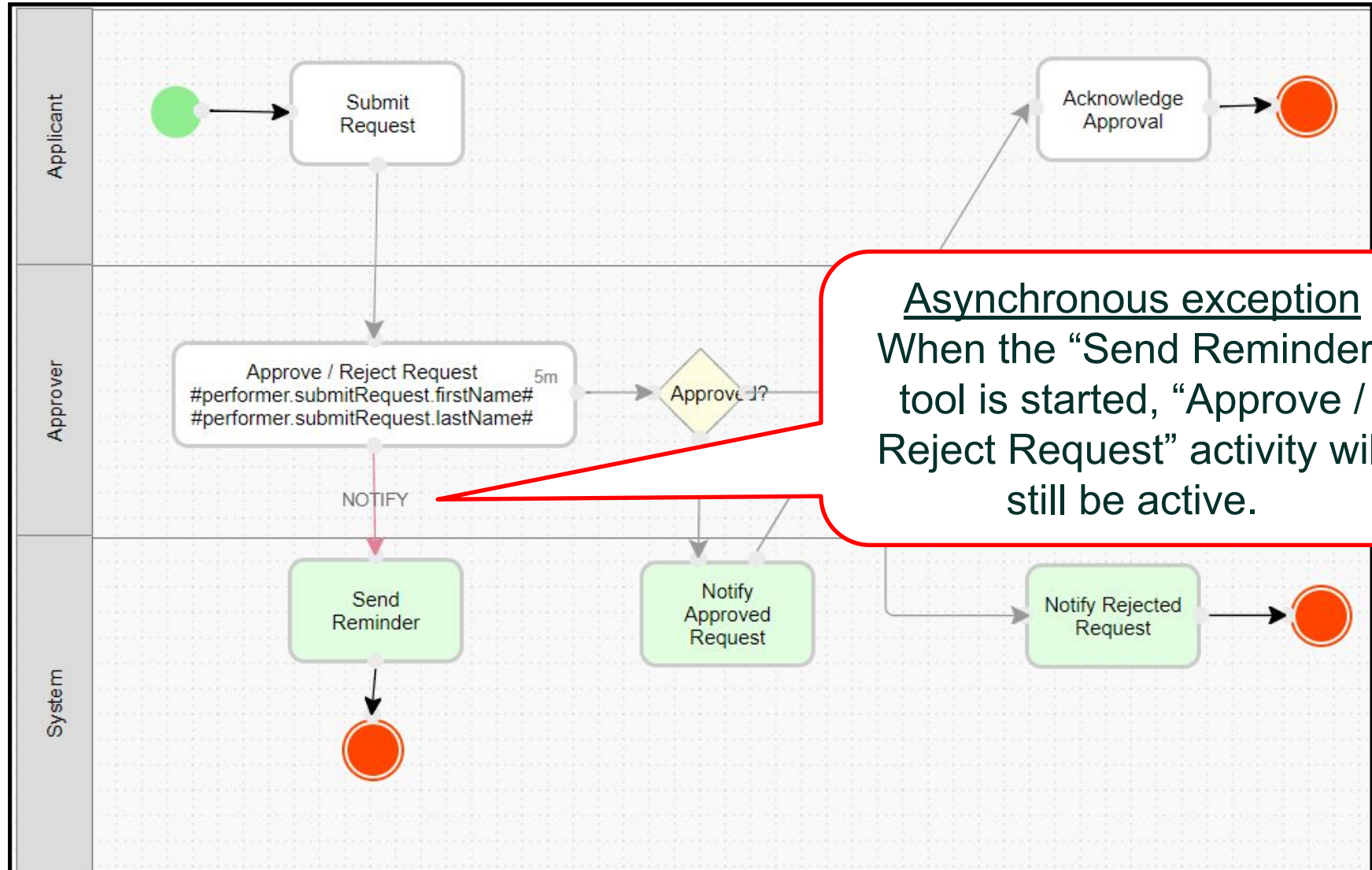
< Prev Next > OK Cancel

Add a New Deadline

- Add a new Tool, set it to **Send Reminder**.
- Link them up and set transition type to **Exception**. Set the exception name as the one declared earlier.



Setting Deadlines and Exceptions



Asynchronous exception
 When the “Send Reminder” tool is started, “Approve / Reject Request” activity will still be active.

Process Monitoring

- Study on how deadline would affect your process instance in Process Monitoring.
- Differentiate types of “state” of activity/process.
 - closed.completed
 - closed.terminated
 - close.aborted
 - open.not_running.not_started

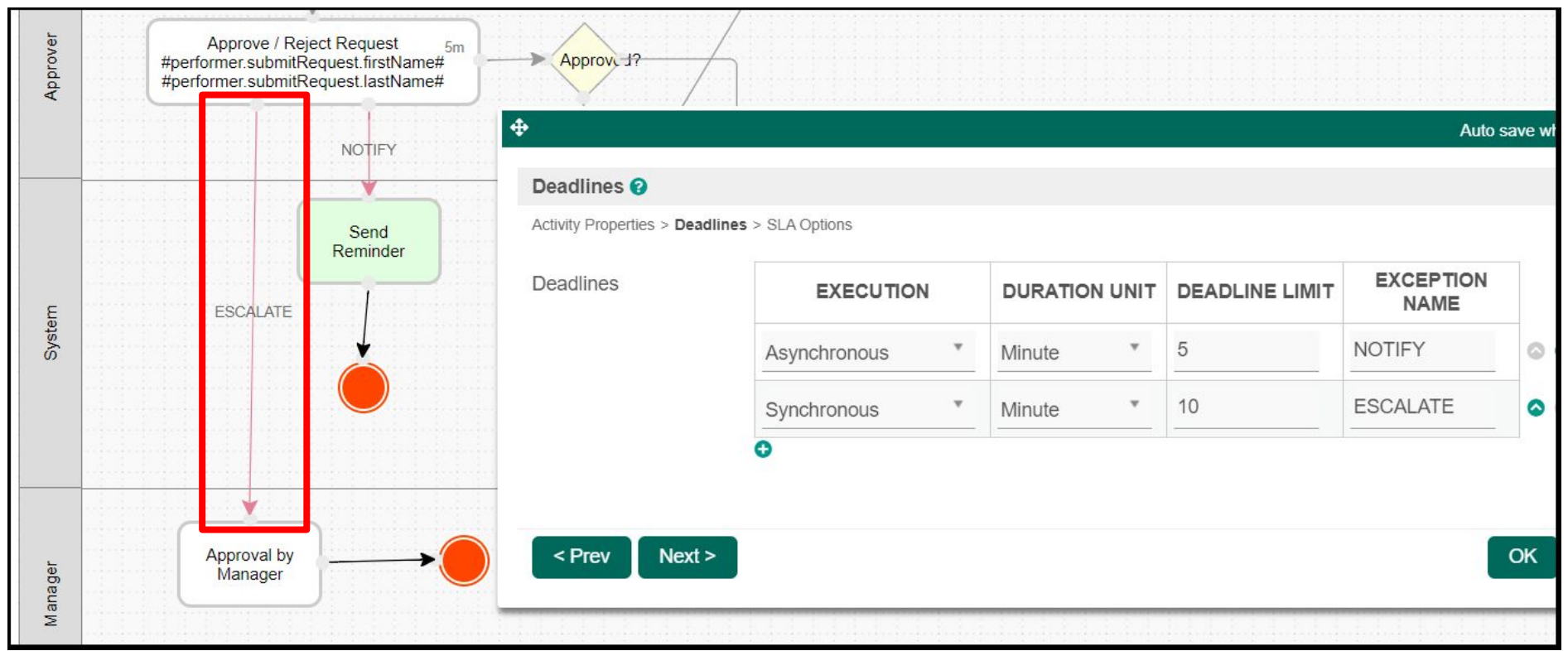
Exercise 1

- Verify that the deadline works as designed by mapping the newly created Tool to a Email Tool plugin.
- Configure the Email Tool accordingly.
- Test if the Email Tool is triggered by the Deadline by starting up a new process instance.
- Optionally, you may use Bean Shell Tool to output to the server log to test this too.

Exercise 2

- Add a second level approval for when the first level approver does not respond in certain period, the second approver will take over.
- Choose the appropriate time frame and type of deadline.
- Configure the new participant's mapping accordingly after deployment of the new process flow.

Exercise 2



The diagram shows a BPMN process with three swimlanes: Approver, System, and Manager. An activity in the Approver lane is labeled "Approve / Reject Request" with a duration of 5m. It has an outgoing arrow to a decision diamond "Approved?". A red box highlights an "ESCALATE" arrow from the activity to an "Approval by Manager" activity in the Manager lane. A "NOTIFY" arrow from the activity points to a "Send Reminder" activity in the System lane. The configuration panel on the right is titled "Deadlines" and shows "Activity Properties > Deadlines > SLA Options". It contains a table with two rows of deadline configurations.

EXECUTION	DURATION UNIT	DEADLINE LIMIT	EXCEPTION NAME
Asynchronous	Minute	5	NOTIFY
Synchronous	Minute	10	ESCALATE

Good To Know

- One activity may contains one or more Deadlines.
- Each Deadline has its own Duration Unit, unlike SLA.

Good To Know

- It is also possible to set use a **Workflow Variable** as the Deadline limit.
(Remember to declare the Workflow Variable and set the value according to the date format defined)

Important Note

- SLA will **NOT** manipulate the flow of your Workflow Process, Deadline **will**.
- Deadlines will highly unlikely get triggered on the dot as it depends on the **Deadline Checker Interval cycle** & **deadline tasks processing times**.
- Deadline interval will begin again only after all deadline tasks in queue has completed processing.
- Do NOT set deadlines on Tool, it's only meant for Activities.

Chapter Review

1. Set deadline and design exception handling.
2. Understand the difference between Synchronous and Asynchronous deadline.
3. Understand the overall deadline behavior

Reference:

<https://dev.joget.org/community/display/DX7/Deadlines+and+Escalations>

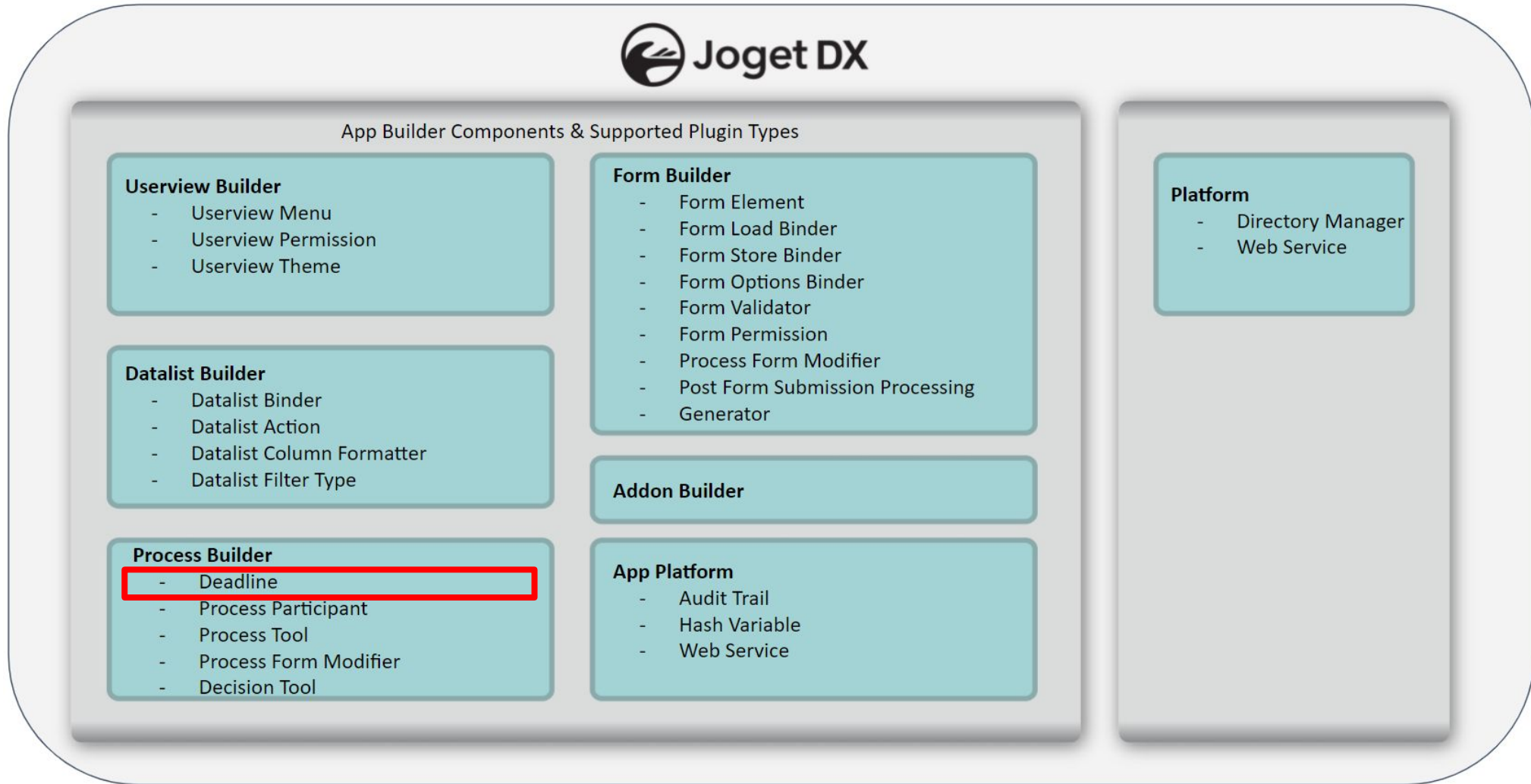
Chapter 3

Introduction to Deadline Plugin

Deadline Plugin

- **Deadline plugin** will influence the calculation of **SLA** and **Deadlines** in a process flow.

Plugin Types



Office Working Hour Deadline Plugin

- **Office Working Hour Deadline Plugin** is an essential addition to the working environment where **SLAs** and **deadlines** are implemented.
- This plugin will intercept and override how calculations are made by Joget when calculating due dates for SLAs and deadlines imposed on a process.
- The Office Working Hour Deadline plugin takes the following into account during calculations:
 - Holidays
 - Working Hours
 - Working Days

Exercise

Consider a synchronous deadline where:

- Activity started at : Friday 5.50pm
- Deadline trigger set to : 30 minutes
- Last deadline checked : 5.55pm
- Deadline interval : every 1 hour
- Office Hours : Weekdays 9am - 6pm

Ignoring the deadline task processing time, when does the synchronous deadline trigger?

Exercise - Optional

- Configure the Office Working Hour Deadline plugin into your existing App.
- Observe the changes to the due dates on SLA and Deadline.

Chapter Review

- Able to understand the impact of Deadline plugins to Deadline and SLAs calculations.

Module Review

1. Set SLA limit to workflow activity, which enables the implementation of service level monitoring.
2. Set deadline and design exception handling.
3. Understand the difference between Synchronous and Asynchronous deadline.
4. Understand the overall deadline behavior
5. Understand the Deadline Plugin and its purposes.

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