May 10th, 2022

Informatica 10.5 x CICD Features

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- 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 on our INFASupport YouTube channel and Success Portal - where you can download the slide deck for the presentation. The link to the recording will be emailed as well.
- Please take time to complete the post-webinar survey and provide your feedback and suggestions for upcoming topics.

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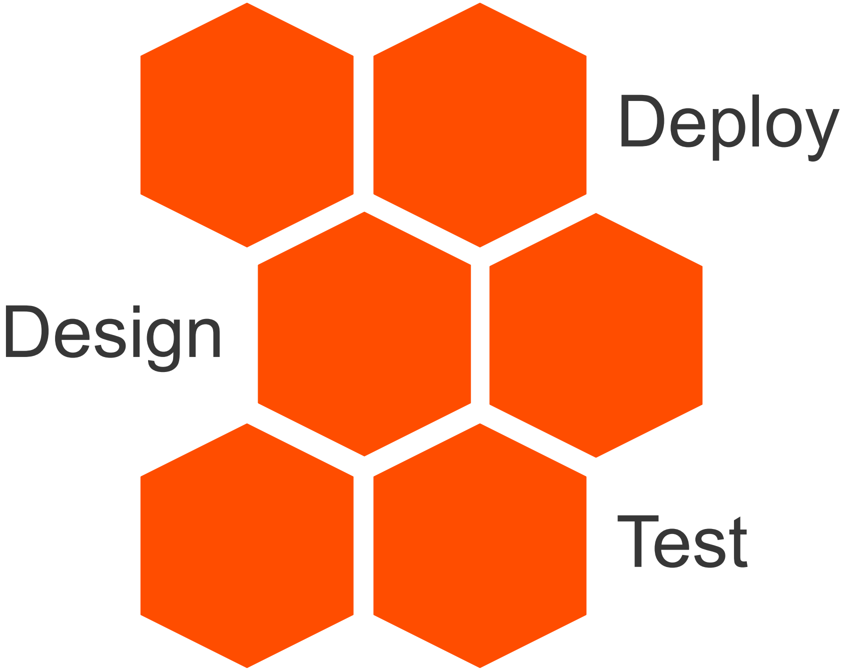
Agenda

- CI/CD
  - Introduction
  - Design-Deploy-test framework
  - Separation of Informatica Objects in Terms of CI/CD
  - What’s new in 10.5.x
- The Eco System
  - Architecture
  - Issue Tracking System
  - Version Control System
  - The Integration Tool
  - Trigger Points
- Demo

CI/CD

What is CI/CD

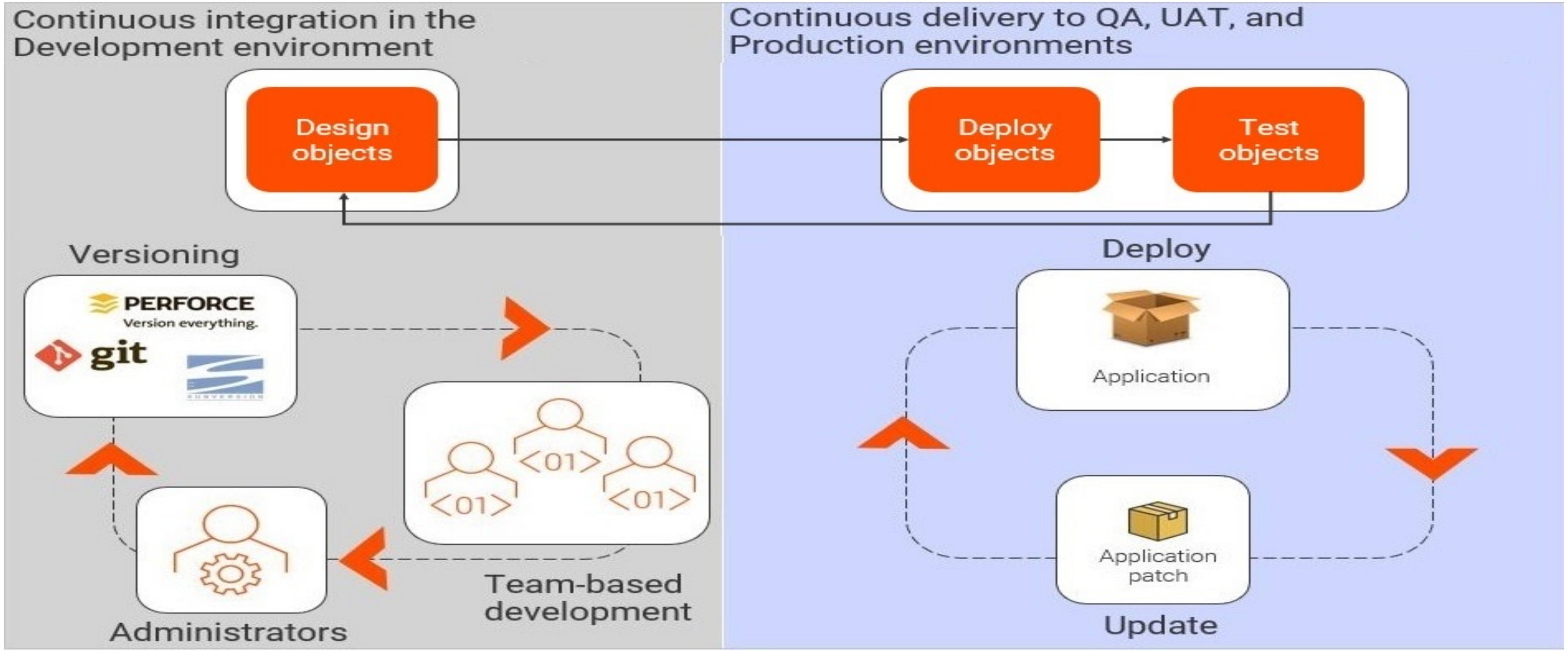
CI/CD is a method to frequently deliver apps to customers by introducing automation into the stages of app development.



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 QA and UAT 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.

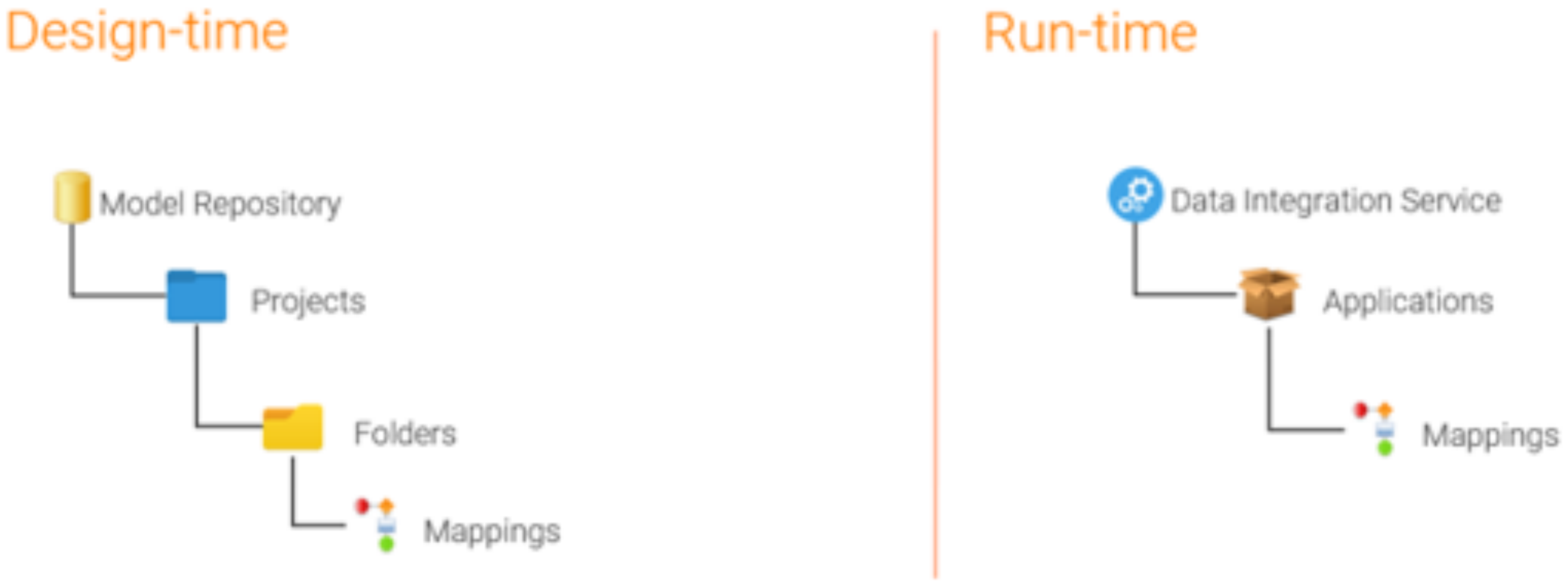
CI/CD - A Design-Deploy-Test framework



Continuous integration in the Development environment

Continuous delivery to QA, UAT, and Production environments

Understanding Design-time and Run-time Objects



Design-time

Model Repository

Projects

Folders

Mappings

Run-time

Data Integration Service

Applications

Mappings

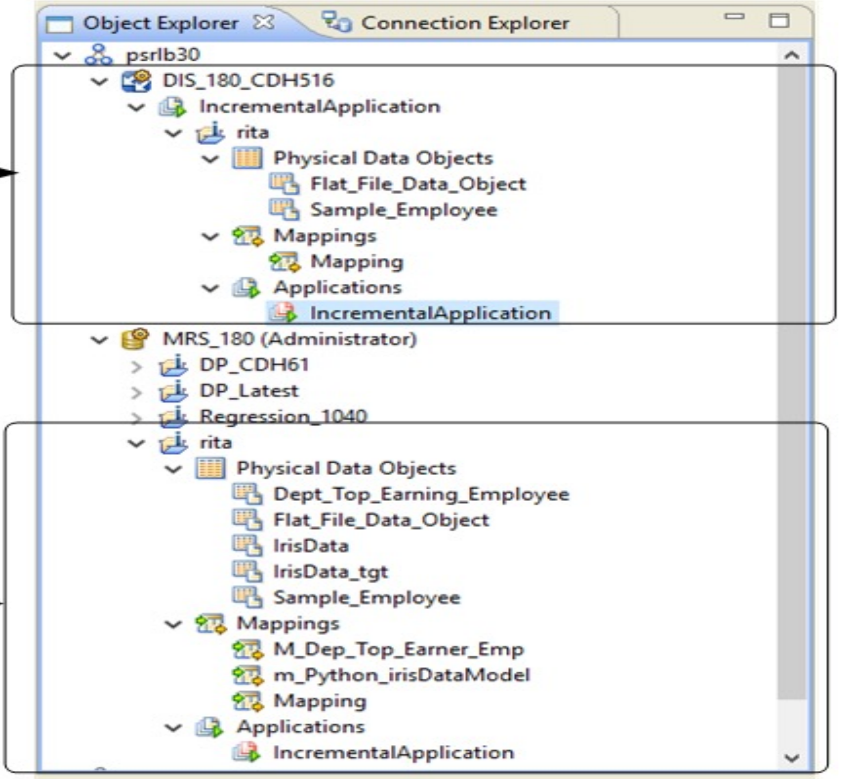
Understanding Design-time and Run-time Objects

- When a developer edits an object in the Developer tool, the developer works on the design-time version of the object.
- When the object is deployed as part of an application to a Data Integration Service, the Data Integration Service creates a copy of the object, known as the run-time version of the object.
- The run-time object is isolated from changes to the corresponding design-time object due to the objects' path structures.
- When you access a design-time object in the Developer tool, you access the object through the Model repository. In contrast, run-time objects are stored on the Data Integration Service.

Developer tool

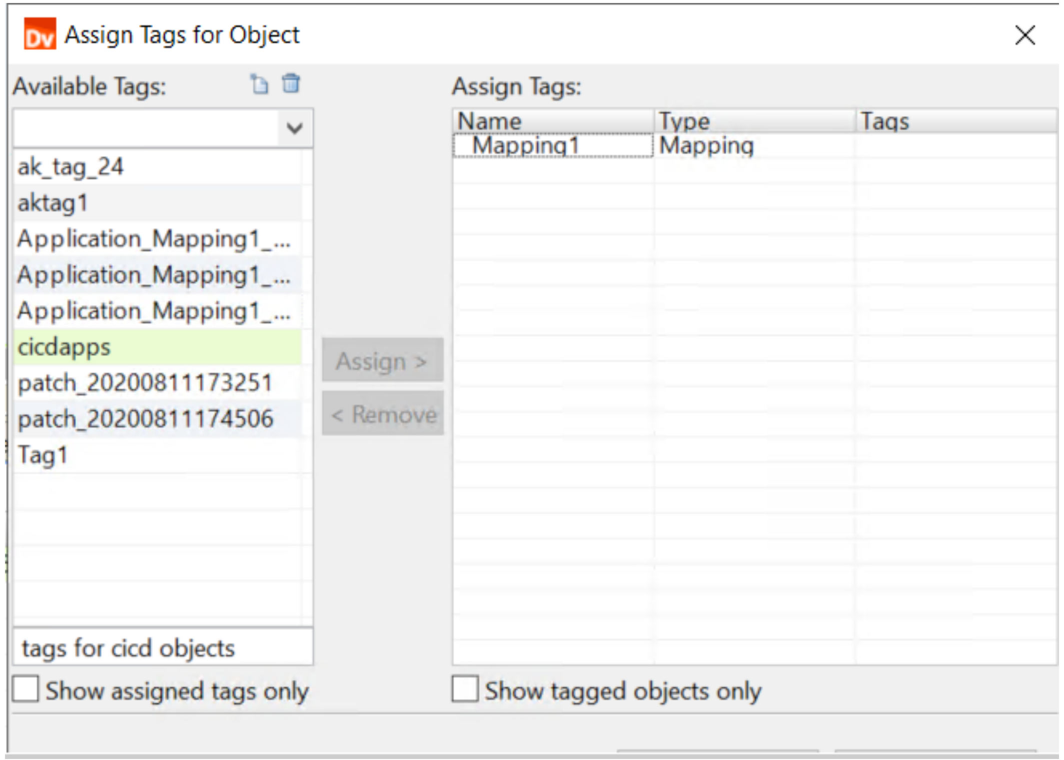
Only run-time application

All design-time objects



Object Explorer | Connection Explorer

- psrlb30
  - DIS_180_CDH516
    - IncrementalApplication
      - rita
        - Physical Data Objects
          - Flat_File_Data_Object
          - Sample_Employee
        - Mappings
          - Mapping
        - Applications
          - IncrementalApplication
  - MRS_180 (Administrator)
    - DP_CDH61
    - DP_Latest
    - Regression_1040
    - rita
      - Physical Data Objects
        - Dept_Top_Earning_Employee
        - Flat_File_Data_Object
        - IrisData
        - IrisData_tgt
        - Sample_Employee
      - Mappings
        - M_Dep_Top_Earner_Emp
        - m_Python_irisDataModel
        - Mapping
      - Applications
        - IncrementalApplication



Assign Tags for Object

Available Tags:

- ak_tag_24
- aktag1
- Application_Mapping1_...
- Application_Mapping1_...
- Application_Mapping1_...
- cicdapps
- patch_20200811173251
- patch_20200811174506
- Tag1

tags for cicd objects

☐ Show assigned tags only

Assign > | < Remove

Assign Tags:

Name	Type	Tags
Mapping1	Mapping	

☐ Show tagged objects only

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*

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	! && ||	**Query_1** -: name ~contains~ Mapping && name ~not-contains~ Test **Query_2** -: label ~in~ (lbl_1, lbl_2, lbl_3) **Query_3** -: 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		**Query_4** -: name ~contains~ Mapping where project ~ends-with~ _1, folder ~not-in~ (Folder_1,Folder_2) **Query_5** -: 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) **Query_6** -: (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) **Query_7** -: all where project=Project_1, folder=Folder_1 **Query_8** -: name = Mapping where project=Project_1, folder=/Folder_1/Folder_2/ **Query_9** -: 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 Last modified time Check-in time Check-out time	> < within-last between not-between	! && ||	**Query_10** -: creationTime > 2018-12-26 20:32:54 || lastModifiedTime > 2019-02-26 20:32:54 **Query_11** -: checkOutTime ~within-last~ 10 (days) **Query_12** -: checkInTime ~between~ (2018-12-26 20:32:54, 2018-05-26 20:32:54) where project ~ends-with~ _1,folder ~starts-with~ F
Version status	is-checkedin is-checkedout	! && ||	**Query_13** -: versionStatus ~is-checkedin~ where folder=/F1/F2/ **Query_14** -: versionStatus ~is-checkedout~

Continuous Delivery

- Query run-time objects*
- Deploy an application
- Start an application
- Stop an application
- Un deploy 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

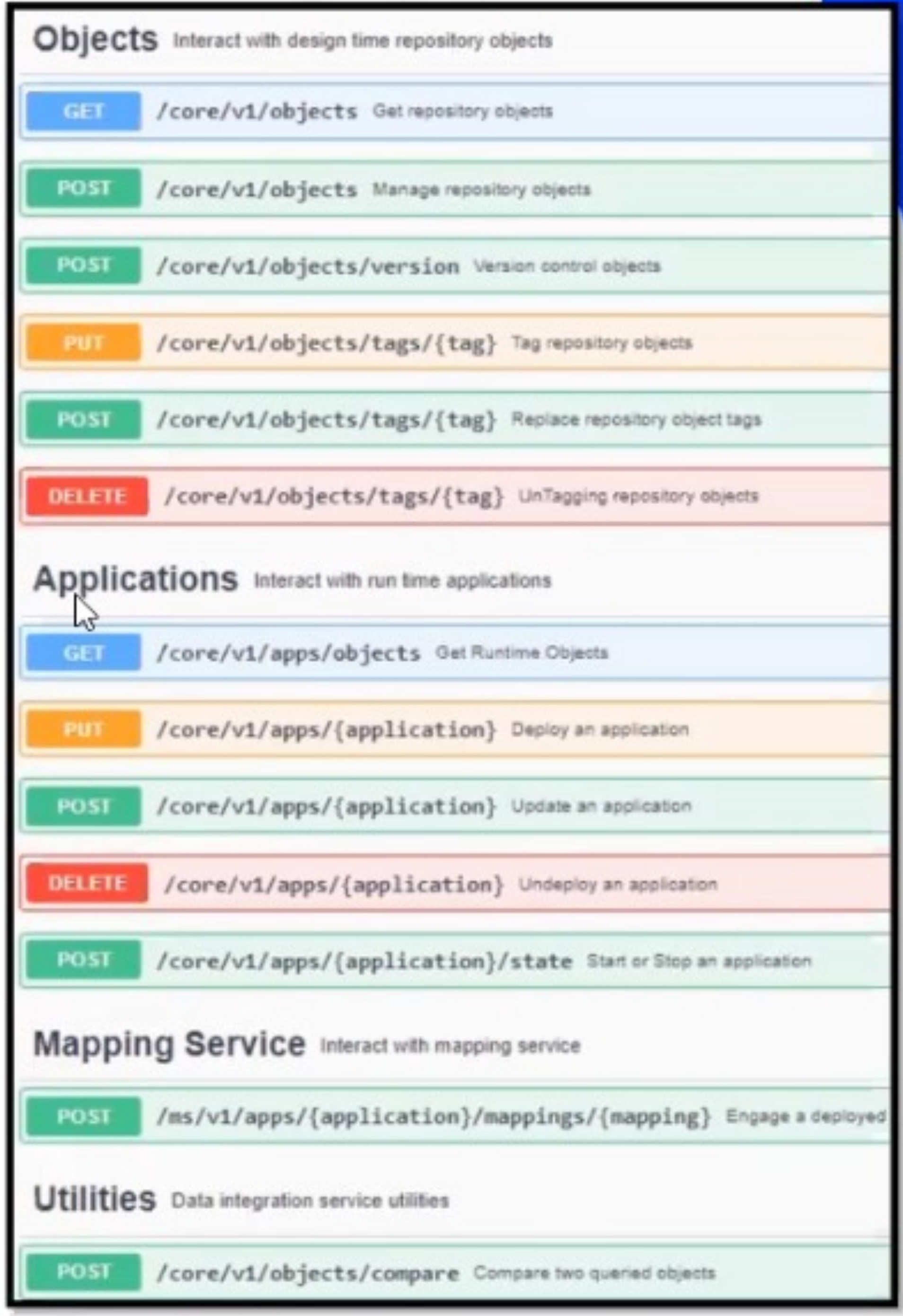
Run-Time Object Query

✓*Query run-time applications and features based on attributes, operations and join clause*

Attributes	Supported Operations	Join Clause	Example
Object name	contains not-contains not-ends-with not-starts-with ends-with starts-with = != in not-in	! && ||	**Query_1** -: name **~starts-with~** map_ && name **~ends-with~** _ff **Query_2** -: name **~starts-with~** map_ || name **~ends-with~** _mapping
App name	contains not-contains not-ends-with not-starts-with ends-with starts-with = != in not-in		**Query_3** -: name = ironman **where** app=MapGenTest **Query_4** -: name = captain_america **where** app**~in~** (MapGenTest, MapGenEg)

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

Infacmd

- A number of commands supported for the purpose.
  - patchApplication
  - deployApplication
  - And many more

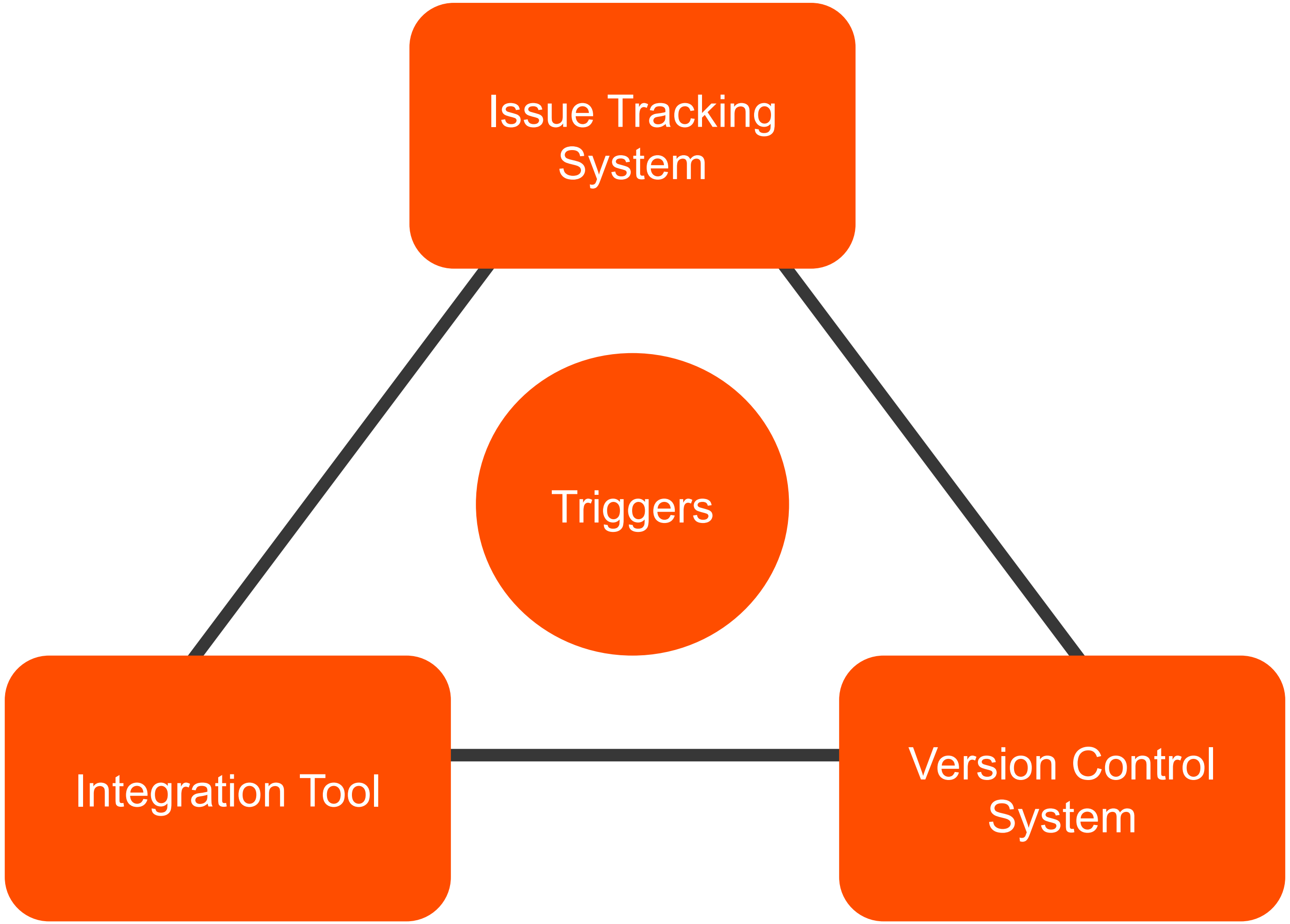
Infacmd v/s Rest API

- Performance
- Client setup
- Functionality

What’s New in 10.5.x

- DIS compareObject Command
  - Effective in version 10.5, you can compare objects between Data Integration Service and Model Repository Service.
- Query Parameters
  - Effective in version 10.5, you can use the Type and Object parameters in infacmd command queries to retrieve design-time objects.

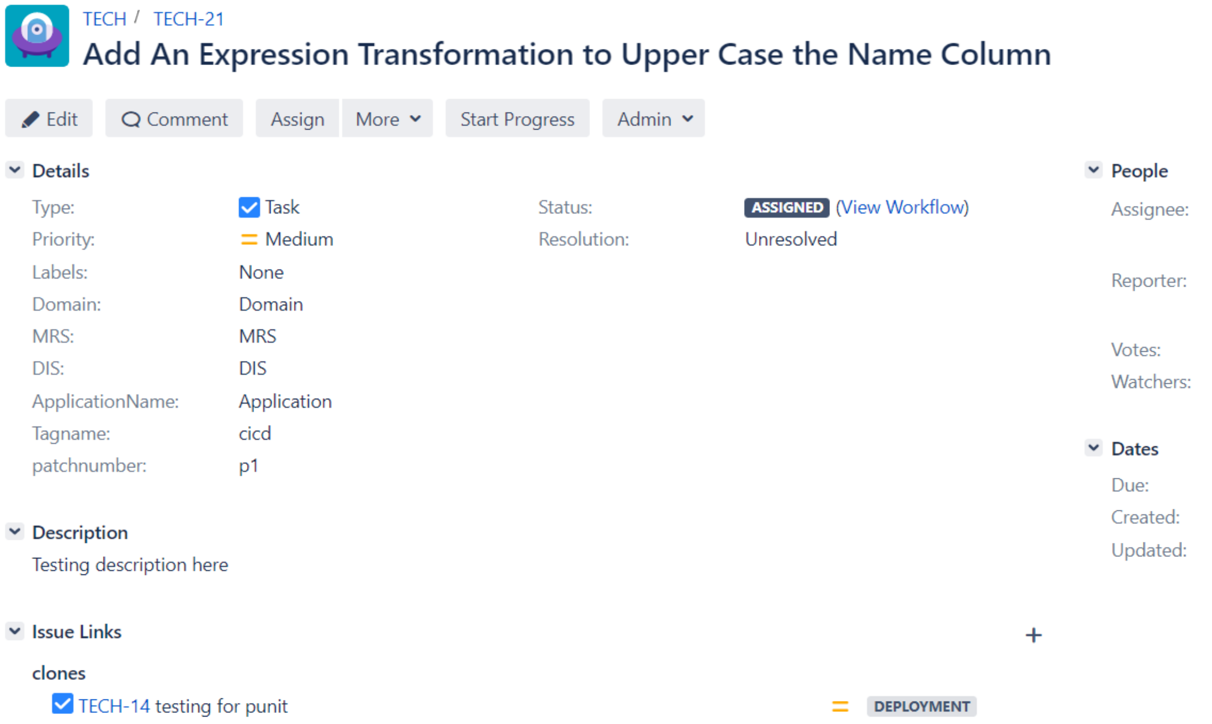
The Eco System



Issue Tracking System
Triggers
Integration Tool
Version Control System

Issue Tracking System

- Will help to keep track all the patch/change in a detailed fashion and understand the workflow
- Example : JIRA



TECH / TECH-21

Add An Expression Transformation to Upper Case the Name Column

Details

Type:	☑ Task	Status:	ASSIGNED (View Workflow)
Priority:	= Medium	Resolution:	Unresolved
Labels:	None		
Domain:	Domain		
MRS:	MRS		
DIS:	DIS		
ApplicationName:	Application		
Tagname:	cicd		
patchnumber:	p1		

Description

Testing description here

Issue Links

clones

☑ TECH-14 testing for punit = DEPLOYMENT

People

Assignee:

Reporter:

Votes:

Watchers:

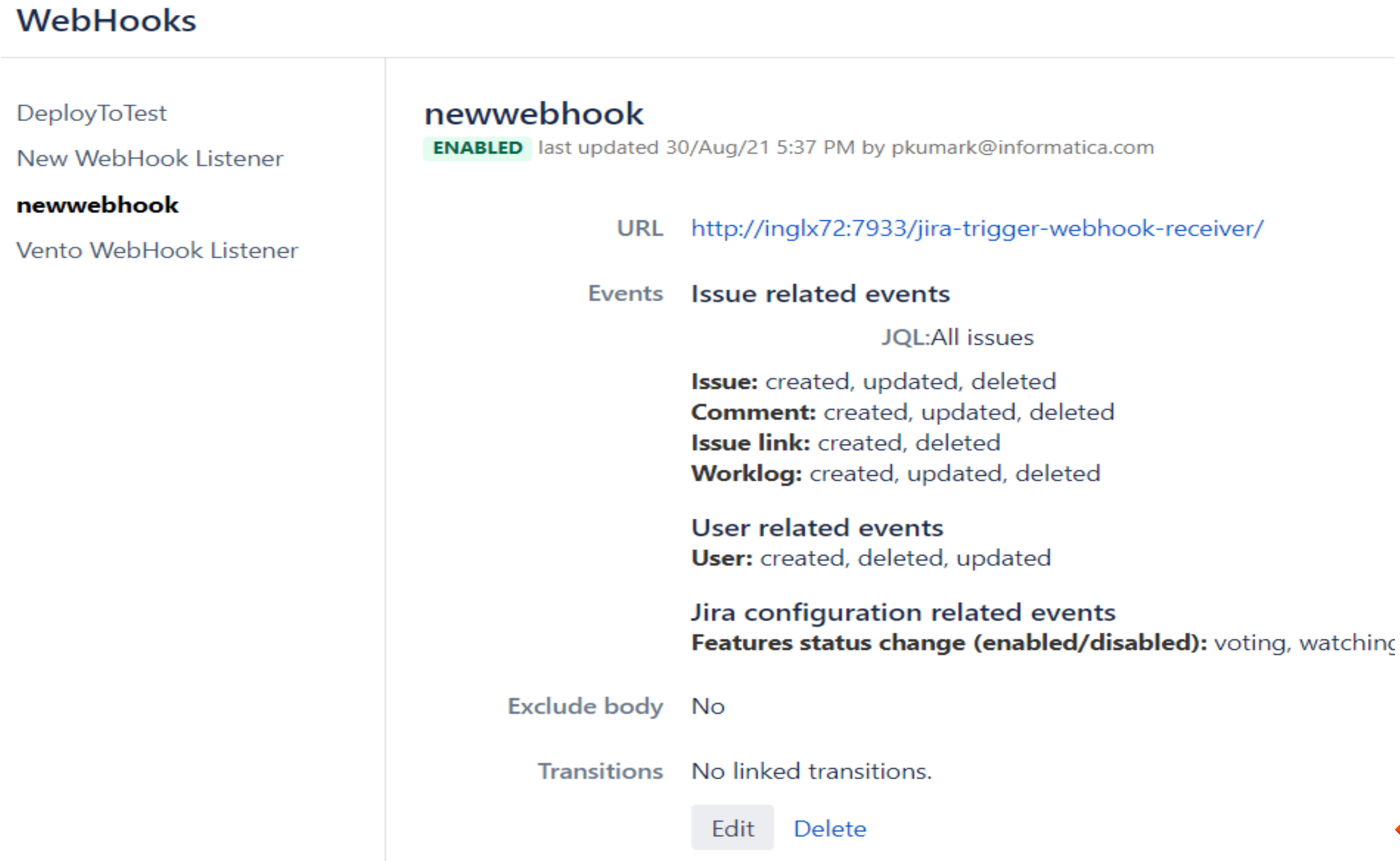
Dates

Due:

Created:

Updated:

JIRA Trigger Point : Web Hooks



WebHooks

- DeployToTest
- New WebHook Listener
- **newwebhook**
- Vento WebHook Listener

newwebhook

ENABLED last updated 30/Aug/21 5:37 PM by pkumark@informatica.com

URL http://inglx72:7933/jira-trigger-webhook-receiver/

Events **Issue related events**

JQL:All issues

Issue: created, updated, deleted
Comment: created, updated, deleted
Issue link: created, deleted
Worklog: created, updated, deleted

User related events
User: created, deleted, updated

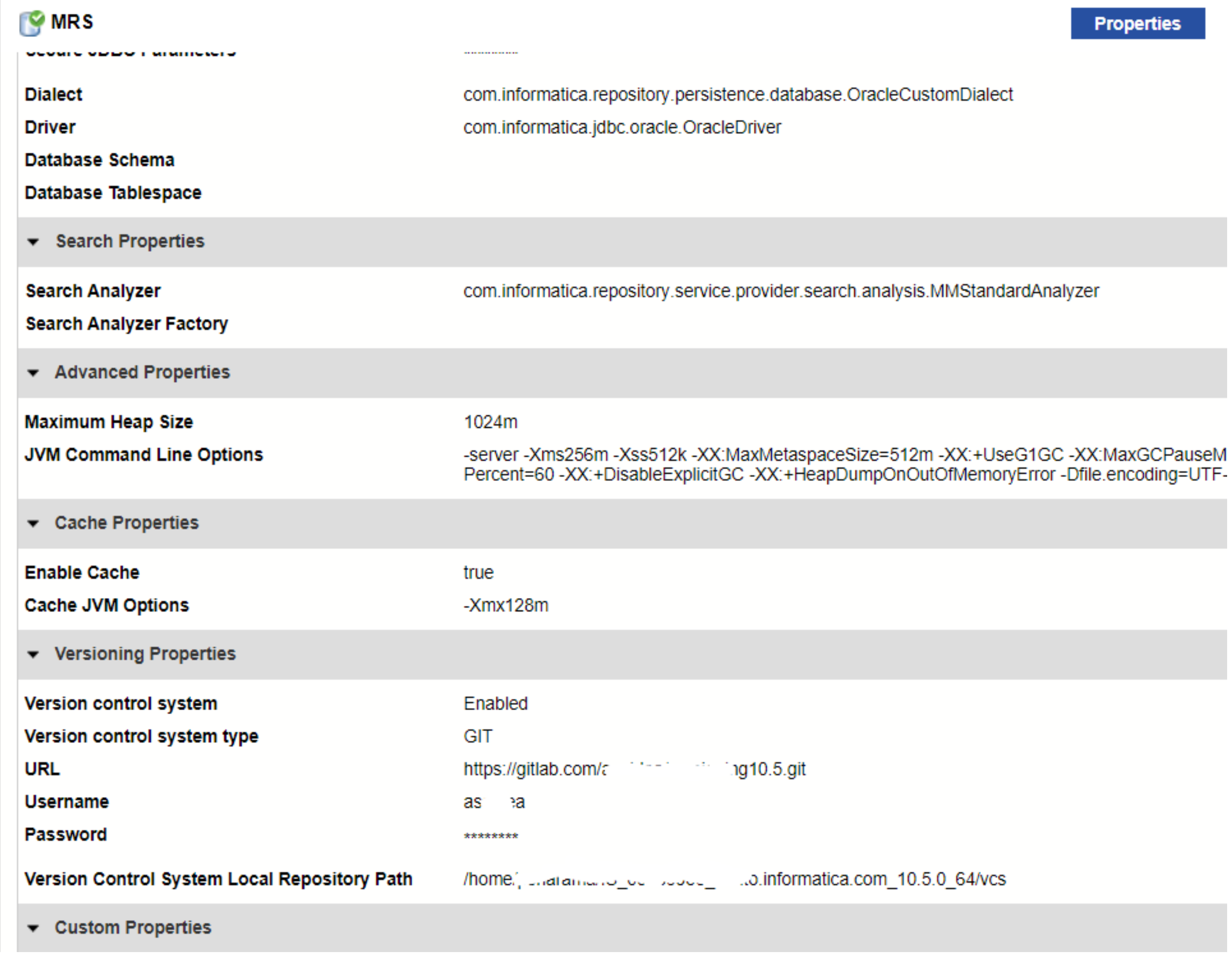
Jira configuration related events
Features status change (enabled/disabled): voting, watchinc

Exclude body No

Transitions No linked transitions.

Version Control System

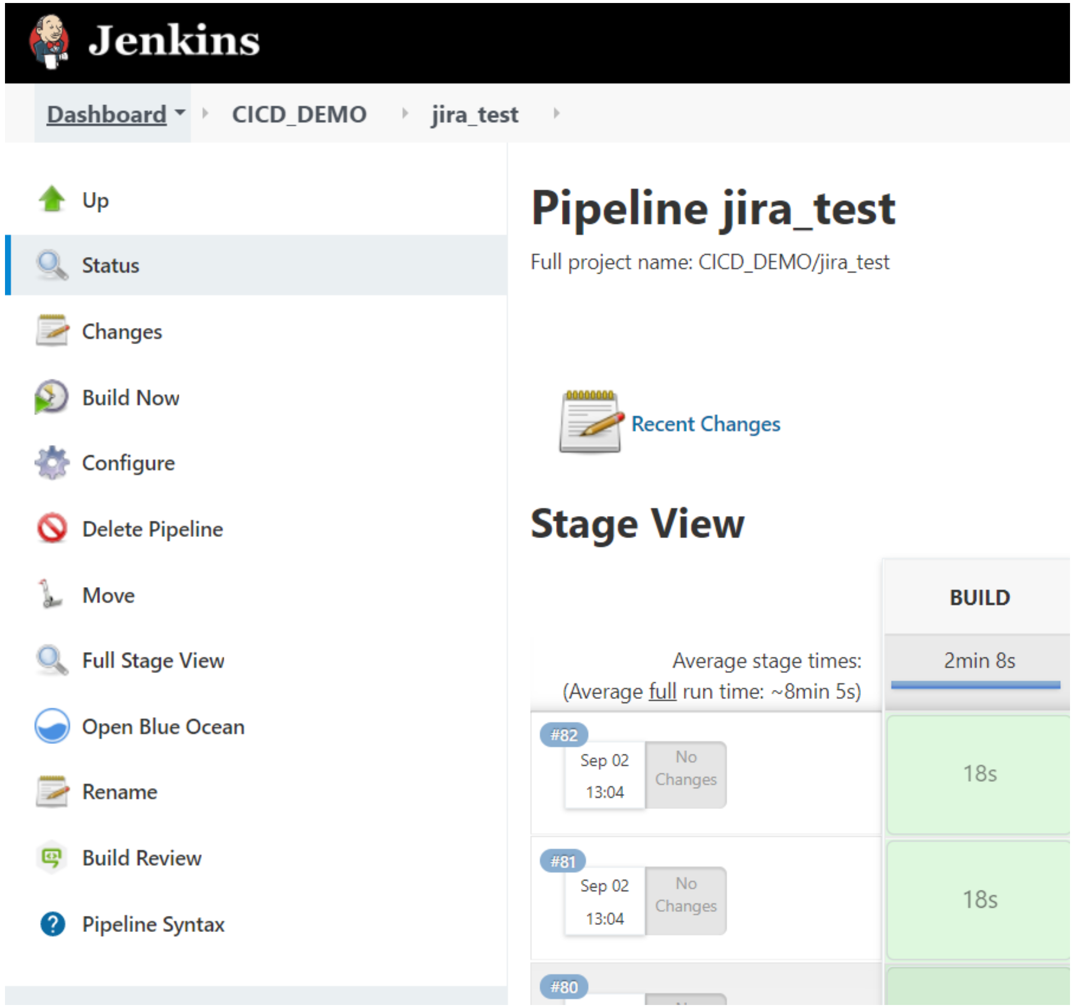
- To maintain the history of code changes
- Example : GitHub, GitLab, Perforce ..



Secure JDBC Parameters	**********
Dialect	com.informatica.repository.persistence.database.OracleCustomDialect
Driver	com.informatica.jdbc.oracle.OracleDriver
Database Schema	
Database Tablespace	
▼ Search Properties	
Search Analyzer	com.informatica.repository.service.provider.search.analysis.MMStandardAnalyzer
Search Analyzer Factory	
▼ Advanced Properties	
Maximum Heap Size	1024m
JVM Command Line Options	-server -Xms256m -Xss512k -XX:MaxMetaspaceSize=512m -XX:+UseG1GC -XX:MaxGCPauseMPercent=60 -XX:+DisableExplicitGC -XX:+HeapDumpOnOutOfMemoryError -Dfile.encoding=UTF-
▼ Cache Properties	
Enable Cache	true
Cache JVM Options	-Xmx128m
▼ Versioning Properties	
Version control system	Enabled
Version control system type	GIT
URL	https://gitlab.com/[redacted]g10.5.git
Username	as[redacted]a
Password	********
Version Control System Local Repository Path	/home/[redacted].informatica.com_10.5.0_64/vcs
▼ Custom Properties	

Integration System

- Can be used to automate the entire workflow
- Example could be Jenkins



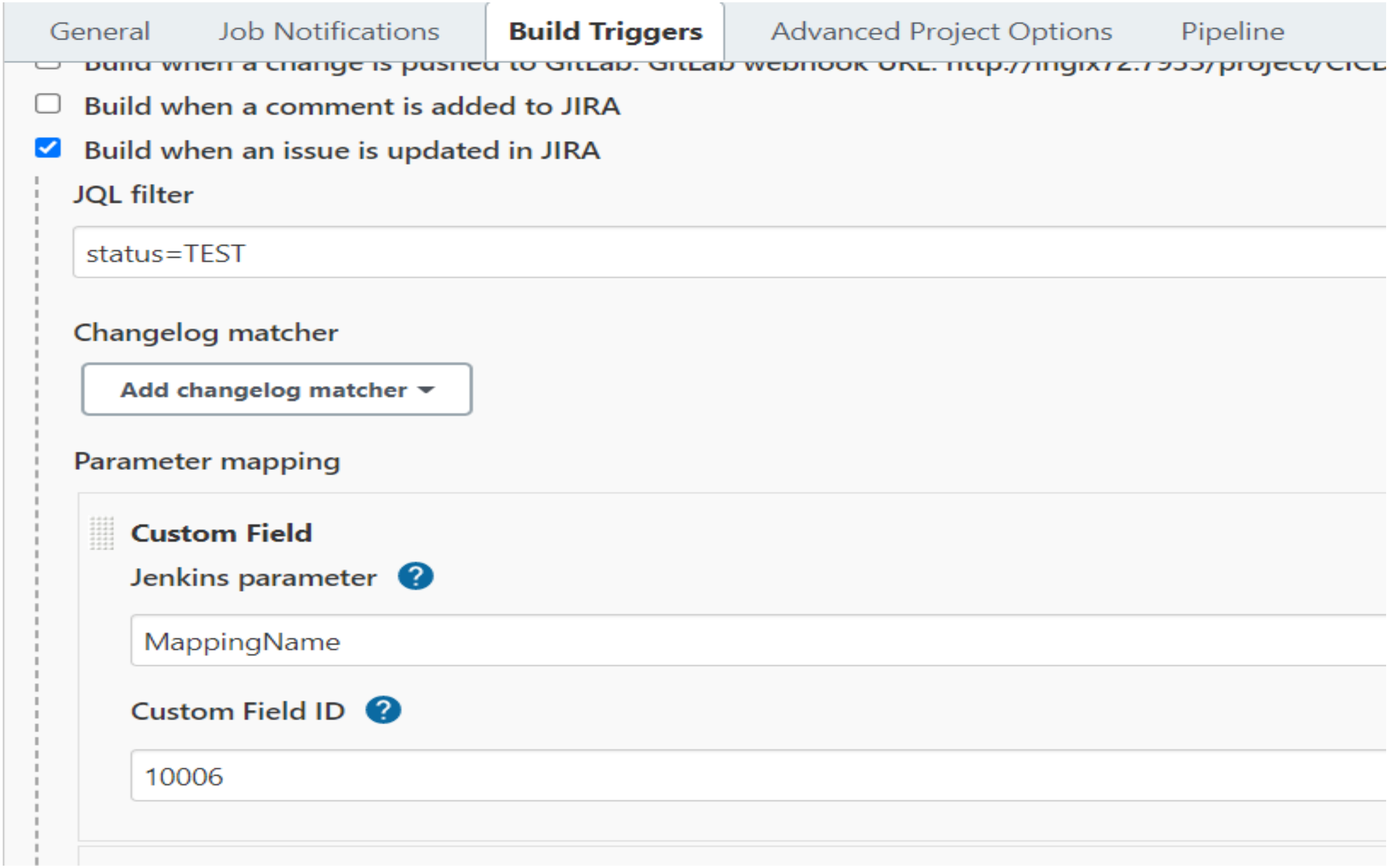
Pipeline jira_test

Full project name: CICD_DEMO/jira_test

Stage View

	BUILD
Average stage times: (Average full run time: ~8min 5s)	2min 8s
#82 Sep 02 13:04 No Changes	18s
#81 Sep 02 13:04 No Changes	18s
#80	

Jenkins Trigger Point : Build Triggers



□ Build when a change is pushed to GitLab. GitLab webhook URL: http://inglx72:7935/project/CICD

□ Build when a comment is added to JIRA

☑ Build when an issue is updated in JIRA

JQL filter

status=TEST

Changelog matcher

Add changelog matcher ▾

Parameter mapping

Custom Field

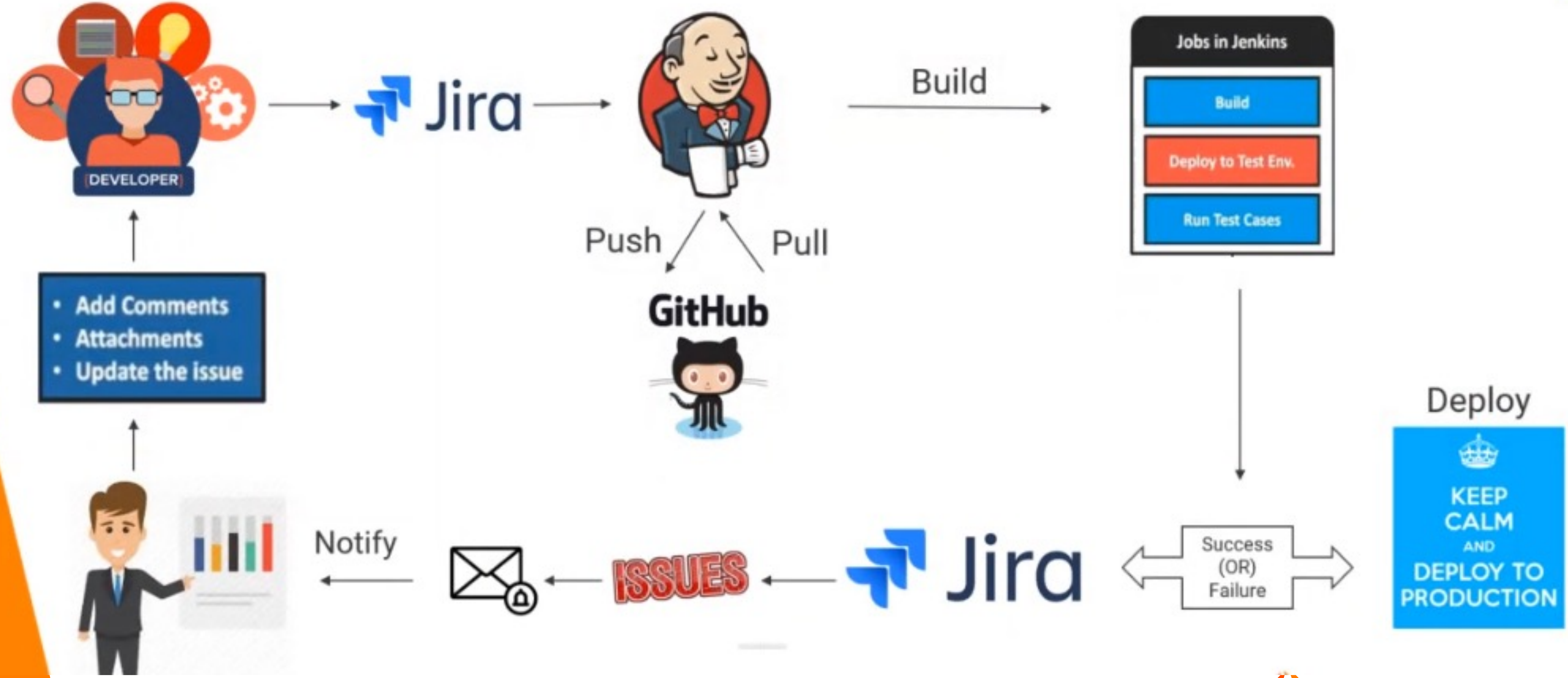
Jenkins parameter ?

MappingName

Custom Field ID ?

10006

Demo Architecture



References

- Commit Hooks
  - https://www.linuxtoday.com/blog/making-the-most-of-commit-hooks-with-subversion.html
- 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
  - https://medium.com/@shrut_terminator/devops-usecase-jira-jenkins-integration-4051413446a9
- Data Quality Command Reference Guide IDQ 10.5
  - https://docs.informatica.com/data-quality-and-governance/data-quality/10-5/command-reference/preface.html
- Data Quality Application Service Guide IDQ 10.5
  - https://docs.informatica.com/data-quality-and-governance/data-quality/10-5/application-service-guide/data-integration-service-rest-api/queries.html

Q&A