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**FLOW<sup>x</sup>.AI**

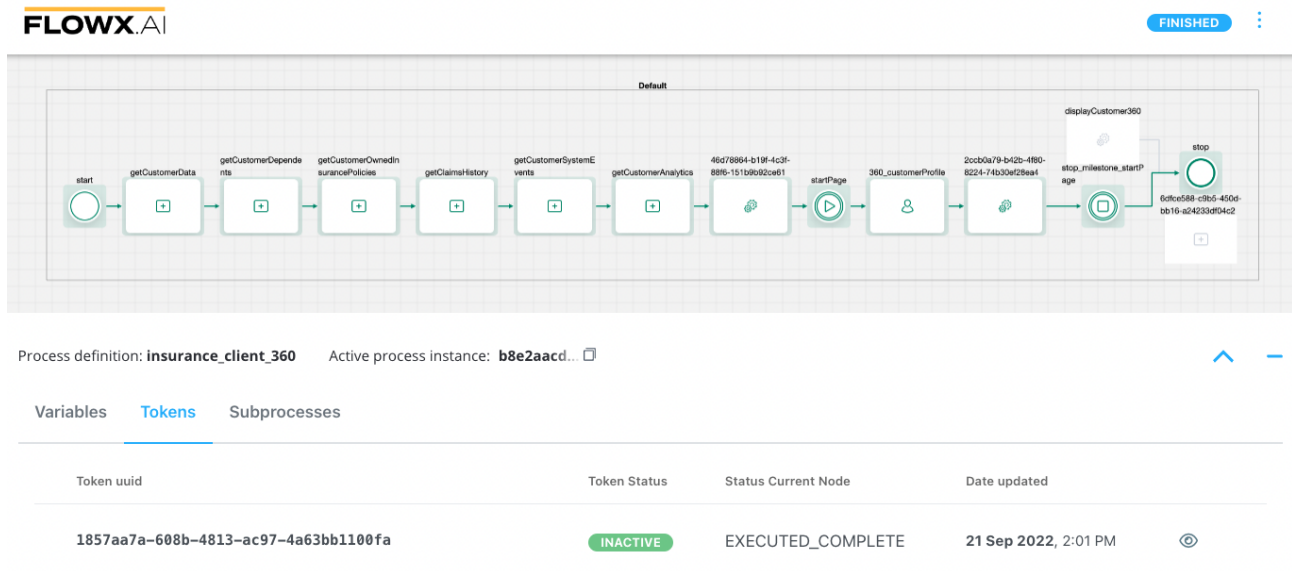
**BUILDING BLOCKS / Process Designer / Active process**

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## BUILDING BLOCKS / Process Designer / Active process / Process instance

A process instance is a specific execution of a business process that is defined on the FLOWX.AI platform. Once a process definition is added to the platform, it can be executed, monitored, and optimized by creating an instance of the definition.



## Overview

Once the desired processes are defined in the platform, they are ready to be used. Each time a process needs to be used, for example each time a customer wants to request, for example, a new credit card, a new instance of the specified process definition is started in the platform. Think of the process definition as a blueprint for a house, and of the process instance as each house of that type being built.

The **FLOWX Engine** is responsible for executing the steps in the process definition and handling all the business logic. The token represents the current position in the process and moves from one node to the next based on the sequences and rules defined in the exclusive gateways. In the case of parallel gateways, child tokens are created and eventually merged back into the parent token.

Kafka events are used for communication between FLOWX.AI components such as the engine and integrations/plugins. Each event type is associated with a Kafka






topic to track and orchestrate the messages sent on Kafka. The engine updates the UI by sending messages through sockets.

» [More about Kafka](#)

## Checking the Process Status

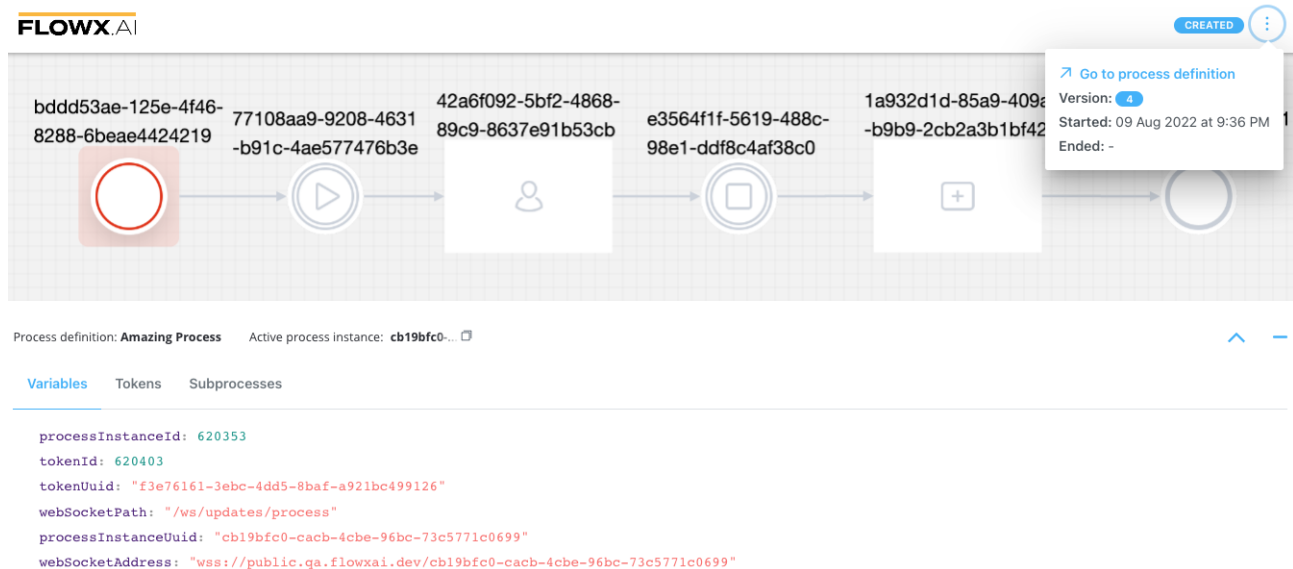
To check the status of a process or troubleshoot a failed process, follow these steps:

1. Open **FLOWX Designer**.
2. Go to **Processes** → **Active Process** → **Process instances**.
3. Click **Process status** button.

Active processes						
Filter by process definition						Search by uuid or key identifier
Process uuid	Definition name	Exceptions	Status	Current Node Name	Start date	
cb19bfc0-cacb-4cbe-96bc-73c5771c0699	Amazing Process	-	CREATED	bddd53ae-125e-4f46-8288-6beae4424219	09 Aug 2022, 9:36 PM	 Process status
abc17f2b-f3fb-48e1-a024-131692ade558	Super Process	-	STARTED	node_name	09 Aug 2022, 8:35 PM	
3a4849fb-85ec-4383-9402-6f14d37d840e	Awesome Process	-	STARTED	user_task	09 Aug 2022, 8:32 PM	
6989a30a-370a-4dc8-9aa8-e605bbe9772e	Incredible Process	-	STARTED	user_task	09 Aug 2022, 8:30 PM	
4a69ff3c-6a48-46c6-9292-877f9bd7cf69	Nice Process	-	EXPIRED	page_1	09 Aug 2022, 7:47 PM	

# Understanding the Process Status Data

The process status data includes the following:



- **Status** - status of the process instance, possible values:
  - **CREATED** - the status is visible if there is an error in the process creation. If there is no error, the "Started" status is displayed.
  - **STARTED** - indicates that the process is currently running
  - **DISMISSED** - the status is available for processes with subprocesses, it is displayed when a user stops a subprocess
  - **EXPIRED** - the status is displayed when the "expiryTime" field is defined in the process definition and the defined time has passed.
  - **FINISHED** - the process has successfully completed its execution
- **Process definition** - the name of the process definition
- **Active process instance** - the UUID of the process instance, with a copy action available

- **Variables** - displayed as an expanded JSON

Process definition: **Awesome Process**    Active process instance: **12156183...** 



**Variables**   Tokens   Subprocesses   Exceptions **10**

```
processInstanceId: 619702
tokenId: 619752
tokenUuid: "147aa0c4-d961-4154-8af6-3422e1d34fb6"
websocketPath: "/ws/updates/process"
processInstanceUuid: "12156183-b40d-4cee-b0e0-e296371cedbf"
websocketAddress: "wss://public.qa.flowxai.dev/12156183-b40d-4cee-b0e0-e296371cedbf"
```

- **Tokens** - a token represents the state within the process instance and describe the current position in the process flow

Process definition: **Awesome Process**    Active process instance: **12156183...** 

Variables   **Tokens**   Subprocesses   Exceptions **10**

Token uuid	Token Status	Status Current Node	Date updated	
147aa0c4-d961-4154-8af6-3422e1d34fb6	ACTIVE	EXECUTED_COMPLETE	09 Aug 2022, 4:06 PM	 

### INFO

For more information about token status details, [here](#).







- **Subprocesses** - **!** displayed only if the current  
The fallback content to display on prerendering  
generated a **subprocess** instance

- **Exceptions** - errors that let you know where the process is blocked, with a direct link to the node where the process is breaking for easy editing

Process definition: **Awesome Process**    Active process instance: **12156183...** 



Variables   Tokens   Subprocesses   **Exceptions 10**

Source	Message	Type	Timestamp	
NODE (start Node)	Outgoing node for process instance not fo...	Node Definition	09 Aug 2022 at 4:06 F	 
NODE (start Node)	Outgoing node for process instance not fo...	Node Definition	09 Aug 2022 at 4:06 F	 
NODE (start Node)	Outgoing node for process instance not fo...	Node Definition	09 Aug 2022 at 4:06 F	 




### ! INFO

For more information on token status details and exceptions, check the following section:

» **Failed process start**

- **Audit Log** - the audit log displays events registered for process instances, tokens, tasks, and exceptions in reverse chronological order by timestamp

Variables   Tokens   Subprocesses   **Audit Log**   Exceptions 1

Timestamp	User	Subject	Event	Subject Identifier	Status	
06 Oct 2022, 1:54 PM	john.doe@email.com	Exception	View	-	-	
06 Oct 2022, 1:54 PM	system	Exception	Created	714951	-	
06 Oct 2022, 1:54 PM	john.doe@email.com	Process Instance	Start	a310c7b5-fb1c-4cfd-9b61-6badd174	success	

[» Audit](#)

## Process menu

In the breadcrumb menu (top-right corner), you can access the following:

- **Go to process definition** - opens the process for editing
- **Version** - version of the process definition
- **Started** - timestamp for when the process instance started
- **Ended** - timestamp for when the process instance ended

The screenshot shows a breadcrumb menu with a blue button labeled 'CREATED' and a circular menu icon with three vertical dots. A dropdown menu is open, displaying the following information:

- [Go to process definition](#) (with a blue arrow icon)
- Version: **4** (the number 4 is inside a blue circle)
- Started: 09 Aug 2022 at 9:36 PM
- Ended: -

In the background, the text '409a' and 'bf42' is visible on a grid.



## Color coding

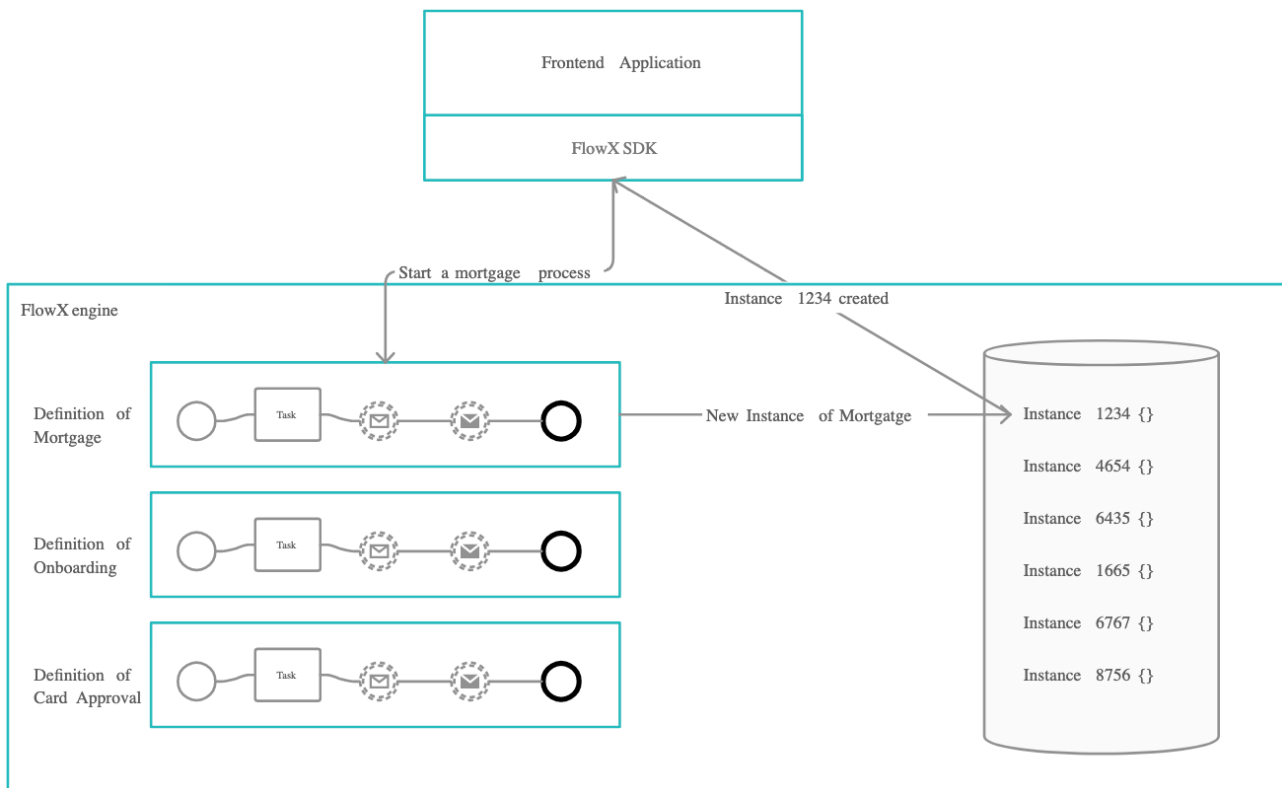
In the **Process Status** view, some nodes are highlighted with different colors to easily identify any failures:

- **Green** - nodes highlighted with green mark the nodes passed by the **token**
- **Red** - the node highlighted with red marks the node where the token is stuck (process failure)

Process uuid	Definition name	Status	Current Node Name	Start date
a2f7f1ef-ad39-4c00-8e58-492059f6e670	test_render_proc_instance	STARTED	Step	22 Jul 2022, 4:41 PM
e14bcfd3-a10e-4599-b0b4-e76669685fed	test_render_proc_instance	CREATED	Start	22 Jul 2022, 4:37 PM
037a6efe-0949-4f2b-ac8e-a94afe88d287	test_render_proc_instance	FINISHED	End	22 Jul 2022, 4:34 PM
0df92b59-6195-472a-bb7e-cb9cd98e0ad0	test_render_proc_instance	STARTED	Step	22 Jul 2022, 4:33 PM
2d403707-c480-48d0-a7ce-1d1603fa0ebc	test_render_proc_instance	STARTED	Step	22 Jul 2022, 4:31 PM
4fbe4e81-09a6-49d0-9f0b-aba566b896d8	test_render_proc_instance	CREATED	Step	22 Jul 2022, 4:04 PM

## Starting a new process instance

To start a new process instance, a request must be made to the **FLOWX Engine**. This is handled by the web/mobile application. The current user must have the appropriate role/permission to start a new process instance.



To be able to start a new process instance, the current user needs to have the appropriate role/permissions:

» [Configuring access roles for processes](#)

When starting a new process instance, we can also set it to [inherit some values from a previous process instance](#).

## Troubleshooting possible errors

If everything is configured correctly, the new process instance should be visible in the UI and added to the database. However, if you encounter issues, here are

some common error messages and their possible solutions: Possible errors include:

Error Message	Description
<i>"Process definition not found."</i>	The process definition with the requested name was not set as published.
<i>"Start node for process definition not found."</i>	The start node was not properly configured.
<i>"Multiple start nodes found, but start condition not specified."</i>	Multiple start nodes were defined, but the start condition to choose the start node was not set.
<i>"Some mandatory params are missing."</i>	Some parameters set as mandatory were not included in the start request.
HTTP code 403 – Forbidden	The current user does not have the process access role for starting that process.
HTTP code 401 – Unauthorized	The current user is not logged in.

**Was this page helpful?**

# BUILDING BLOCKS / Process Designer / Active process / Failed process start

## Exceptions

Exceptions are types of errors meant to help you debug a failure in the execution of a process.

Exceptions			
		Filter by definition name ^	Filter by date
Definition name	Message	Cause Type	Timestamp
Amazing Process	Start node for process definition not f...	-	10 Aug 2022 at 3:38 PM
Super Process	Process definition not found.	-	10 Aug 2022 at 12:09 PM
Awesome Process	Multiple start nodes found, but start c...	-	09 Aug 2022 at 4:19 PM
Exquisite Process	Multiple start nodes found, but start c...	-	09 Aug 2022 at 4:18 PM
Astonishing Process	Process definition not found.	-	09 Aug 2022 at 3:12 PM
Stunning Process	Process definition not found.	-	09 Aug 2022 at 2:39 PM
Shocking Process	Process definition not found.	-	05 Aug 2022 at 3:46 PM
Staggering Process	Process definition not found.	-	05 Aug 2022 at 3:38 PM

Exceptions can be accessed from multiple places:







- **Failed process start** tab from **Active process** menu in FLOWX Designer

- **Process Status** view, accessible from **Process instances** list in FLOWX Designer

Process definition: **Awesome Process**    Active process instance: **12156183...** 



Variables   Tokens   Subprocesses   **Exceptions 10**

Source	Message	Type	Timestamp	
NODE (start Node)	Outgoing node for process instance not fo...	Node Definition	09 Aug 2022 at 4:06 F	 
NODE (start Node)	Outgoing node for process instance not fo...	Node Definition	09 Aug 2022 at 4:06 F	 
NODE (start Node)	Outgoing node for process instance not fo...	Node Definition	09 Aug 2022 at 4:06 F	 

### CAUTION

If you open a process instance and it does not contain exceptions, the **Exceptions** tab will not be displayed.

## Exceptions data

When you click **view** button, a detailed exception will be displayed.

## Exceptions: 619820

<b>Process Definition:</b>	Awesome Process	<b>Cause Type:</b>	START_EVENT
<b>Source:</b>	NODE (start Node)	<b>Process Instance UUID:</b>	12156183-b40d-4cee-b0e0-e296371cedbf
<b>Message:</b>	Outgoing node for process instance not found.	<b>Token UUID:</b>	147aa0c4-d961-4154-8af6-3422e1d34fb6
<b>Type:</b>	Node Definition	<b>Timestamp:</b>	09 Aug 2022 at 4:06 PM

### Details

```
1 [ai.flowx.engine.definitions.dto.NodeDTOWrapper.lambda$getOutgoingNodeMandatory$4(NodeDTOWrapper.java:45),
  java.base/java.util.Optional.orElseThrow(Optional.java:408), ai.flowx.engine.definitions.dto.NodeDTOWrapper.
  getOutgoingNodeMandatory(NodeDTOWrapper.java:45), ai.flowx.engine.instance.service.impl.
  NodeProcessorServiceImpl.getNextNodeId(NodeProcessorServiceImpl.java:249), ai.flowx.engine.instance.service.
  impl.NodeProcessorServiceImpl.process(NodeProcessorServiceImpl.java:155), ai.flowx.engine.instance.service.
  impl.NodeProcessorServiceImpl$$FastClassBySpringCGLIB$$$badf4a43.invoke(<generated>), org.springframework.
  cglib.proxy.MethodProxy.invoke(MethodProxy.java:218), org.springframework.aop.framework.
  CglibAopProxy$CglibMethodInvocation.invokeJoinpoint(CglibAopProxy.java:779), org.springframework.aop.
  framework.ReflectiveMethodInvocation.proceed(ReflectiveMethodInvocation.java:163), org.springframework.aop.
  framework.CglibAopProxy$CglibMethodInvocation.proceed(CglibAopProxy.java:750), org.springframework.aop.
  aspectj.MethodInvocationProceedingJoinPoint.proceed(MethodInvocationProceedingJoinPoint.java:89), ai.flowx.
  commons.trace.aop.JaegerTraceAspect.around(JaegerTraceAspect.java:52), jdk.internal.reflect.
  GeneratedMethodAccessor582.invoke(Unknown Source), java.base/jdk.internal.reflect.
  DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.java:43), java.base/java.lang.reflect.Method.
  invoke(Method.java:566), org.springframework.aop.aspectj.AbstractAspectJAdvice.invokeAdviceMethodWithGivenArgs
  (AbstractAspectJAdvice.java:634), org.springframework.aop.aspectj.AbstractAspectJAdvice.invokeAdviceMethod
  (AbstractAspectJAdvice.java:624), org.springframework.aop.aspectj.AspectJAroundAdvice.invoke
  (AspectJAroundAdvice.java:72), org.springframework.aop.framework.ReflectiveMethodInvocation.proceed
  (ReflectiveMethodInvocation.java:175), org.springframework.aop.framework.CglibAopProxy$CglibMethodInvocation.
  proceed(CglibAopProxy.java:750)]
```

- **Process Definition** - the process where the exception was thrown
- **Source** - the source of the exception (see the possible type of **sources** below)
- **Message** - a hint type of message to help you understand what's wrong with your process

- **Type** - exception type
- **Cause Type** - cause type (or the name of the node)
- **Process Instance UUID** - process instance unique identifier
- **Token UUID** - token unique identifier
- **Timestamp** - default format: `yyyy-MM-dd'T'HH:mm:ss.SSSZ`
- **Details** - stack trace (a **stack trace** is a list of the method calls that the process was in the middle of when an **Exception** was thrown)

#### Possible sources:

- Action
- Node
- Subprocess
- Process Definition

## Exceptions type

Based on the exception type, there are multiple causes that could make a process fail. Here are some examples:

Type	Cause
Business Rule Evaluation	when executing action rules fails for any reason
Condition Evaluation	when executing action conditions

Type	Cause
Engine	when the connection with the database fails  when the connection with Redis fails
Definition	misconfigurations: process def name, subprocess parent process id value, start node condition missing
Node	when an outgoing node can't be found (missing sequence etc)
Gateway Evaluation	when the token can't pass a gateway for any reason, possible causes: <ul style="list-style-type: none"><li>• missing sequence/node</li><li>• failed node rule</li></ul>
Subprocess	exceptions will be saved for them just like for any other process, parent process ID will also be saved (we can use this to link them when displaying exceptions)

**Was this page helpful?**