

29-09-2020

# Informatica 10.4.x - CI/CD Features

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# Housekeeping Tips



- Today's Webinar is scheduled for **1 hour**
- The session will include a webcast and then your questions will be answered live at the end of the presentation
- All dial-in participants will be muted to enable the speakers to present without interruption
- Questions can be submitted to "All Panelists" via the **Q&A option** and we will respond at the end of the presentation
- The webinar is **being recorded** and will be available to view on our **INFASupport YouTube channel** and **Success Portal**. The link will be emailed as well.
- Please take time to complete the **post-webinar survey** and provide your feedback and suggestions for upcoming topics.

# Feature Rich Success Portal

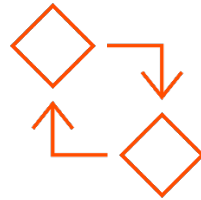
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Bootstrap trial and  
POC Customers



Enriched Customer  
Onboarding  
experience



Product Learning  
Paths and Weekly  
Expert Sessions



Informatica  
Concierge with  
Chatbot integrations



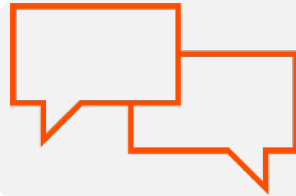
Tailored training and  
content  
recommendations

# More Information



## Success Portal

<https://success.informatica.com>



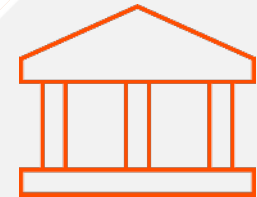
## Communities & Support

<https://network.informatica.com>



## Documentation

<https://docs.informatica.com>



## University

<https://www.informatica.com/in/services-and-training/informatica-university.html>

# Safe Harbor

The information being provided today is for informational purposes only. The development, release, and timing of any Informatica product or functionality described today remain at the sole discretion of Informatica and should not be relied upon in making a purchasing decision.

Statements made today are based on currently available information, which is subject to change. Such statements should not be relied upon as a representation, warranty or commitment to deliver specific products or functionality in the future.

What is CI/CD?

Delivery VS Deployment?

# Agenda

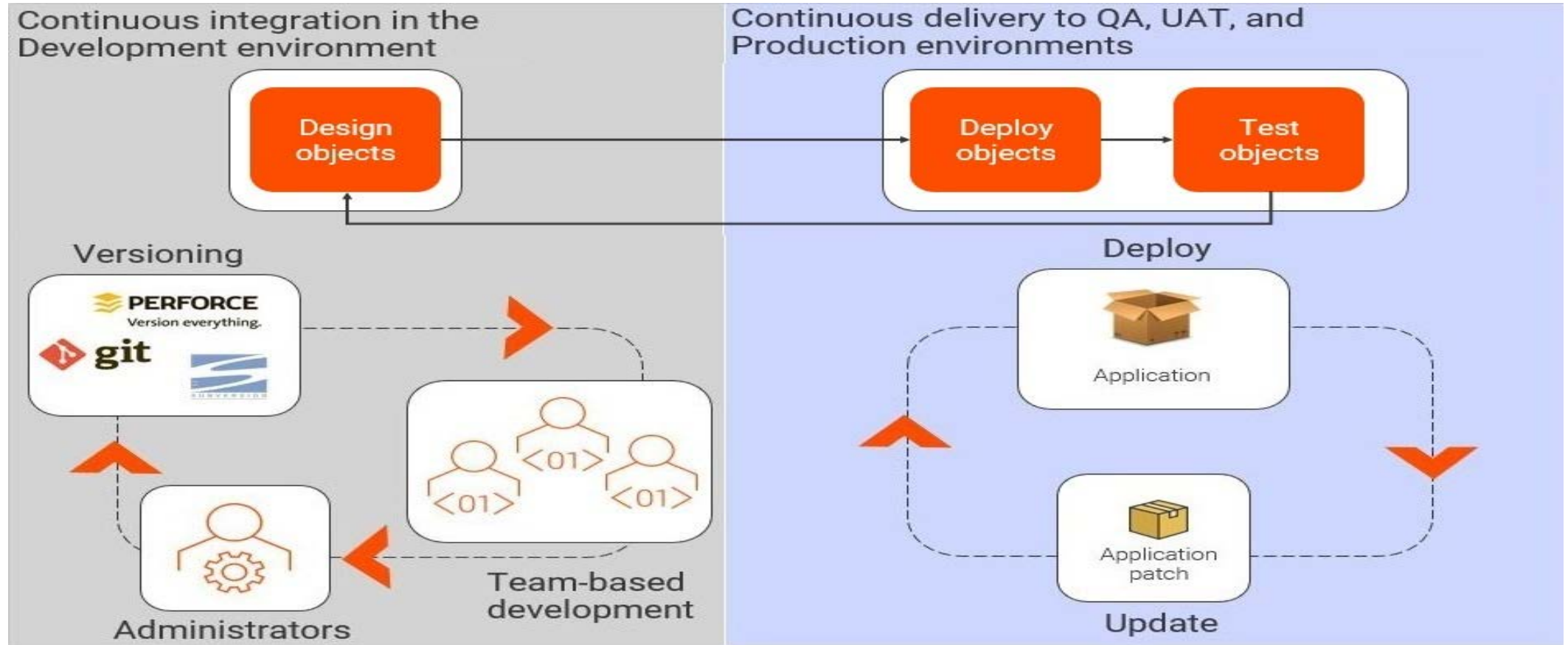
- Design-Deploy-test framework
  - Understanding Design and runtime object
- Operations
  - CI
  - CD
- Infacmd v/s Rest API
- Developer tool view
- REST endpoint capabilities
- Object Queries
- Trigger types
- Sample Architecture for CI/CD.
- Q&A

# CI/CD - A Design-Deploy-Test framework

- The Design step involves continuous integration (CI).
  - Developers design objects in a Model repository and continuously integrate those objects in the Model repository.
- The Deploy and Test steps are part of continuous delivery (CD).
  - CD builds on top of CI to ensure that the objects that developers create are continuously built and deployed to DIS within or across environments for testing.
- Automation into your CI/CD pipeline.
  - Automation ensures that integration and delivery operations are fully automated, logged, and visible to the entire team. You can implement automation using the Data Integration Service REST API or the infacmd command line programs.

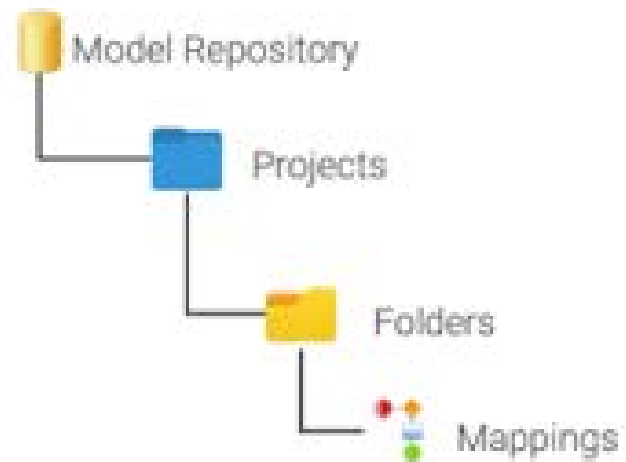


# CI/CD - A Design-Deploy-Test framework



# Understanding Design-time and Run-time Objects

## Design-time



## Run-time



# Continuous Integration

- Query design-time objects
- Compare objects
- Check in an object
- Check out an object
- Undo a check-out
- Unlock an object
- List checked-out objects
- List locked objects
- Tag an object
- Replace object tags
- Untag an object

# Continuous Delivery

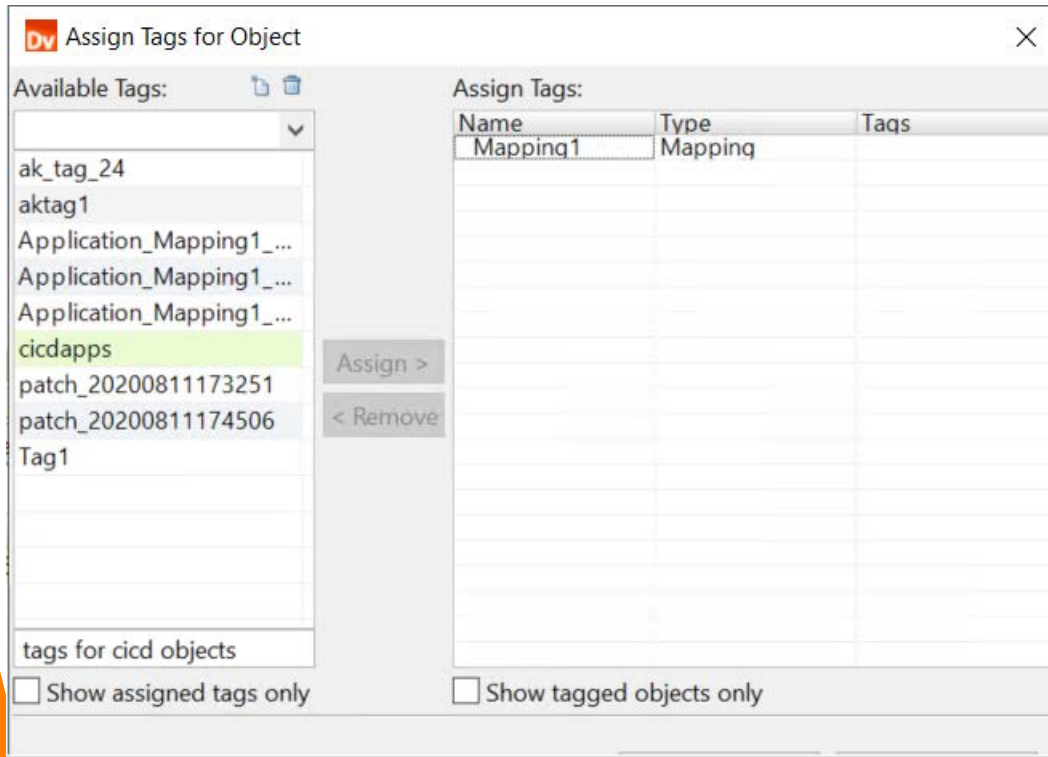
- Query run-time objects
- Deploy an application
- Start an application
- Stop an application
- Undeploy an application
- Deploy objects to an application patch
- Update an application
- Run a deployed mapping
- Rename an application^
- Backup an application^
- Restore an application^
- List applications^
- List application objects^
- List parameter sets^

^infacmd only

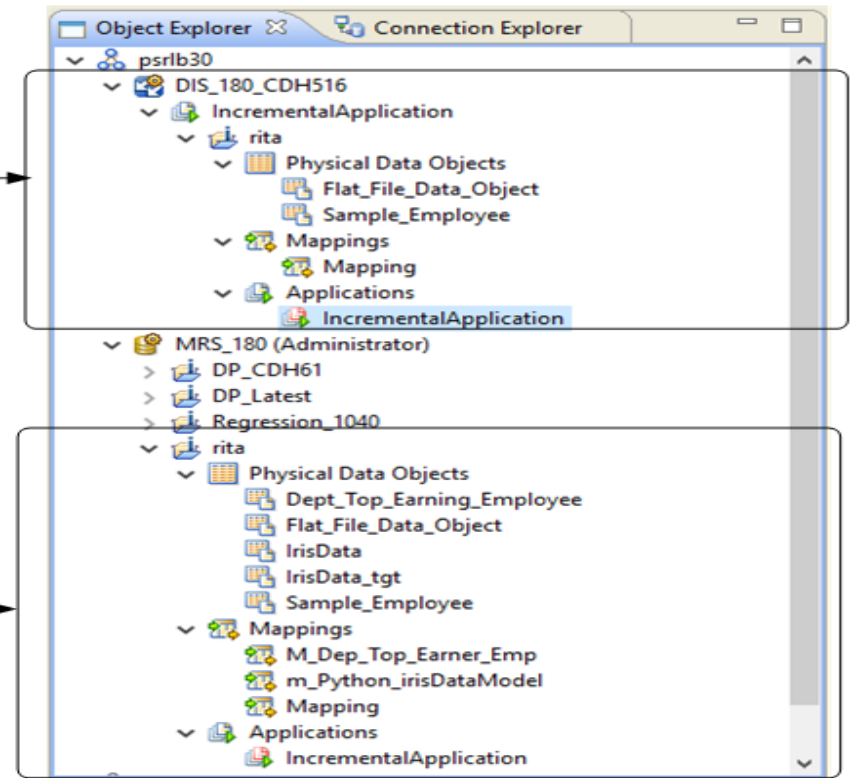
# Infacmd v/s Rest API

- Performance
- Client setup
- Functionality

# Developer tool



Only run-time application



All design-time objects

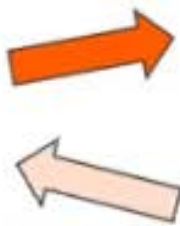
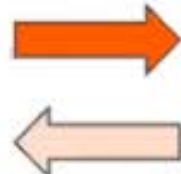
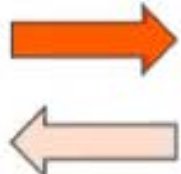
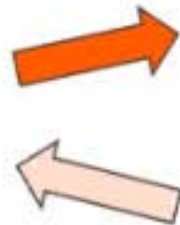
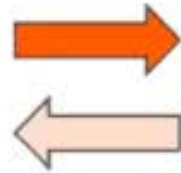
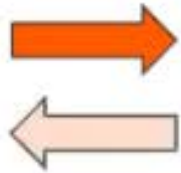
# REST Endpoint for DIS Capabilities

- REST capability powered by Swagger
- REST API documentation integrated with product
- Documentation accessed as :  
<http://{DISHost}:{DISHttpPort}/DataIntegrationService/modules/docs>
- Auth via DIS username/password in HTTP header
- Passwords to be encrypted using pmpasswd
  - Encryption Option - **CRYPT\_DATA**
  - Example:
    - C:\Informatica\10.2.2\server\bin>pmpasswd **Administrator** -e **CRYPT\_DATA**

Objects		Interact with design time repository objects
GET	/core/v1/objects	Get repository objects
POST	/core/v1/objects	Manage repository objects
POST	/core/v1/objects/version	Version control objects
PUT	/core/v1/objects/tags/{tag}	Tag repository objects
POST	/core/v1/objects/tags/{tag}	Replace repository object tags
DELETE	/core/v1/objects/tags/{tag}	UnTagging repository objects
Applications		Interact with run time applications
GET	/core/v1/apps/objects	Get Runtime Objects
PUT	/core/v1/apps/{application}	Deploy an application
POST	/core/v1/apps/{application}	Update an application
DELETE	/core/v1/apps/{application}	Undeploy an application
POST	/core/v1/apps/{application}/state	Start or Stop an application
Mapping Service		Interact with mapping service
POST	/ms/v1/apps/{application}/mappings/{mapping}	Engage a deployed
Utilities		Data integration service utilities
POST	/core/v1/objects/compare	Compare two queried objects

# Execution:

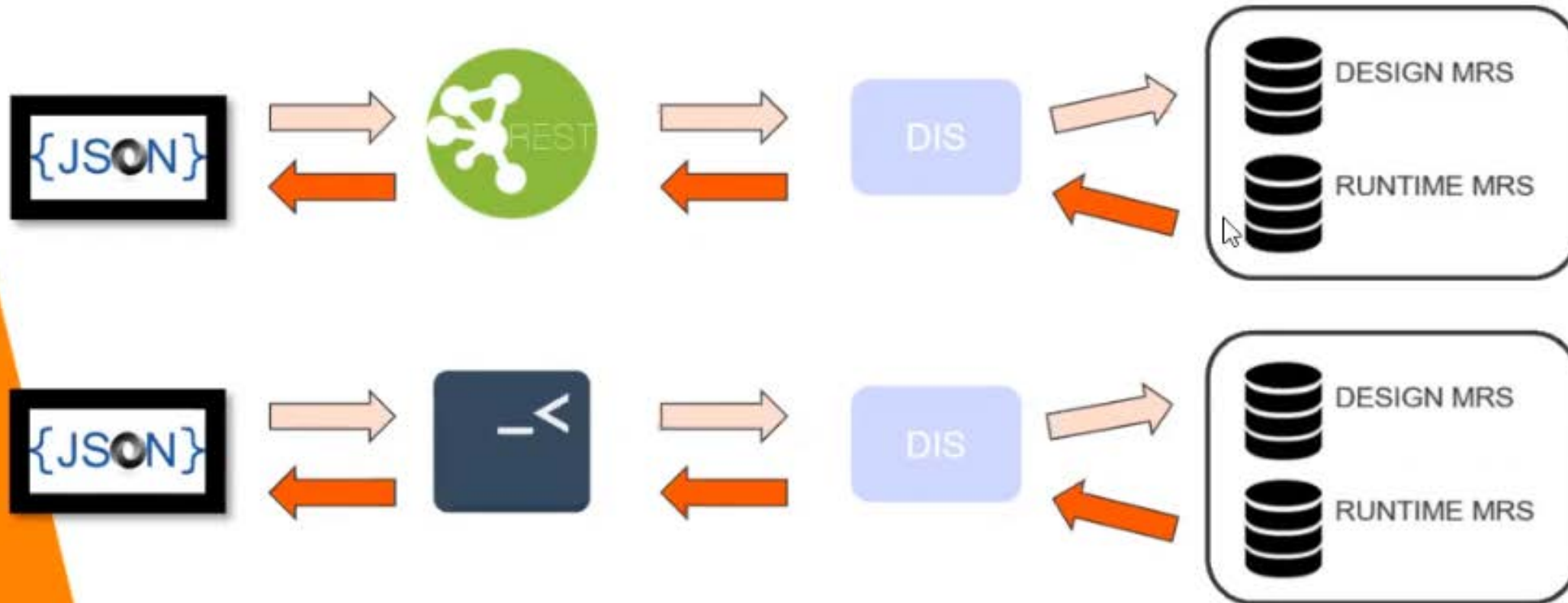
Query Expressions





## Result:

- Returns the response report in json format.
- Performs action if any specified (Export, Deploy, RunMapping etc.)



# Design-Time Object Query

✓ Query design-time objects based on attributes, operations and join clause

Attributes	Supported Operations	Join Clause	Example
Object name Label name Created By Last modified By	contains not-contains not-ends-with not-starts-with ends-with starts-with = != in not-in	! && 	<b>Query_1</b> -: name ~contains~ Mapping && name ~not-contains~ Test <b>Query_2</b> -: label ~in~ (lbl_1, lbl_2, lbl_3) <b>Query_3</b> -: name ~not-starts-with~ M_ && ! name ~contains~ 1 && createdBy = Administrator && lastModifiedBy ~ends-with~ visitor
Folder name Project name	contains not-contains not-ends-with not-starts-with ends-with starts-with = != in not-in		<b>Query_4</b> -: name ~contains~ Mapping where project ~ends-with~ _1, folder ~not-in~ (Folder_1,Folder_2) <b>Query_5</b> -: name ~not-starts-with~ M_ && ! name ~contains~ 1    createdBy = Administrator && lastModifiedBy ~ends-with~ trator where project ~contains~ Project, folder ~not-in~ (Folder_3, Folder_2) <b>Query_6</b> -: (name ~not-starts-with~ M_ && (! name ~contains~ 1    createdBy = Administrator) && lastModifiedBy ~ends-with~ trator) where project ~contains~ Project, folder ~not-in~ (Folder_3, Folder_2) <b>Query_7</b> -: all where project=Project_1, folder=Folder_1 <b>Query_8</b> -: name = Mapping where project=Project_1, folder=/Folder_1/Folder_2/ <b>Query_9</b> -: name = Mapping where project=Project_1, folder=/

# Design-Time Object Query

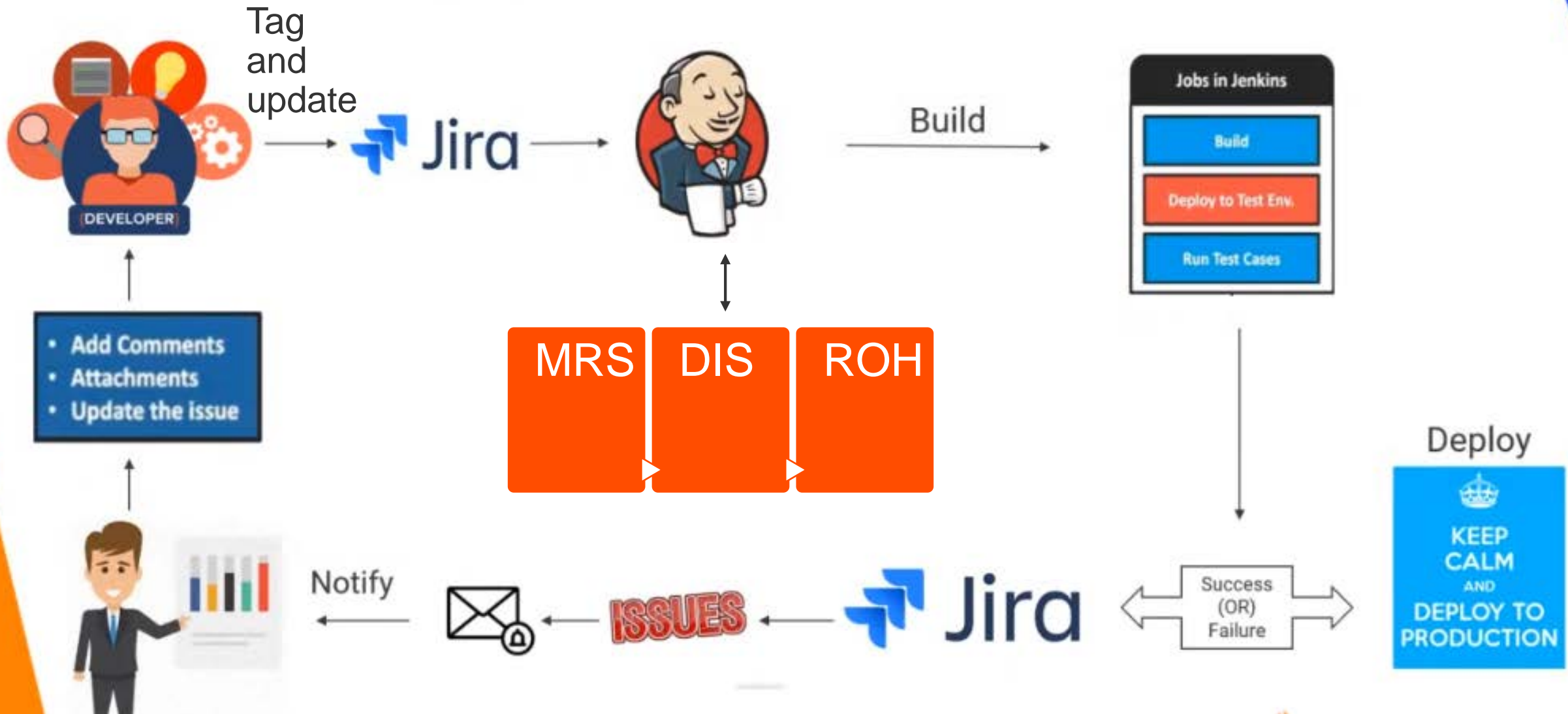
✓ Query design-time objects based on attributes, operations and join clause

Attributes	Supported Operations	Join Clause	Example
Creation time	>		<b>Query_10</b> -: creationTime > 2018-12-26 20:32:54    lastModifiedTime > 2019-02-26 20:32:54
Last modified time	<	!	
	within-last	&&	<b>Query_11</b> -: checkOutTime ~within-last~ 10 (days)
Check-in time	between		<b>Query_12</b> -: checkInTime ~between~ (2018-12-26 20:32:54, 2018-05-26 20:32:54)
Check-out time	not-between		where project ~ends-with~ _1, folder ~starts-with~ F
Version status	is-checkedin is-checkedout	! && 	<b>Query_13</b> -: versionStatus ~is-checkedin~ where folder=/F1/F2/ <b>Query_14</b> -: versionStatus ~is-checkedout~

# Trigger points

- Jira web hooks
- VCS web hooks
- Periodic scheduled jobs

# Demo Architecture




# Useful links for Jira-Jenkins integration

- [Jira Jenkins Integration](#)
- Jenkins Plugins needed →
- [Git hub credential caching](#)

This plugin exposes the Jackson 2 JSON APIs to other Jenkins plugins.

<input checked="" type="checkbox"/>	<a href="#">JIRA Pipeline Steps</a> JIRA Pipeline Steps	<a href="#">1.6.0</a>
<input checked="" type="checkbox"/>	<a href="#">Jira plugin</a> This plugin integrates Jenkins to <a href="#">Atlassian Jira</a> .	<a href="#">3.1.1</a>
<input checked="" type="checkbox"/>	<a href="#">JIRA Trigger Plugin</a> JIRA Trigger	<a href="#">1.0.0</a>
<input checked="" type="checkbox"/>	<a href="#">jira-ext Plugin</a> A plugin for Jenkins CI to update JIRA tickets in an extensible way: both what to update and how to update are exposed as Extension Points	<a href="#">0.9</a>

# Sample Jira Issue with Custom fields

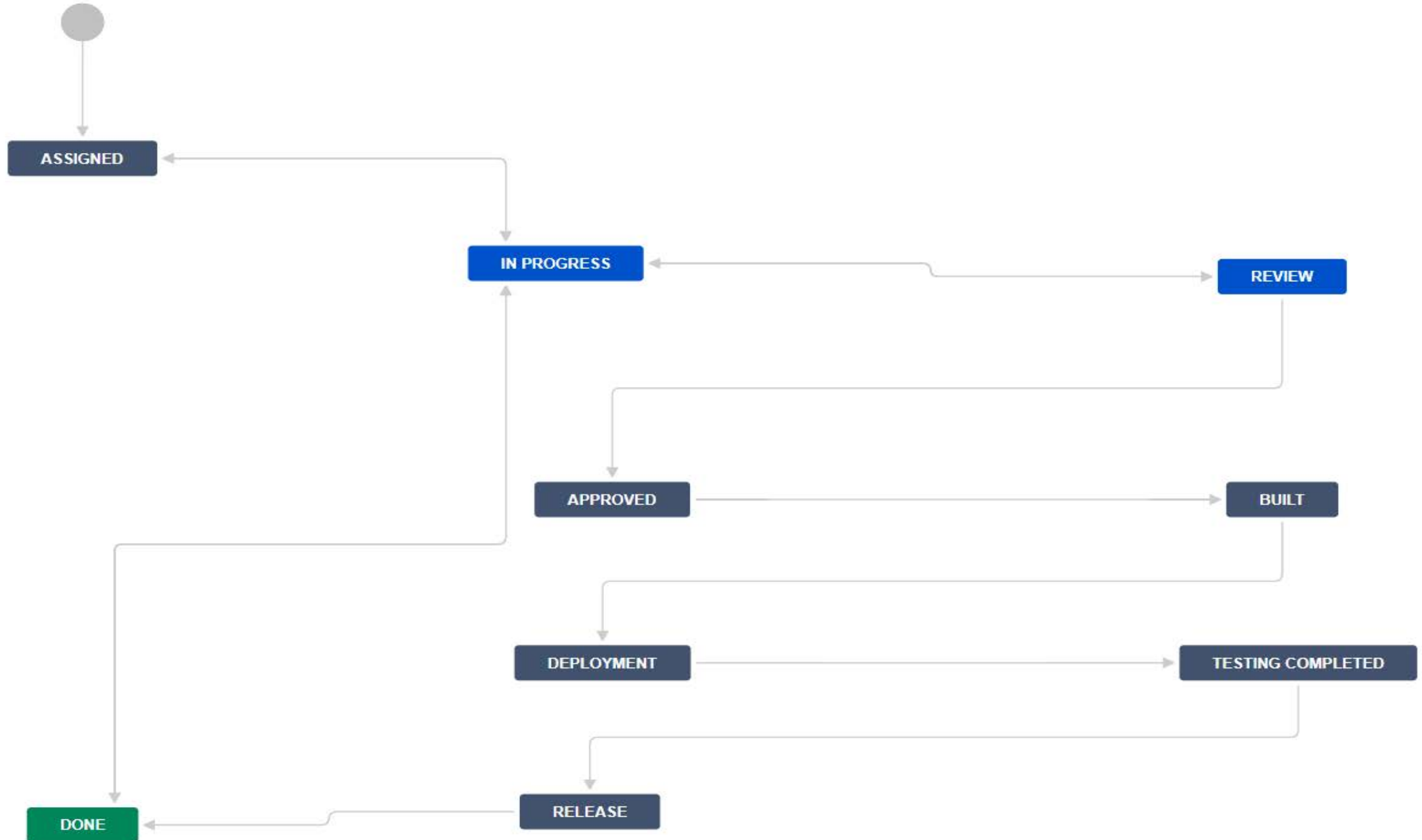
 **TECH** / TECH-1  
**Add an expression to concat names**

[Edit](#) [Comment](#) [Assign](#) [More](#) [Verified](#) [Admin](#)

▼ **Details**

Type:	<input checked="" type="checkbox"/> Task	Status:	<b>RELEASE</b> <a href="#">(View Workflow)</a>
Priority:	Medium	Resolution:	Unresolved
Labels:	None		
Domain:	D_02809502		
MRS:	MRS_CICD_DEMO		
DIS:	DIS_CICD_DEMO		
ApplicationName:	Application_Mapping1		
Tagname:	cicdapps		
patchnumber:	Test01		

# Jira issue workflow graph





# Jira webhooks triggers post requests on all selected events

## New WebHook Listener

**ENABLED** last updated 30/Jul/20 6:44 PM by asable@informatica.com

URL <http://inorchids01:8080/jira-trigger-webhook-receiver/>

Events **Issue related events**

JQL:All issues

**Comment:** created, updated, deleted

**Issue link:** created, deleted

**Issue:** created, updated, deleted, worklog changed

**Worklog:** created, updated, deleted

**Project related events**

**Version:** released, unreleased, created, moved, updated, merged, deleted

**Project:** created, updated, deleted, archived, restored

**User related events**

**User:** created, deleted, updated

**Jira configuration related events**

**Features status change (enabled/disabled):** issue links

Exclude body No

Transitions No linked transitions.

Edit Delete

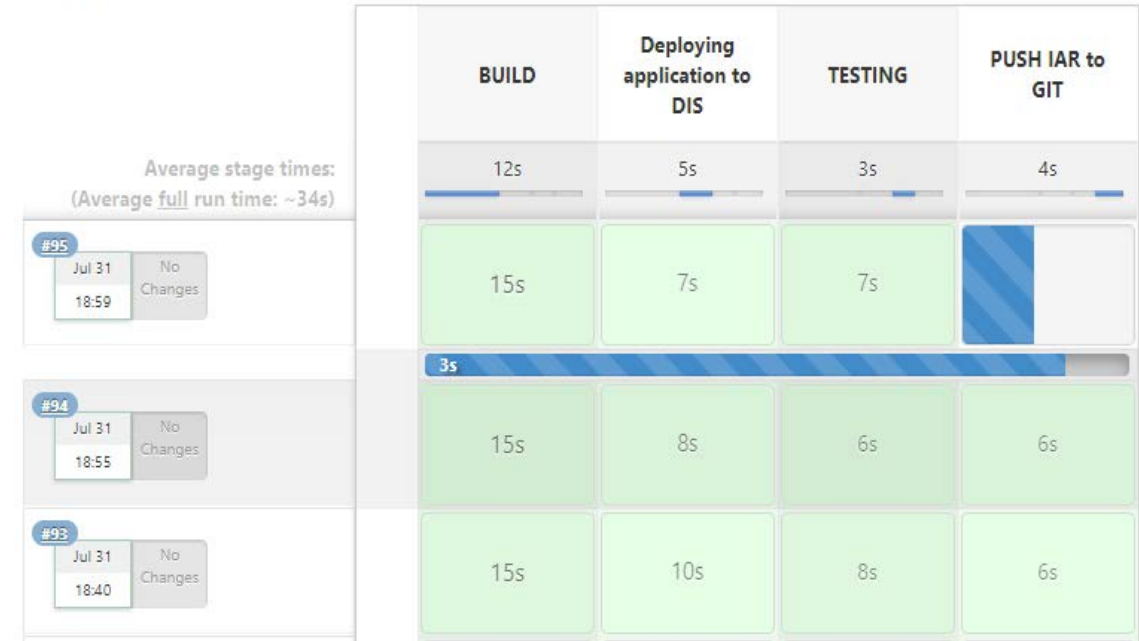
# At Jenkins configure build triggers and Add parameters to map Jira custom fields

The screenshot shows the Jenkins 'Build Triggers' configuration page. It includes tabs for 'General', 'Build Triggers', 'Advanced Project Options', and 'Pipeline'. Under 'Build Triggers', there are four checkboxes: 'Build after other projects are built', 'Build periodically', 'Build when a comment is added to JIRA', and 'Build when an issue is updated in JIRA' (which is checked). Below these is a 'JQL filter' field containing 'status='Approve''. A 'Changelog matcher' dropdown is set to 'Add changelog matcher'. The 'Parameter mapping' section contains four rows, each with a 'Jenkins parameter' and a 'Custom Field ID' or 'Issue attribute path'.

Section	Jenkins parameter	Value
Issue Attribute Path	JIRA_ISSUE_KEY	key
Custom Field	DOMAIN_NAME	10000
Custom Field	MRSNAME	10001
Custom Field	ApplicationName	10002

# Jenkins Pipeline with stages

## Stage View



## Pipeline

Definition

Pipeline script

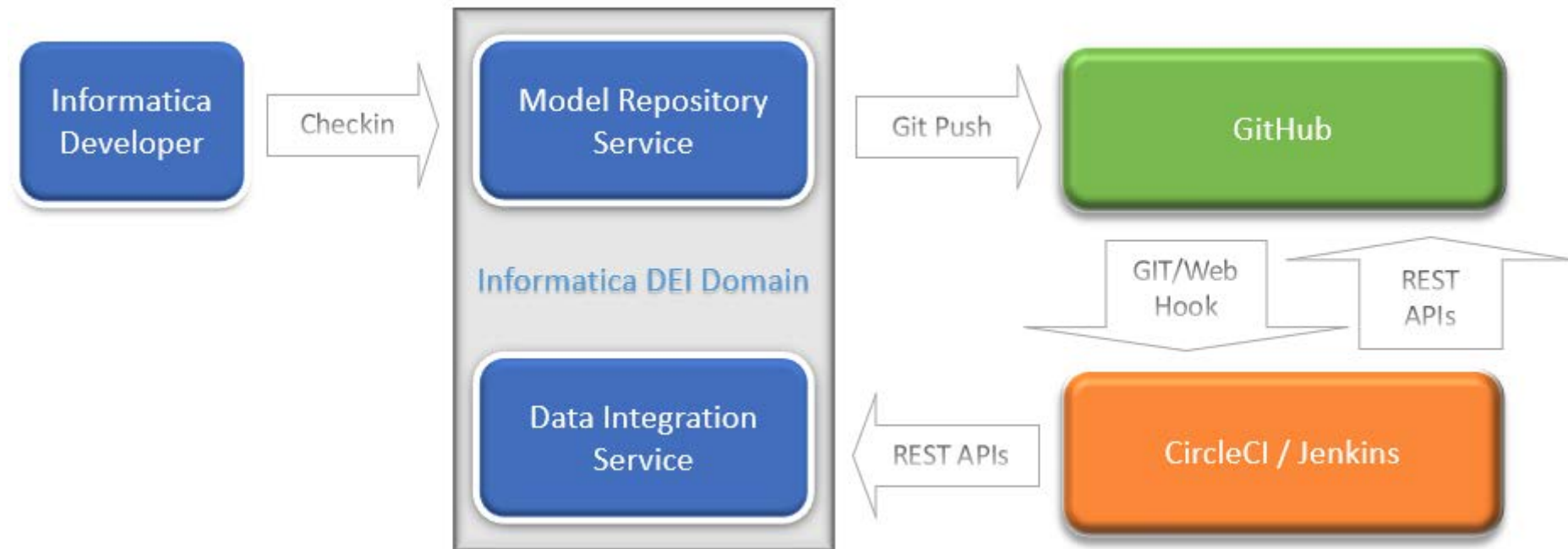
Script

```
1 pipeline {
2   agent any
3
4   stages {
5     stage('BUILD') {
6       steps {
7
8         /* withCredentials([[class: 'UsernamePasswordMultiBinding', credentialsId: 'pkumark',
9         usernameVariable: 'USERNAME', passwordVariable: 'PASSWORD']]) */
10
11         echo "${DOMAIN_NAME} ${MRSNAME}"
12         echo "${ApplicationName} ${Buildnumber}"
13         sh '/home/pkumark/jenkins/build.sh $DOMAIN_NAME $MRSNAME $ApplicationName $Application_path'
14         echo "Built IAR File for Application to be deployed"
15
16         jiraAddComment comment: 'Build Stage', idOrKey: 'DEMO-27', site: 'Jira'
17
18       }
19     }
20 }
```

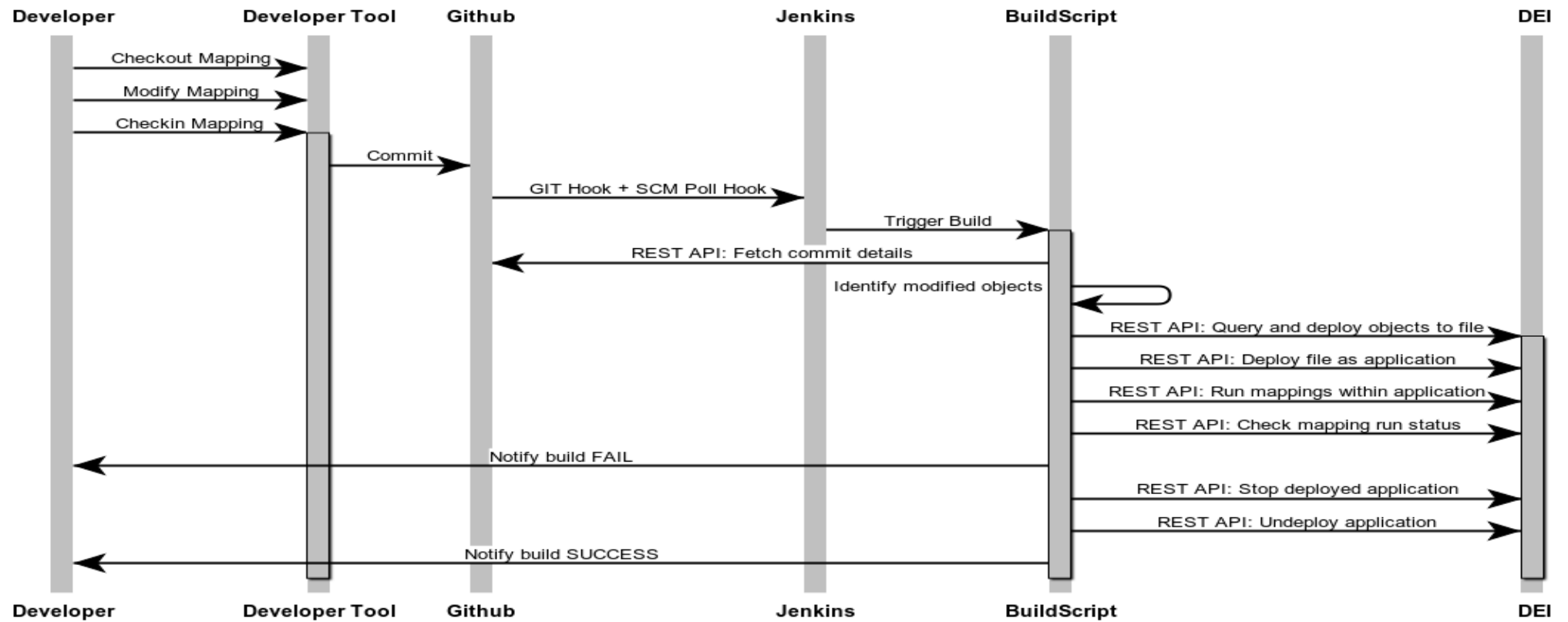
Use Groovy Sandbox

[Pipeline Syntax](#)

# VCS based web hooks



# VCS web hook



# Few hints

- [VCS Commit Hooks](#)
- [Jira-Jenkins hooks](#) :
- A sample configuration reference :
  - <https://medium.com/dev-blogs/configuring-jenkins-with-github-eef13a5cc9e9>
  - <https://circleci.com/docs/2.0/getting-started/#section=getting-started>
- Repo queries to find impacted applications as part of deployment.
  - ListApplicationObjects (or) tags or lastmodifieddate
- Deployment rollback options (in versioned MRS).
  - Undocheckout , Developer tool (manually)

Questions?



# Thank You

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