Kovair DevOps Release Note V2.0

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Kovair

Document Version History		
Release	**Date**	**Reason**
Kovair DevOps (Initial Release)	26th - Sep - 2019	Initial release
Kovair DevOps Phase-2	6th-Nov-2019	License, Dashboard, Release, Report
Kovair DevOps Phase-2	2nd Dec-2019	ALM Specific plugin and UI change
Kovair DevOps Phase-2	10th Dec-2019	FIlter in Dashboard page, Release cloning
Kovair DevOps Phase-2		Parallel Task.
Kovair Devops Phase-2	3rd Jan-2020	Release Calender,Release & Pipeline Archival,Project & Release Filters on Dashboard and Reportlist ,Delayed Release Indicator on pipeline and release page.Add Task between any two task. Issue Fixes and CR Implementations
Kovair Devops Phase-2	11th Jan-2020	Start-End Release from pipeline list page. Email Notification on manual task receive License Expiry Alert.
Kovair Devops Phase-2	28th - Feb 2020	Multi DB Support Approval of manual task using mail. Trigger Pipeline from another pipeline. Some bug Fixes.

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Kovair Devops Phase-3	27th March 2020	Group Support added for Access Control. Report Dashboard Custom Layout Added
Kovair Devops Phase-3	10th April 2020	SMTP option added along with exchange
Kovair Devops Phase-3	22nd May 2020	Task Notification added in task configuration window.Mail notification will be sent to the configured mails on task completion.
Kovair Devops Phase-3	2nd June 2020	Pipeline Preview
Kovair Devops Phase-3	17th july 2020	Execution Host
Kovair Devops Phase-4	24th Dec 2020	YAML option added

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Objective

Kovair DevOps is an enterprise application specially built to streamline CI&CD for an Organization.

A CI/CD pipeline helps you automate steps in your software delivery process, such as initiating code builds, running automated tests, and deploying to a staging or production environment. Automated pipelines remove manual errors, provide standardized development feedback loops and enable fast product iterations. This document describes all the top-level features, configuration and setting description with the architecture details.
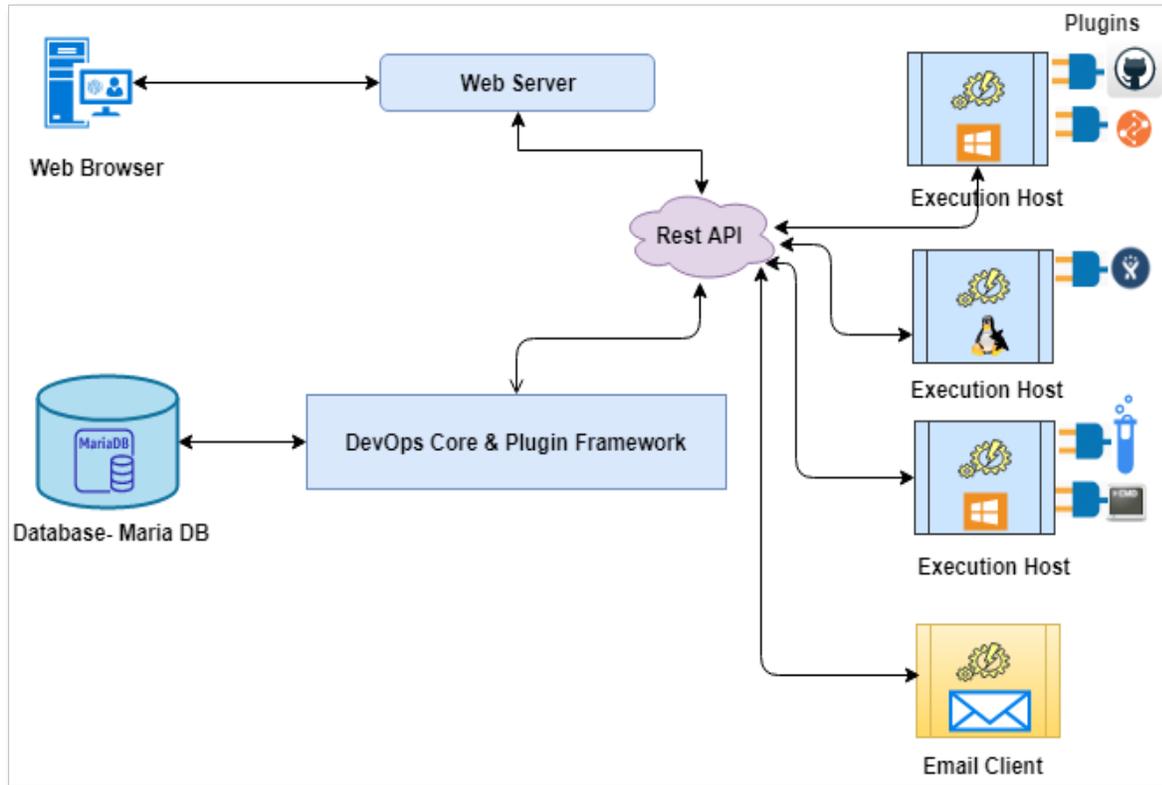
Overall Architecture

Following diagram shows a high-level architecture of the platform. It is purely built on Java with Maria Db as the repository.
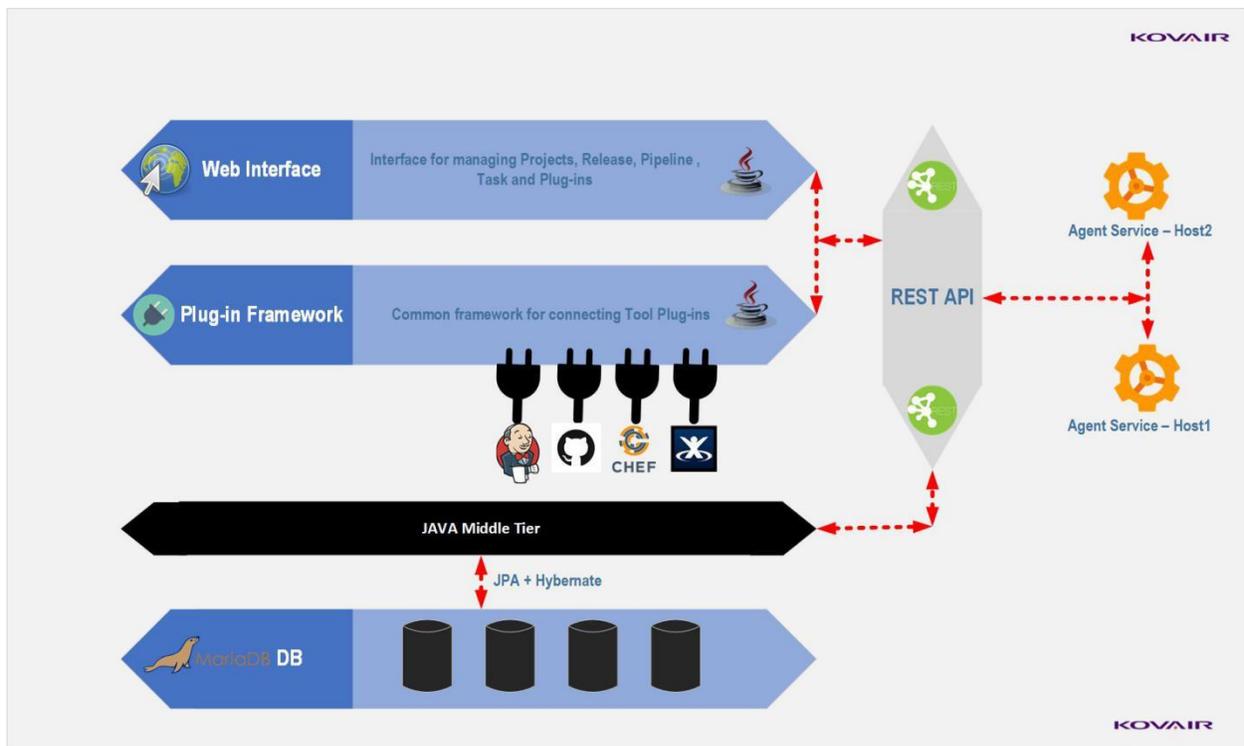
Overall System Components

Following diagram show the primary components of DevOps platform. It includes the Repository, Core framework, Web interface, Rest API Interface and Agent Services.

Component Pre-Requisite

Component	Pre-Requisite	Supported OS
DevOps Application	➢ Open JRE 1.8 ➢ Apache Tomcat 8.5 or above ➢ Maria DB 10	1. Windows 2012 64bit Server and above. 2. Windows 10 64bit 3. Linux CentOS 7.3 and above
Execution Host Agent Service	➢ Open JRE 1.8 ➢ Should run with Domain Admin user ➢ Proper Application URL and credential should be provided on Configurtion.ini	1. Windows 2012 64bit Server and above. 2. Windows 10 64bit 3. Linux CentOS 7.3 and above

| Email Service	➤ Open JRE 1.8 ➤ Should run with Domain Admin user ➤ Proper Application URL and credential should be provided on Configurtion.ini	1. Windows 2012 64bit Server and above. 2. Windows 10 64bit 3. Linux CentOS 7.3 and above

Module Hierarchy

For a given Project there could be one or more Releases associated with it. Platform considers each release has one pipeline associated with it. Thus, pipeline level data could be rolled-up for release status and therefore for Project.
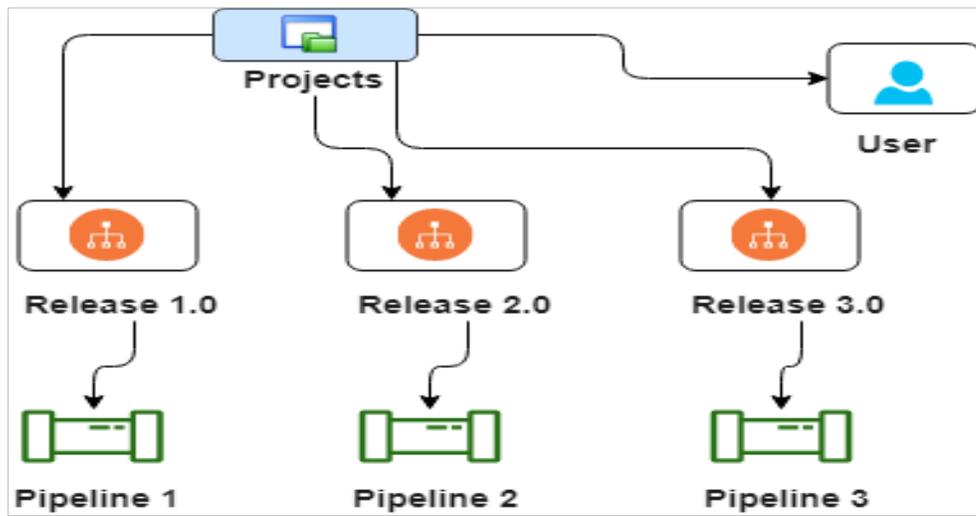
For given Release there could be only one pipeline.

Pipeline Hierarchy
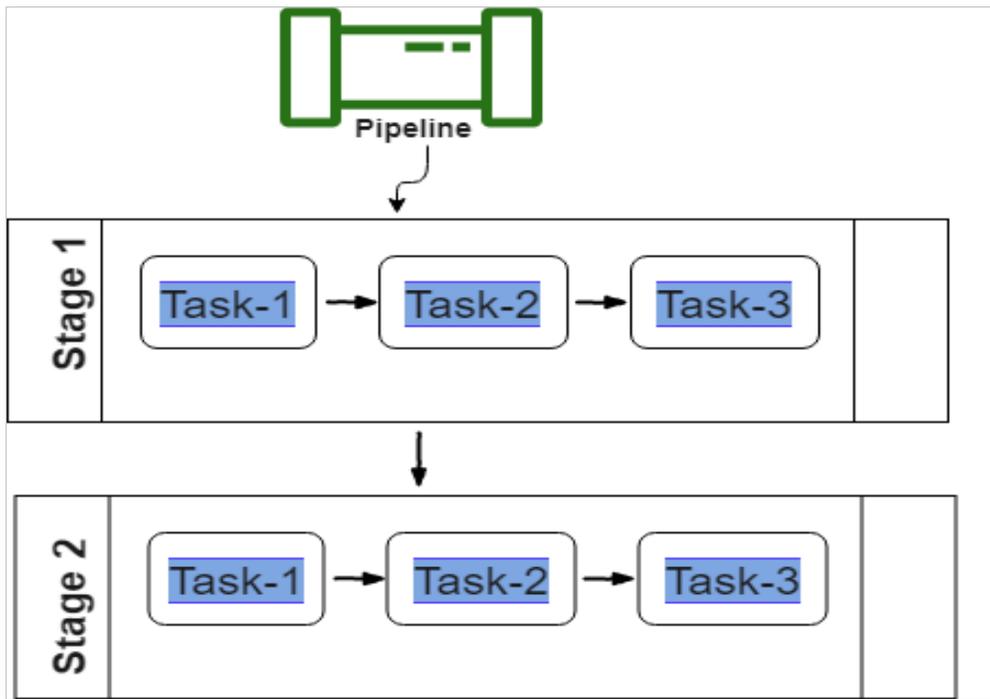
Functional Details

All functional details of the application and agent service are described below.

Login Page:

After successful installation and starting the application, user can access the login page URL.

Ex URL: **http://192.168.12.159:8080/KovairDevops**
Default User Name and password: **admin/admin**

Forgot password will send email one standalone URL to reset the password. Email setting should be preconfigured to access this functionality. After successful login user can see the pipeline list page.

DB Support

Following databases are supported :

Database Type	Database Version (Tested)	Prerequisite
Maria DB	10.3.16	
Microsoft SQL Server	2012	**Dll name : sqljdbc_auth.dll** if system is 32 bit then, Location : basedirectory/SQLDependency/x86. if system is 64 bit then, **Location :** <Deployed Directory>\KovairDevopsApplication\KovairDevopsApplication\webapps\KovairDevOps\WEB-INF\classes\SQLDependency\SQLDependency\x64. **Work :** Put the dll in <tomcat_installation_path>/bin and <Java_Jre_Path>/bin -- **Jar name : sqljdbc42.jar** **Location :** <Deployed Directory>\KovairDevopsApplication\KovairDevopsApplication\webapps\KovairDevOps\WEB-INF\classes\SQLDependency\SQLDependency. Work : Put the jar to the <tomcat_installation_path>/lib **Note :** After updating all the files, Please restart the tomcat server. Error may faced if above steps not followed: 1.**Error :** This driver is not configured for integrated authentication. ClientConnectionId:aa2bc91a-4e89-461c-8d14-de65e5104151(if dll is not placed properly) 2.(Error In log)Native Library sqljdbc_auth.dll already loaded in another classloader (if jar not placed properly) |--------------------------------| | sqljdbc*.jar --> tomcat*/lib | |--------------------------------| | sqljdbc_auth.dll --> tomcat*/bin |

		|--------------------------------|
Oracle	11g	Run the follwing command in administrative mode at application server **mvn install:install-file -Dfile="<path of ojdbc6 jar>\ojdbc6.jar" -DgroupId=com.oracle -DartifactId=ojdbc6 -Dversion=11.2.0.3 -Dpackaging=jar** Example: mvn install:install-file -Dfile="E:\Saheli\tfs\DevOps\KovairDevOps.2.0\Utility\AppInstaller\KovairDevopsApplication\KovairDevopsApplication\webapps\KovairDevOps\WEB-INF\classes\OracleDependency\ojdbc6.jar" -DgroupId=com.oracle -DartifactId=ojdbc6 -Dversion=11.2.0.3 -Dpackaging=jar

Database Configuration

Please Provid the following details to configure database:

Maria DB:

DB Type: Database Type : MariaDB

Hostname: Database Host Name. Ex: 192.168.11.252 or db-devops

Port: Database Port no. Ex: 3306

Username: Database login username.

Password: Database login password.

Database Name: Database name (Existing or New)

SQL Server:

DB Type: Database Type : MS SQL Server

Hostname: Database Host Name. Ex: 192.168.11.252 or db-devops

Auth Type: WINDOWS/SQL

Username: Database login username.(Required only if Auth Type is set to SQL)

Password: Database login password.(Required only if Auth Type is set to SQL)

Database Name: Database name (Existing or New)

Oracle:

Database Configuration

DB Type *		Oracle ▾	ⓘ
Hostname *		oracle11g.in.kovair.com	ⓘ
Port *		1521	ⓘ
Username *		ADevops	ⓘ
Password *		••••••••	ⓘ
DB Identifier *		SID ▾	ⓘ
Database Name *		orcl	ⓘ

Validate Connection   **Success!** Validated successfully!

Save and Restart

DB Type: Database Type : MS SQL Server

Hostname: Database Host Name. Ex: oracle11g.in.kovair.com .

Port: Database Port no. Ex: 1521

Username: Database login username.(Required only if Auth Type is set to SQL)

Password: Database login password.(Required only if Auth Type is set to SQL)

Database Identifier : Database unique identifier, Oracle SID, Service Name is the unique name that uniquely identifies your instance/database.

Database Name: Database name (Existing)

Note: In case the database is a new database '**Create Database**' checkbox needs to be checked and database needs to be created by hitting '**Create DB**' button prior to the '**Save and Restart**'.

Oracle DB Type does not support 'Create Database' while configuring. Database should be created manually prior to the configuration.

Pipeline Page

This page will show all the pipeline list with Last Run, Last executed on, Linked project, release and status details.
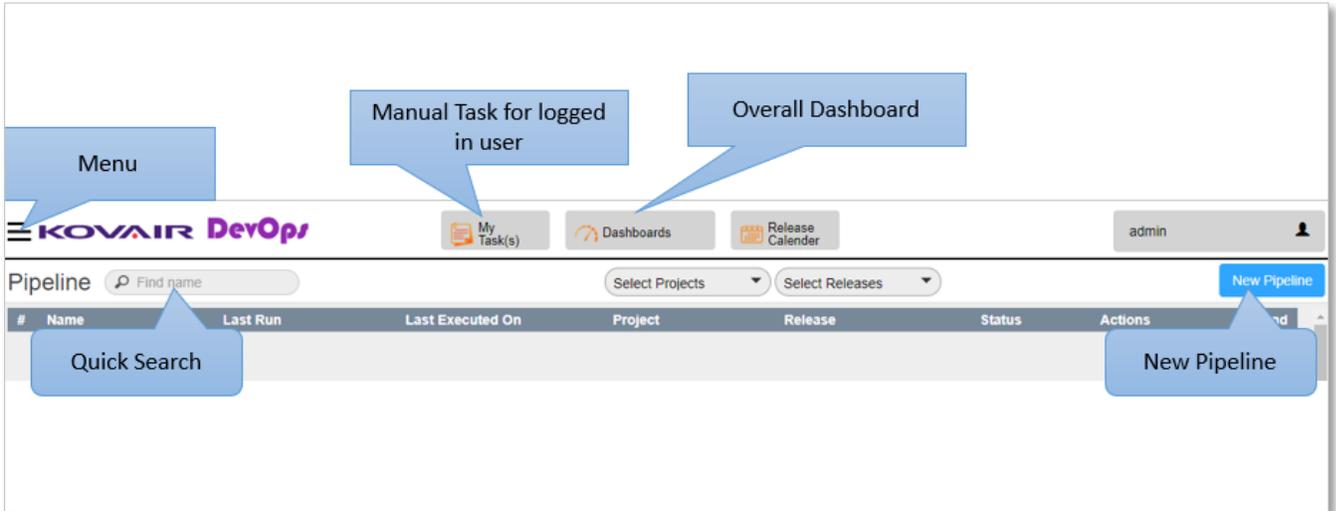
Menu Items

On Menu bar it consists 3 top level Items.

- Pipelines
  It will show the Pipeline list page and from this page one can create/execute new pipeline.
- DevOps Analytics
  For report and dashboard
- Administration
  User, Project, Release and Server settings are done from here.

Pipeline Preview

| Name ⇕	Last Run ⇕	Last Executed On ⇕	Project ⇕	Release ⇕	Release Status ⇕	Actions	Expand
∞ DDD 123EEEEE yy...	■ Stopped	Jun 01,2020 09:19	Default Project	rel99	🕐 Planning ❶	☰	▼
∞ Snow	⚠ Failed	Jun 01,2020 10:29	Project 004	kov	🕐 Planning ❶	☰	▼
∞ Slack	⚠ Failed	Apr 23,2020 18:45	Project 004	ABCD	🕐 Planning ❶	☰	▼

In Pipeline list page there is an icon ∞ . To view a pipeline representation user should click on this icon. User will be redirected to a page of pipeline preview.
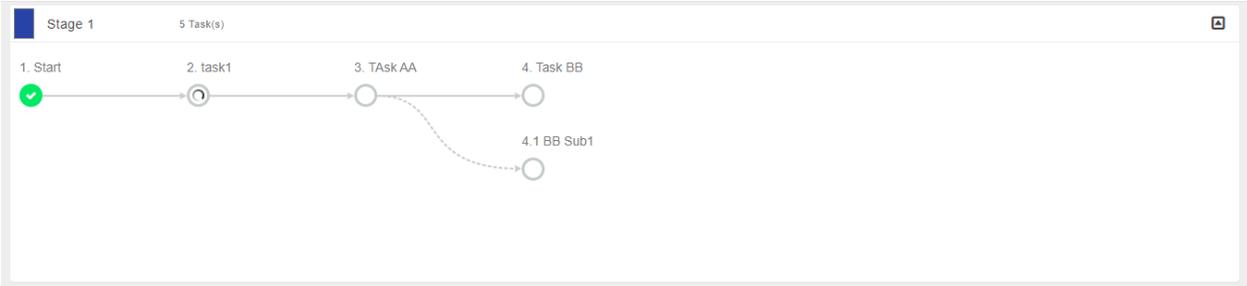
User

- User can be created only with email.

- Multiple emails can be used separated by comma (no space).
- While creating the user select minimum one group.
- Users can belong to multiple groups.
- Default password is same as email. Upon login for the first-time user will be required to Set the password.
- From user list user details cannot be modified. Only groups can be added or removed.

- User can edit their details only from account settings.

Note: Email password reset link is not available for use. It will be implemented in future builds.

- User can be deleted by clicking delete option from action menu. Any activity (i.e createdBy , modifiedBy etc.)performed previously by a deleted user will remain as it is after its deletion. The user will not be available for further such activities but previous activities will show this name.

Group

- Groups are used for Access control throughout the applications. There are two major types of permission

Permission Type	Details	Access Modes and description
Application Permission	Applicable to administration specific pages i.e. Project, User, Group, Release, Dashboard, Server, Plugin	• **Full** – Full access • **View** - Read only • **Hide** – Hides the module from administration menu.
Project Permission	Applicable to all items belongs under project i.e. Release, Pipelines "All Project" underneath project permission if configured will apply to all the project in the application	• **Full** – Full access • **Execute** – Execution & View only. • **View** – View only.

- Groups can be created with name and description. From group details page permission needs to be set.

- Details of Admin group cannot be modified.
- A user can be added into multiple groups.

- If user has conflicting permission, then highest permission will always win.
  Priority as following – FULL > Execute > View > Hide
  Example such as below.
  Consider a user who is added to Group 1 and Group 2.

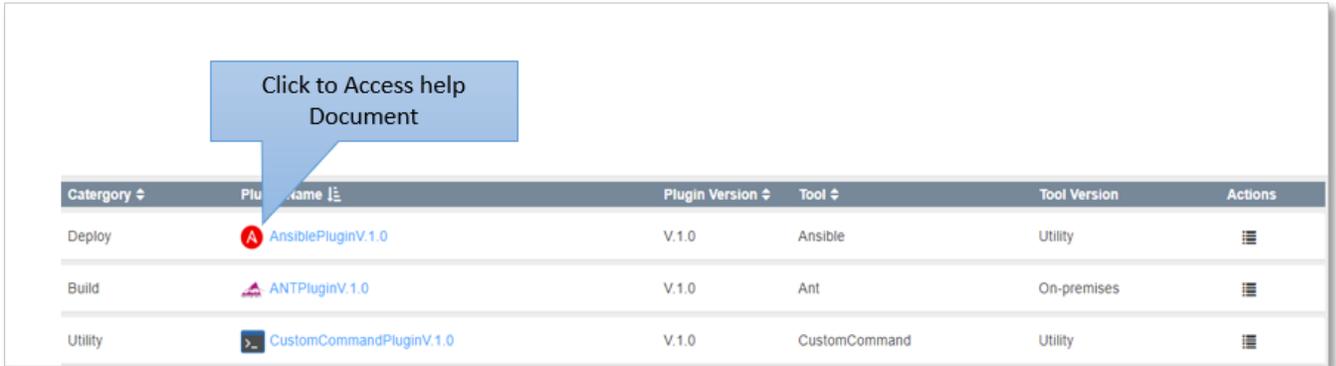| Permission in **Group 1**	Permission in **Group 2**	Final Permission
Project A – View	Project A – Full	Project A - Full
Project A – Execute	Project A – Full	Project A - Full
All Project – View	Project A – Not specified	Project A - View
All Project – Full	Project A – View	Project A - Full

- In Project List of Administration page will only consider Application Permission (Manage User, Group and Project). And will allow modification to any project if Permission is granted as FULL. It will not consider the project specific access.
- Modification access details for any user will take effect only after re-login. Consider a scenario: a user is currently logged in and administrator modifies its access from FULL to View. So, the user will still be having Full access until he logout and logs back in again.
- All Project Full access will supersede any other project level access.

If user is assigned to many groups and its access inheritance is not clear, then take a look at conflicting permission points above and determine from where he is getting the access.

Plugin

This page is responsible to upload/delete the tool plugin. Each Execution agents contains plugins for execution.
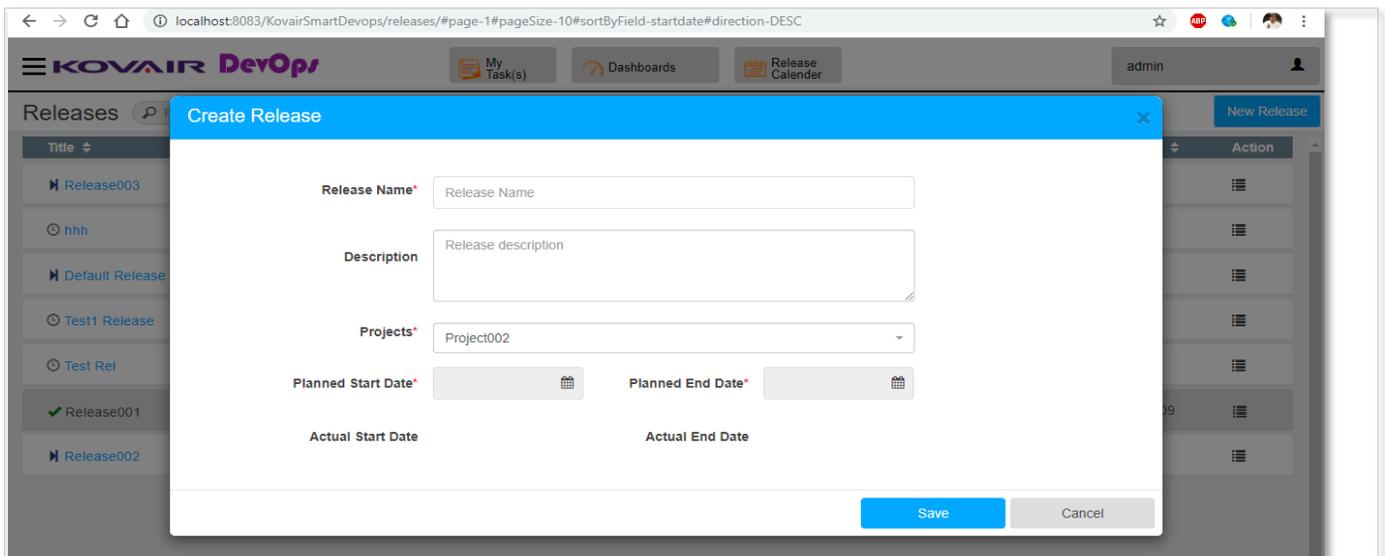

Projects

New Project is top level entity where each Releases are linked. User can provide the user access on project level. Project can be Edited, Deactivated and Deleted if not linked with any release.

Releases

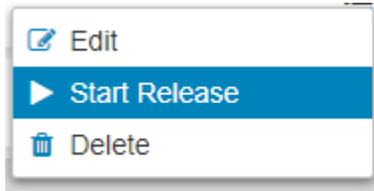Each Release connected with one Project.

User needs to provide Release Name, Description (Optional), Project, Planned StartDate and Planned End Date to create a release.

Initially a Release Status is "**Pending**". When user clicks on "**Start Release**", "Actual Start Date" will be current UTC date-time.

A pipeline should be associated with a release to start a release. Only one pipeline can be associated with a release.

When user will click on "**End Release**", "Actual End Date" will be current UTC date-time and the release will be in "**Completed**" state.

Pipeline will be in **read-only** mode for a completed release.

Default Release can't be used in a pipeline.

Release Calendar

This is a calendar view to manage all releases. Using this calendar user can get a clear picture of a release. User can track when a release was planned and when it is started. Release calendar contains month, day and week view. All releases can be seen from this calendar. To view completed release user need to click "**Show Completed**" checkbox. Orange color bar indicates completed releases and green color bar indicates all other releases. Archived releases will not be the part of release calendar.

By clicking any release following popup will show the basic details of the release.

Archived Release 001

Project : p1
Planned Start Date : 2019-12-29
Planned End Date : 2020-01-31
Actual Start Date :
Actual End Date :

Double click on day cell shows Day View.

Server

Any of two types of Mail Server can be added

Exchange

Feature:
1. Email monitoring –
   > Prerequisits – Email Service needs to be installed/configured and running.
   > Action Supported - Show pipeline list, Run Pipeline(Start/Stop), View pipeline status.
   > Mail Monitoring – only those user whose email is subscribed will be eligible for invoking the actions supported.
2. Send Email notification– - Manual task – Assign(During Run), User add, User forget, User reset
3. If the pipeline run is initiated through email and email notification will be sent to the subscribed user every time the pipeline status is changed i.e.- Queued --> Running --> Failed/Passed from the application side. This may not maintain the mail chain of the initiated run mail.

Note:
1. For email monitoring configured username(email) should not be used to send mail for actions.
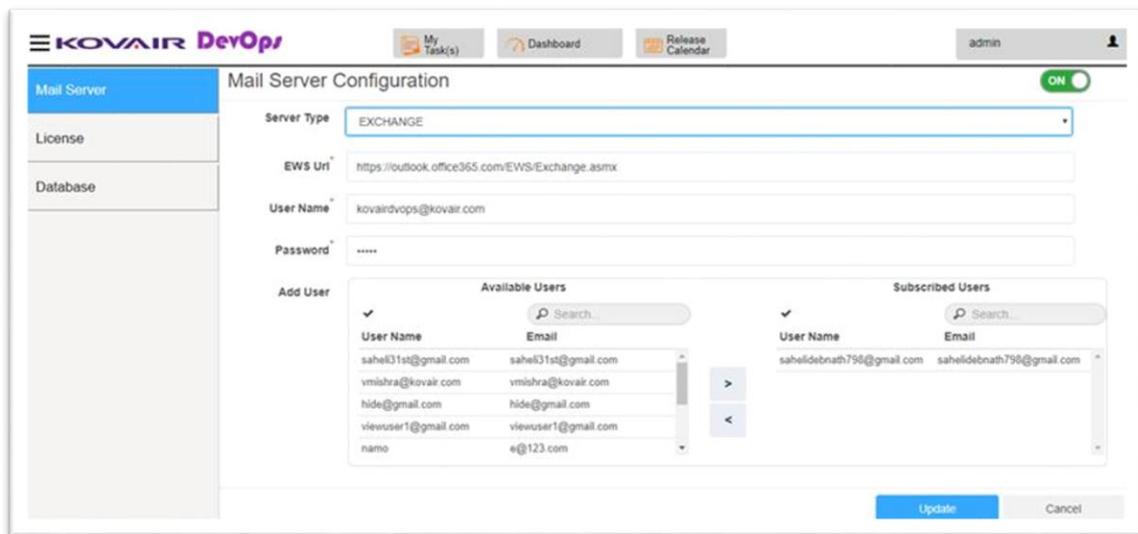
SMTP

Feature:

1. Send Email notification– - Manual task – Assign(During Run), User add, User forget, User reset

Note:

1. Test connection will send a mail to email id which is configured in the email. So to and from email id will be same.
2. Prior to saving the configuration, use Test connection to verify that your SMTP is working correctly or not. Monitor the mail by which SMTP is registered. If you can see the test mail sent by application you can be sure that your SMTP connection is working properly.

License

License are generated by a separate client tool based on the machine key. To generate License, one need to install the application and provide the Machine key for generation of License.

- **Machine Key –** This is a instance identifier should be sent to Kovair support for generating license.
- **License Key –** This license key should be sent by Kovair support. Upon receiving the license apply it as soon as possible.

Apply New License:

🔑	VMOqLfJt6urR33wJl8e3WIWZjqjTrY6OZXAZImk2+A=	📋
📥	License Key	

Apply
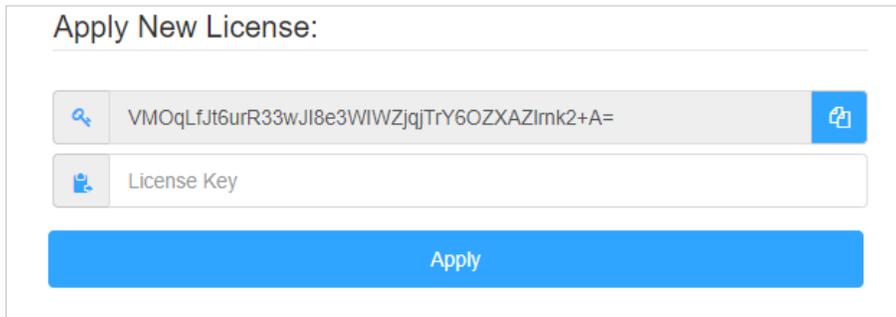
Rules & Disclaimers

1. License Key must be applied within **3 days of generation** otherwise they will get stale and cannot be applied.
2. Once license expired, the existing logged in users will be able to run the application except executing a pipeline. But if the user has logged out then it will not be able to log in.
3. Applying license to the application where existing license is already activated and application is not expired - then it will overwrite the existing one completely. The application will show the newly license details
4. If count of application users is decreased when applying license to an existing running system, then the already enabled users will **not** be deactivated.
5. If user reduction is required, then it has to be done manually.
6. License expiry date cannot be a past date from the day of license setup.
7. Altering server datetime(backdate) may expire license. Altering server time zone will not have any effect on this.

License Details:

Applied Date :	Tue, 05 November 2019
Expiry Date :	Wed, 06 November 2019 (1 day(s) remaining)
User Count :	5
Status :	License Applied

Pipeline Configuration

Creation of pipeline will be available from the pipeline list page. One can create pipeline from scratch or can create from an existing one. The application provides the facility for both.

Create New OR Derive From

For New pipeline application will automatically add one stage with a system task. System task is Manual type task which says the pipeline will only execute manually.
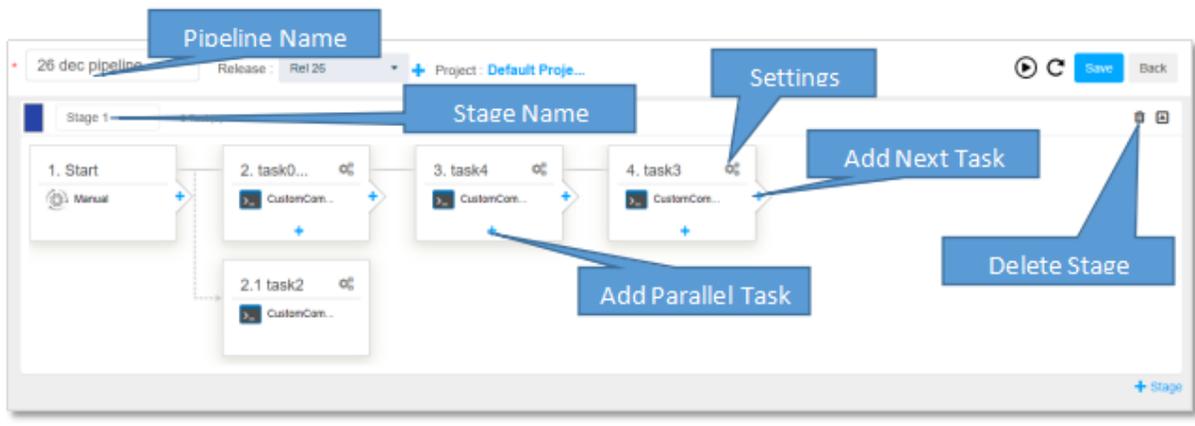
Note : Parallel task will be added after last parallel task.

Any delete of Task Stage Pipeline is an _irreversible_ action. So be careful before deleting the above items during pipeline configuration

Add Task

Add task will allow user to configure the partial job with input and output parameters. User can select required plugin for the given categories.
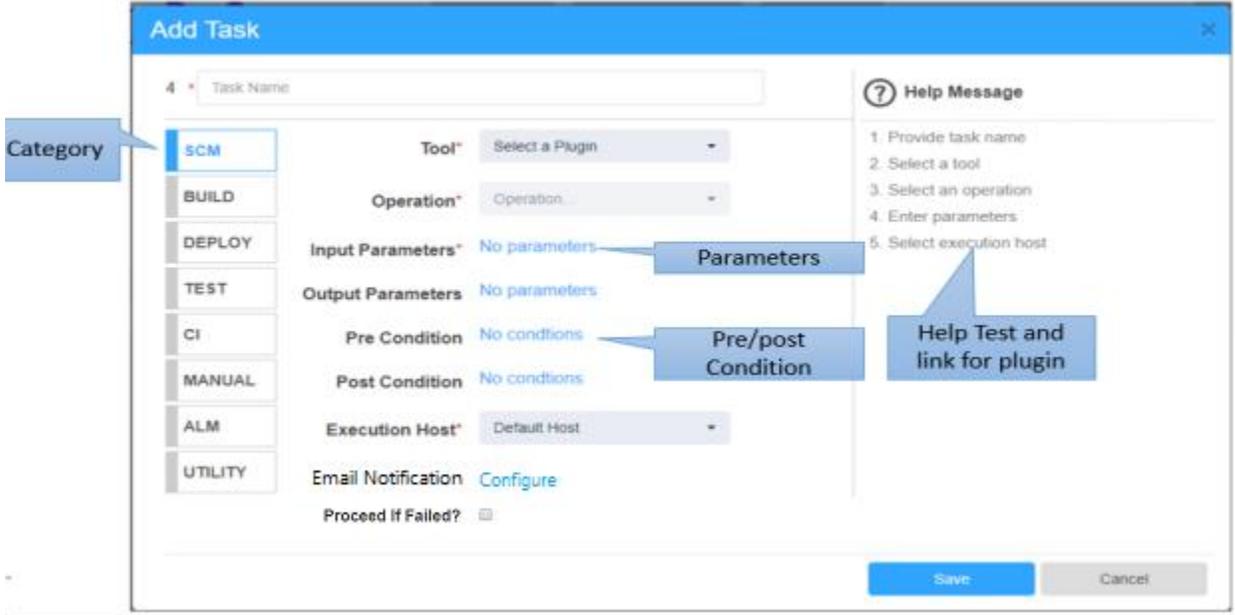
Each plugin exposes with certain operation and for each operation user need to provide the required parameters to execute the task. User can set up precondition and post condition for each task. During execution application will execute the condition and if any condition failed **then entire pipeline execution will be failed.** A User Intimation message will show if the required plugin is not installed.

Execution host is responsible to define the Agent address where user need to execute the specific task. Each Agent service contain one **configuration.ini** file where user need to mention the application URL and credential.

Execution Host

Execution Host*   Dynamic Host   ▾   Override

Two types of execution host can be selected,

- Static Host - This hosts are automatically filled by the agent is installed and configured. Agent service should be started to populate the list.

- Dynamic Host - The value can come from input/output variable of earlier task or can be typed manually. **Please note** : if dynamic host contains blank value after evaluation, the task will be failed. If proceed if failed is checked then the pipeline will continue execution. The agent must be configured and running at dynamic host.

Override Host   ✕

Override Execution Host $[cghfghyjr#58#$CustomCommand$ExecuteCMDCommand$CommandOutpu   ⬆   ❶

Submit   Close
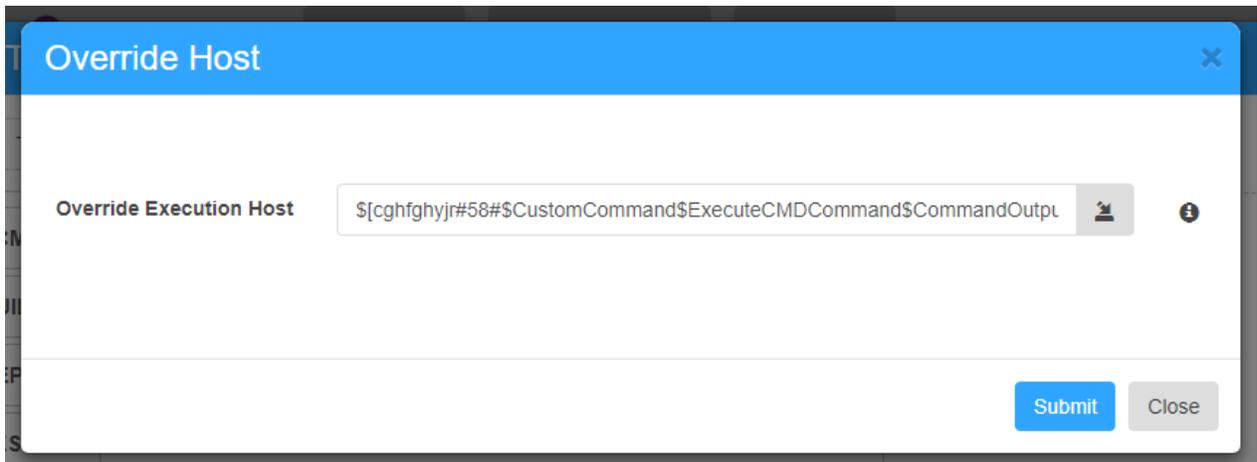
Disclaimer : if host(Static/dynamic) is invalid/not running/uninstalled/unreachable then the pipeline execution will be stuck at the task. While the task status will remain in progress or Queue for execution host.

Proceed If Failed? - This option give users a choice whether or not to skip the failed

status of a task. If the option is checked the failed status of a task will be ignored by the agent and the execution will proceed to the next task otherwise the execution will failed as soon as any of the task failed to execute.

If the last task of the pipeline is set to proceed if failed, then it will have no effect until one or more task precedes it.

The task may be failed for three scenarios :

1. If pre-condition fails
2. If task fails to execute
3. If post-condition fails

The effect of **Proceed If Failed?** checkbox on the above failures are:

Failure Type	Checked
Pre-Condition	If the precondition fails the present task will not be executed rather it will switch to the next task if 'Proceed If Failed' is checked.
Task Execution	In both cases if execution is success or failure the task will proceed for execution. execution outcome will reflect on overall task status.
Post-Condition	In both cases if condition is passed or failed the task will proceed for execution execution outcome will reflect on overall task status.

It is recommended that parallel task should be assigned with different Agent.

Email Notification :

User can set users/groups to receive email notifications whenever a task is **passed** or **failed.**

Key Features:
- To receive email notification, email server settings is **mandatory**.
- Both SMTP and Exchange server can send task completion notifications.
- Email notification will be send strictly when a task is **passed** or **failed** and not for stopped status.
- Both users and groups selections will work at a time.
- Only those users/groups will be available in the list in which the pipeline being configured has access,admin user will not be the part.
- Sample mail body:

Pipeline #10 | Task #50 | FinalStatus

Hello User(s),

Please get the details of the task executed.

Pipeline Id	10
Task Id	50
Task Name	Task 003
Agent	LAPTOP23
Execution Status	Passed
Execution Time	1s

NOTE: This is a system generated mail. Please do not reply.

Thanks.
Kovair Devops Support.

Users Configuration:

Individual user email can be set to receive email notification.The admin user is not included in this list. Each user configured will receive a mail whenever a task is **passed** or **failed**.
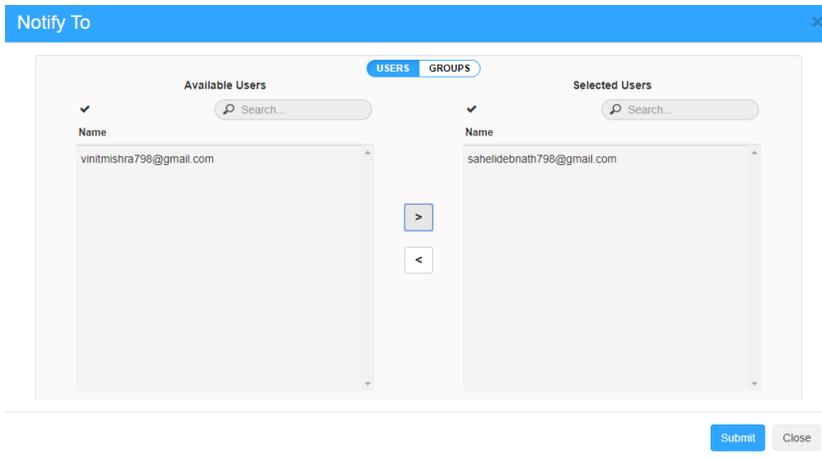
Group Configuration:

Individual groups can be set to receive email notification. All users which belongs to the configured group will receive email notification whenever a task is **passed** or **failed**.

Note :

The group list that appears in the group configuration can easily be verified by referring the project under which the pipeline has been created.

Just open the project list in the application and search for the project under which pipeline is being created, one can find a list of groups against the project. All those groups will be available for configuration.

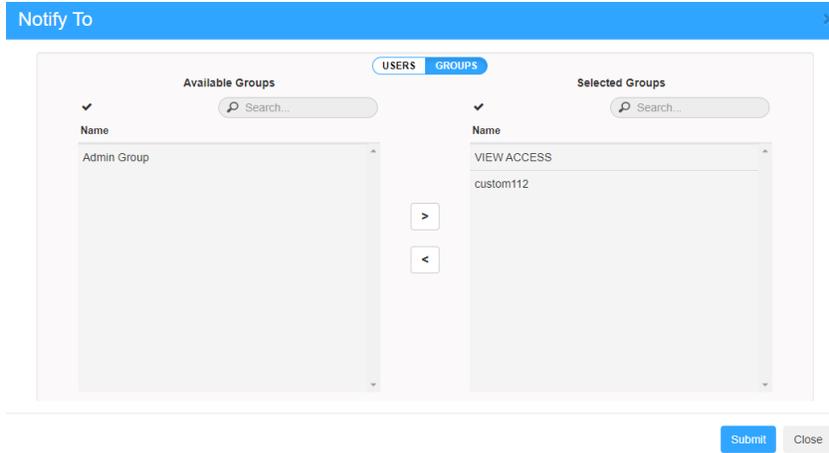| Project Name ⇕	Creation Date ⇕	Modification Date ⇕	Release Count	Group(s)
Demo Project	May 11,2020 12:21	May 26,2020 17:57	ACT : 1 ARC : 0	Admin Group VIEW ACCESS custom112

And the users that belong to the above groups can be configured for mail.

 Both users and groups can be configured at a time.

Execute Pipeline

Pipeline can be executed from pipeline configuration page as well as from the list page using action Menu. User can see the Live console during the pipeline execution from [icon] Icon.

Resume Pipeline

Pipeline can be resumed from pipeline configuration page as well as from the list page using action Menu. To resume the task from the configuration page just click on [icon] icon.

The resume option will only be available when the last run of a particular pipeline is failed or stopped.

The pipeline will be resumed from the first stopped or failed task in the pipeline.

In case of parallel task, all the task in a given order will be resumed if any one of the task is failed or stopped in that order.

Trigger pipeline from another pipeline :

User can trigger pipeline from another pipeline using KovairDevops plugin. Just like other plugins this plugin also expose some method to be used in task. Currently only one method "**ExecutePipeline**" is supported. User can use this method of the KovairDevopsPlugin to execute pipeline of any Devops Instance.

Just fill in the proper details of the Devops instance and select a proper pipeline , save the task and pipeline and run It. Pipeline mentioned in the task will be execute in the given instance.

Asynchronous option let the user decide whether the pipeline wait for the triggered pipeline to complete or not. If set to 'YES' the main pipeline will wait untill the triggered pipeline completes its execution otherwise it will switch to next task.

Start-End Release From Pipeline-list

By exploring the action menu of a particular pipeline user can start-end associated release by simply clicking the options '**Start Release**'/'**End Release**'.

P4	⚠ Failed	Jan 09,2020 13:50	rtyuio	dsdsd	🕐 Planning ⚠	☰	▼
Mail Notificati...	✔ Passed	Jan 10,2020 12:48	p1	R7	🕐 P		▼
P2 ddd	⚠ Failed	Jan 09,2020 12:04	Default Project	NewReleaseFromKovair	🕐 P		▼
SonarQube Test	⚠ Failed	Jan 08,2020 18:07	p1	R6	🕐 P		▼

Context menu:
- ▶ Run
- ⏩ Resume
- ▣ Start Release
- 🗄 Archive
- 🗑 Delete
- ↺ Change History

Run Status

After Start the pipeline one run record created with Queue Status and after Agent collect the first task and change the Status to **Running**.

After Successful execution of all task the Status is **Success**. For any failure the Run status will **Failed**.

From Pipeline List page user can see the last three run status with quick Graph. For more Runs user can click on "**Show More Runs Page**". User need to Click on expand ▲ menu to see the Report.

For "Run Duration" Graph system shows only last 10 completed pipelines.

#	Run Name	Run Status	Run By	Start Time	Duration	Console
10	Pipeline_1#10	✔ Passed	admin	Sep 26,2019 10:54	12s	⬛
9	Pipeline_1#9	▪ Stopped	admin	Sep 26,2019 10:53	45s	⬛
7	Pipeline_1#7	✔ Passed	admin	Sep 26,2019 10:50	14s	⬛

Show More Runs

Run Summary All

11.1% 22.2% 66.7%
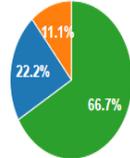
- 🟩 Passed
- 🟧 Failed
- 🟦 Stopped

Delay Indicator

Pipeline:

Show warning?	Condition over actual start date and planned start date of Release	Condition over actual end date and planned end date of Release	Release Status
No	If Actual start date=Planned start date	If Actual end date=Planned end date	Completed
Yes	If Actual start date>Planned start date	If Actual end date=Planned end date	Completed
Yes	Actual start date=Planned start date	Actual end date>Planned end date	Completed
Yes	Actual start date>Planned start date	Actual end date>Planned end date	Completed
Yes	Actual start date>Planned start date	Planned end date=Today's date	In progress
Yes	Actual start date=Planned start date	Today's date>Planned end date	In Progress
Yes	Actual start date>Planned start date	Today's date=Planned end date	In Progress
Yes	Actual start date>Planned start date	Today's date>Planned end date	In Progress
No	Actual start date=Planned start date	Planned end date=Today's date	In progress
No	Today's date=Plannes start date	Today's date=Planned end date	Planning
Yes	Today's date>Plannes start date	Today's date=Planned end date	Planning
Yes	Today's date=Plannes start date	Today's date>Planned end date	Planning
Yes	Today's date>Plannes start date	Today's date>Planned end date	Planning

Release:

| Planned Start Date(Condition)	Show Warning?	Planned End Date Prompt (Condition)	Show Warning?	Release Status
Today's date=Planned start date	No	Today's date=Planned end date	No	Planning
Today's date>Planned start date	Yes	Today's date>Planned end date	Yes	Planning
Actual Start date>Planned Start date	Yes	Today's date>Planned End date	Yes	In Progress
Actual Start date=Planned Start date	No	Today's date=Planned End date	No	In Progress
Actual Start date>Planned Start date	Yes	Actual end date>Planned End date	Yes	Completed
Actual Start date=Planned Start date	No	Actual end date=Planned End date	No	Completed

Pipeline & Release Archival:

Release Archival:

User can now archive unnecessary releases from the release list page.

To archive a release, follow the following steps:

■ Navigate to release list page.

■ Select a release to archive. Open the action menu by clicking on the icon ▤
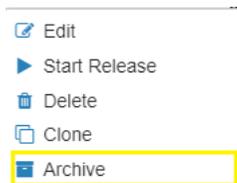
■ Click on Archive. .

■ The release will be archived. Please check the "**Show Archived**" checkbox to view archived releases.

■ ▥ icon indicates the release is archived.

YAML Support:

User can now download YAML from existing pipeline and use the same to create a new pipeline .

To download YAML of a pipeline, following are the steps:

- Navigate to pipeline list page.

- Select a pipeline to get YAML. Open the action menu by clicking on the icon ▤
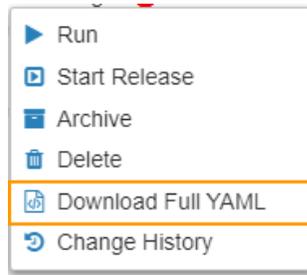
- Click on "Get YAML Script" .

- A file containing YAML with yaml extension will get downloaded.

To create pipeline using YAML click on existing pipeline or click on create new Pipeline button.

Then click on the YAML icon shown below.
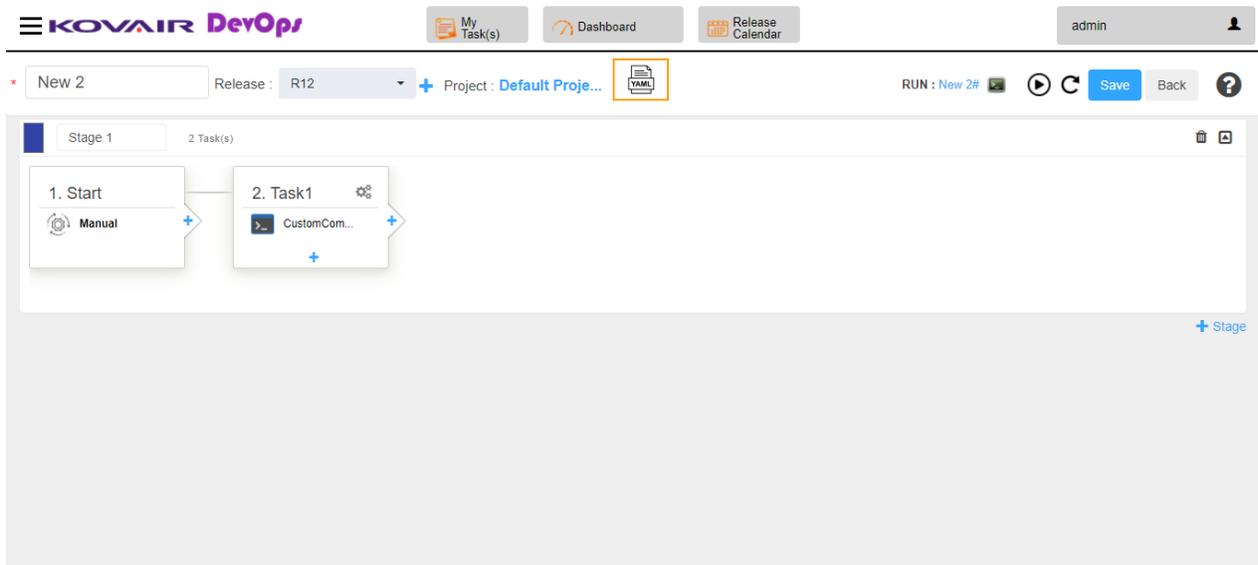
A new page will open with a default YAML definition as below. User can create pipeline definition manually or import previously downloaded YAML of another or same pipeline. If any error occurred

while executing the YAML for existing pipeline then it will be reverted back to previous pipeline definition.

Following are the options on YAML definition page :

- **Import YAML File** : User can import YAML file using previously downloaded YAML file.

- **Reset** : Clicking on reset button will reset the YAML back to initial template.

- **Save** : Clicking on the save button will execute the YAML entered in the text box.

- **Back** : Back button will redirect the user to the pipeline definition page.
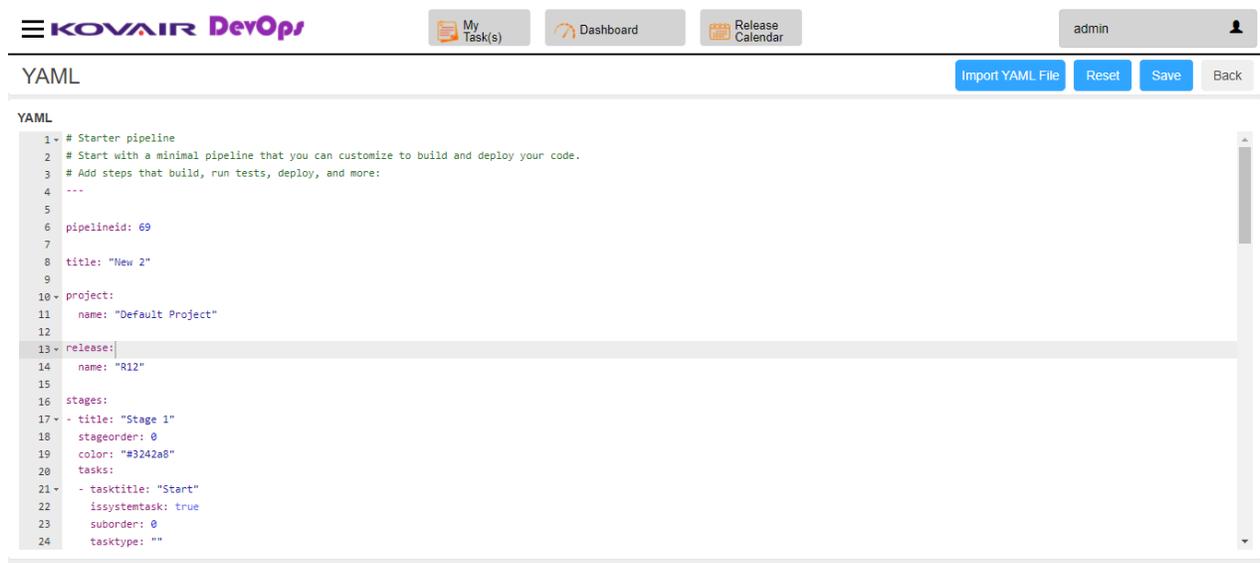
Points to remember while creating or updating the pipeline as below:

1. **For new pipeline without import:**
Allow changing project name and release name if valid in YAML (i.e. can override the Release and Project Name that is previously selected in UI)

2. **For new pipeline with import:**
Change in project name and release name will be discarded and previously selected project name and release name in the previous UI will be considered.

NOTE: Task id in the input parameter of YAML import must be validated by user manually as it may be valid for exported pipeline and not for importing pipeline. Some inputs like pipeline status and pipeline id are managed internally and user provided values will be discarded.

3. **For editing existing pipeline:**

Changes of project name and release name in YAML is silently discarded and will not throw validation to user

like "Project Name does not matches with existing project name of the pipeline" , "release name does not matches with existing pipeline release name".

Any Pipeline linked with the release will also get archived along with the release. Archived releases can only be cloned and deleted.

Pipeline Archival:

User can now archive unnecessary pipelines from the pipeline list page.

To archive a pipeline follow the following steps:

■ Navigate to pipeline list page.

■ Select a pipeline to archive. Open the action menu by clicking on the icon

> Run

☐ Archive

🗑 Delete
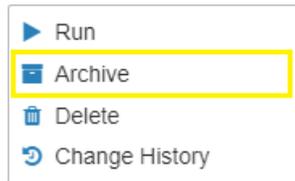
🔁 Change History

■ Click on Archive.

■ The pipeline and the associated release will be archived .. Please check the "**Show Archived**" checkbox to view archived pipelines.

■ icon indicates the pipeline is archived.

Users can only view change history and delete the archived pipelines. Pipeline will also archive the associated release.

Manual Task

Manual task is an important feature that can be associated with pipeline. Manual task can be assigned to a specific user. It will help pipeline to take manual approval to continue the further task. During pipeline execution if any manual task approval is required then the pipeline will be in paused state until task is complete for further execution.

Email Notification : If '**Send Email Notification**' is checked for the manual task an email will be send to the user's email id for approval.
A preview of such mail is :

Hello sdebnath,

It seems that you have a task pending for your approval.
Please review the task and pass or fail accordingly.
Ignore if already done.

Task Subject :
Please approve saheli

NOTE: This is a system generated mail.

To approve this task, please reply with the appropriate command as the subject of the mail with 'Accept' or 'Reject' text.
Example : Manual Task Notification For Pipeline #75 | Task #11 - **Accept**
*The bold text is to be appended to pass the manual task.This will take effect only when the email service is running.
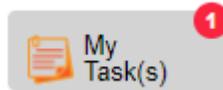
Thanks,
Kovair DevOps Support.

User can pass or fail the task by simply replying to the mail as follows :

Reply this email and append Accept/Reject in the email subject to Pass/Fail the task.
Example : Manual Task Notification For TaskId : #27 **- Accept**
*The bold text is to be appended to pass the manual task.

From application user can click on to see the assigned task for the specific user and can Passed / Failed the task. User can also provide the comment for the Manual task.

Completed task is visible in Completed section.

Report & Dashboard:

All reports are predefined format and can view on tabular view. User can Export the data as .CSV file.

Overall Pipiline Summary	PipelineSummary	☰
Pipeline Summary Details	PipelineSummaryDetails	☰
Overall Run Summary	RunSummary	☰
Run Summary Details	RunSummaryDetails	☰
Execution Summary Details	ExecutionSummaryDetails	☰

Dashboard are based on report output in graphical format.

2 layout Dashboard
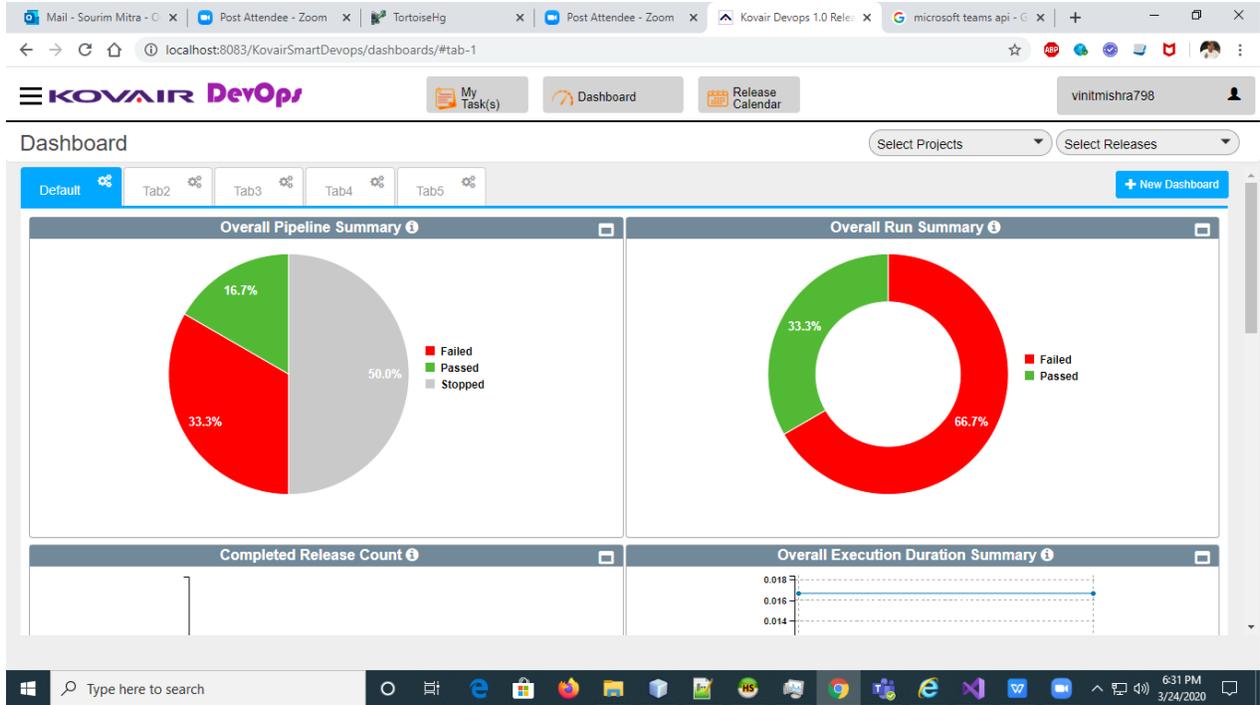
3 Layout Dashboard
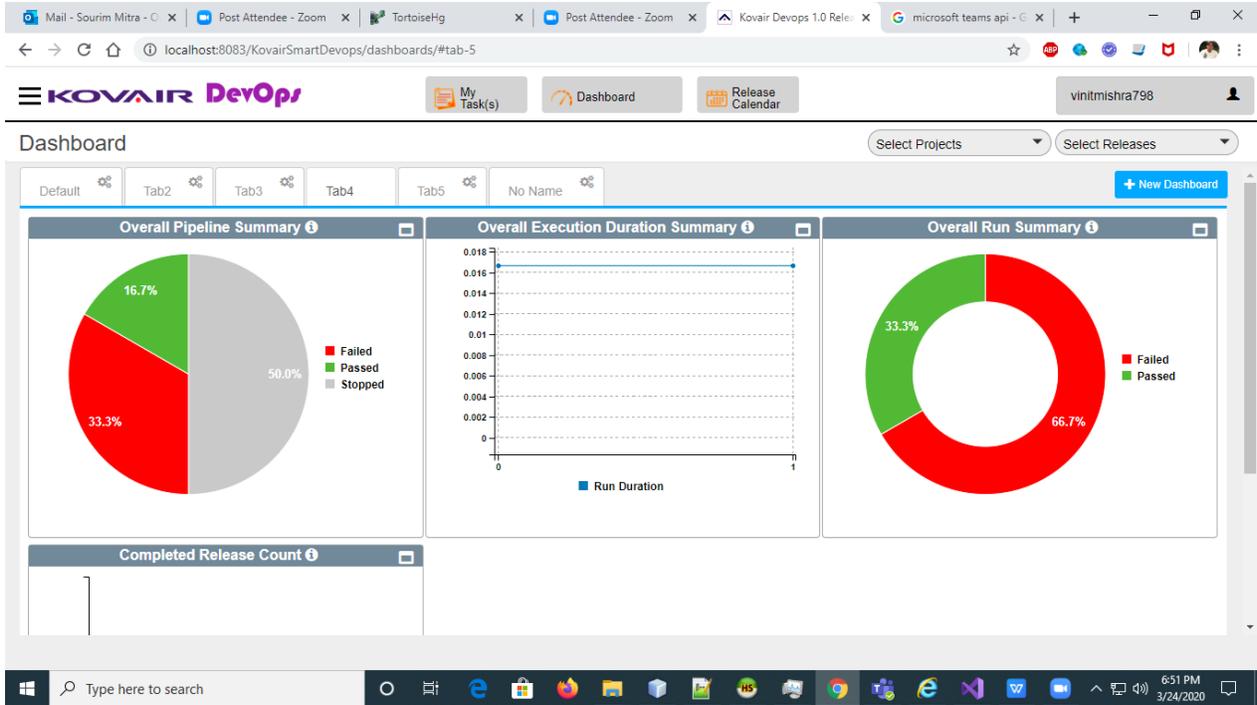
- ➢ User with "FULL" access can create multiple dashboard. Dashboards will be added as tab.
- ➢ Initially there will be only "Default" tab. User can add new tab(s) and rename the existing tab.
- ➢ User can add/edit/delete gadget into the dashboard penal using drag-drop.
- ➢ Dashboards can be 2 paneled or 3 paneled.

User with "VIEW" access can only see the "Default" dashboard which contains 3 reports (Overall Pipeline Summary, Overall Run Summary and Overall Execution Duration Summary). No addition /modifications are allowed.

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Add New Dashboard

---
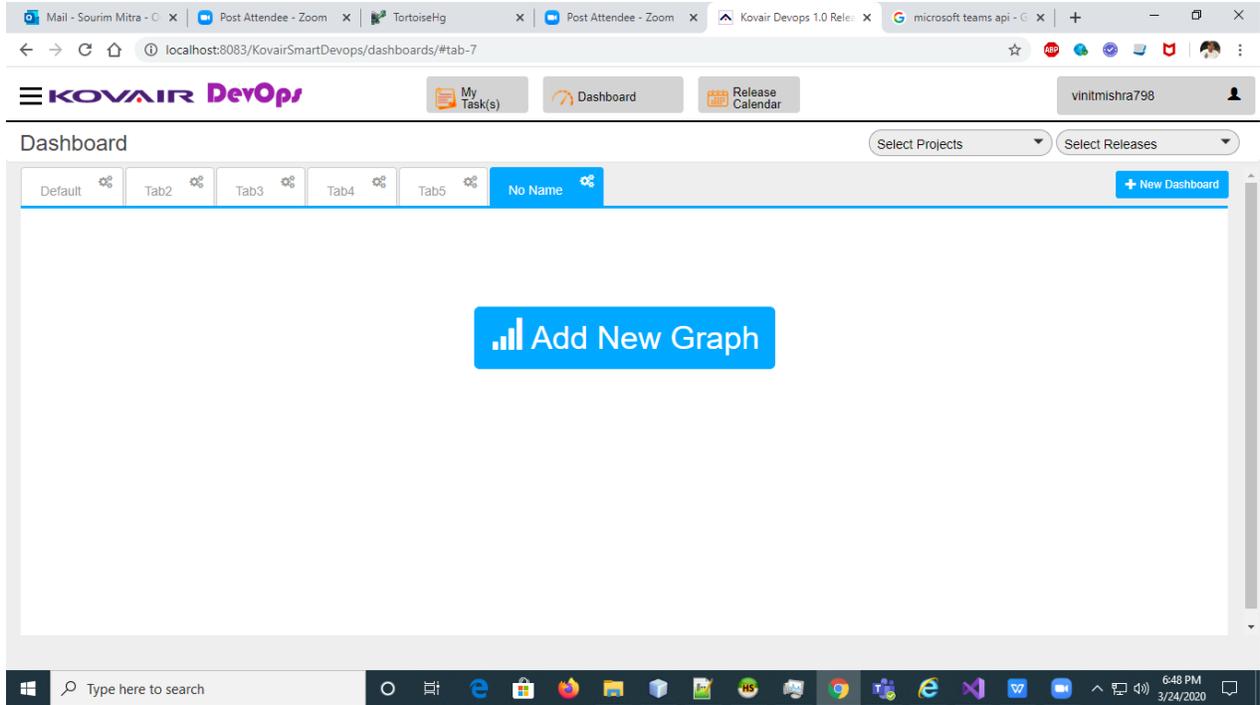
2 Paneled Report Add/Edit/Delete Section

3 Paneled Report Add/Edit/Delete Section
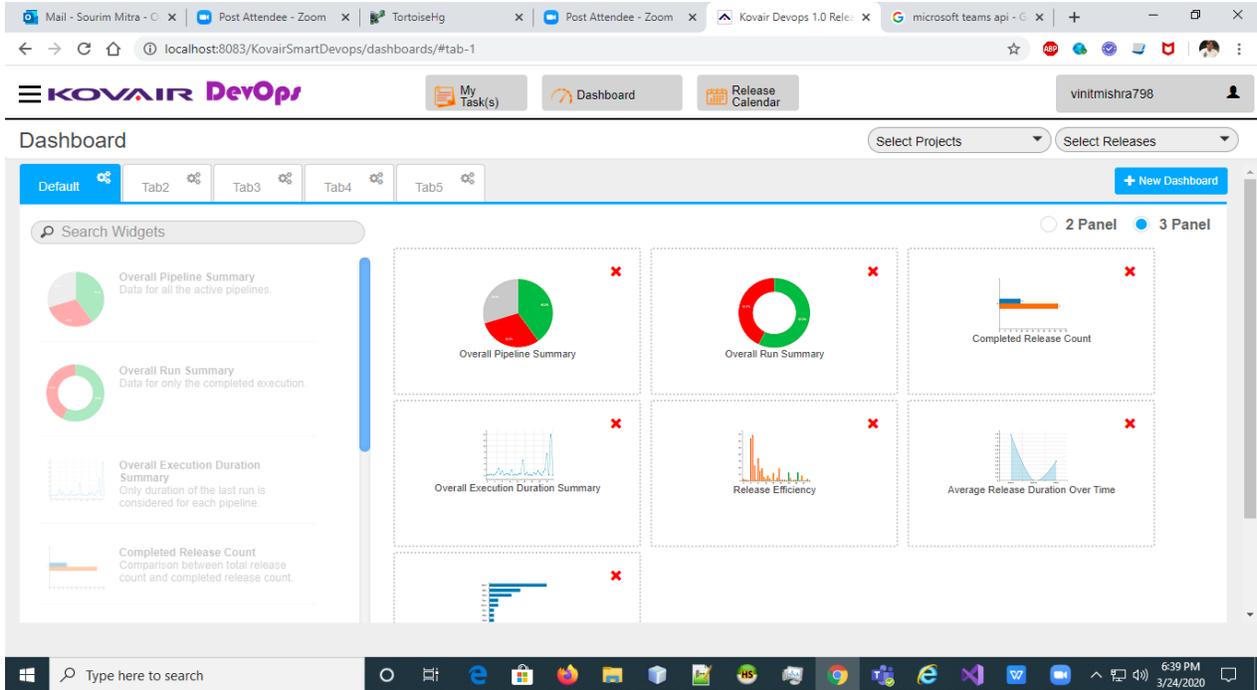
Overall Execution Duration Summary - Run Duration must be greater than one minute.

Filters:

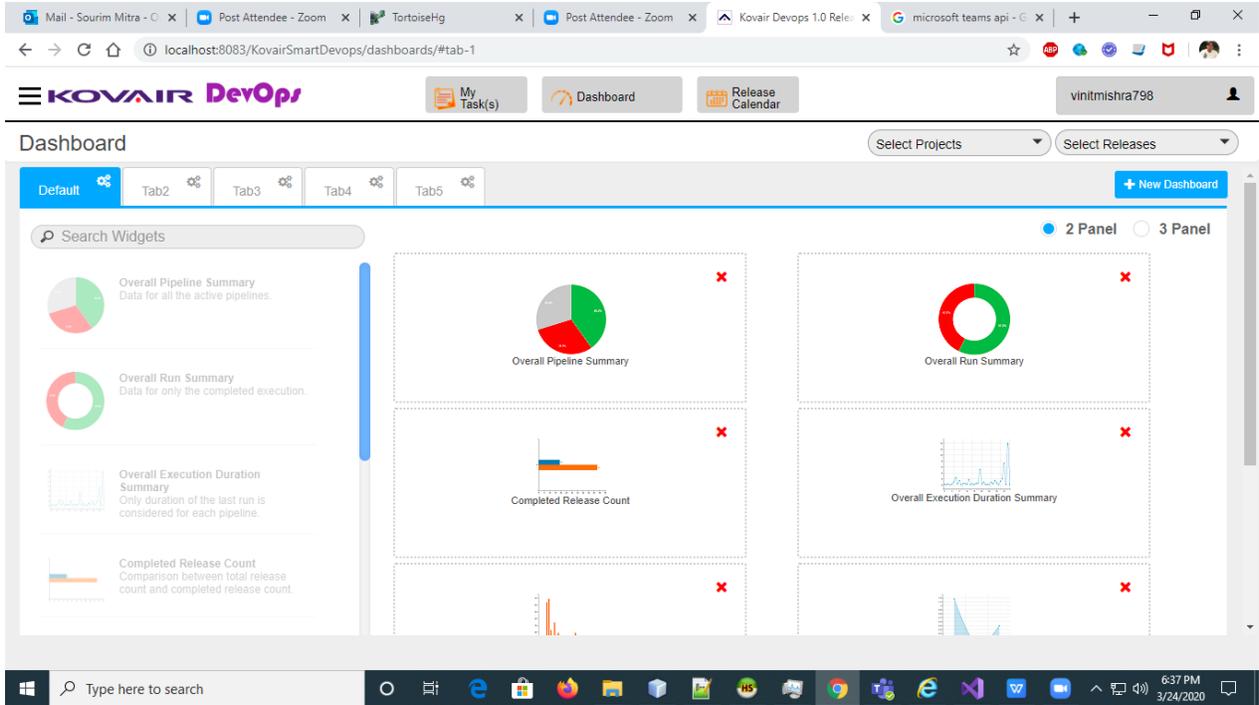Reports & Dashboards can be filtered based on projects and releases. User need to select the projects and releases from the dropdown provided on the these page. Based on the selected items the data will be shown.

Key feature of filters:

- Project filter will contain only those projects which have non archived release associated with it.

- Release filter will contain only those releases which have non archived pipelines associated with it.

- Release filter will be reset on changing project selection.

Reports

Following are the reports that are part of this release, explained below.

Completed Release count

Description: Comparison between total release count and completed release count. (Completed Release count means, releases have actual end date). <u>If There is no completed Release count present then the blue bar will not be shown</u>

Tabular Report – Graphical Report

Completed Release Count	All Release Count
10	14
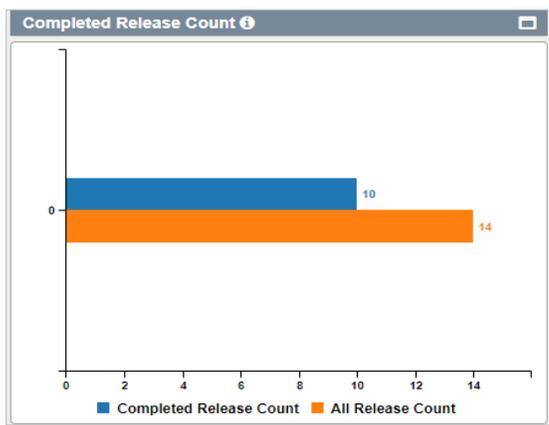
Average Release duration over time

Description Average release duration based on Year-Month.

Tabular Report – Graphical Report

Year-Month	Average Release Duration
2019-9	30
2019-10	4.875
2019-11	15
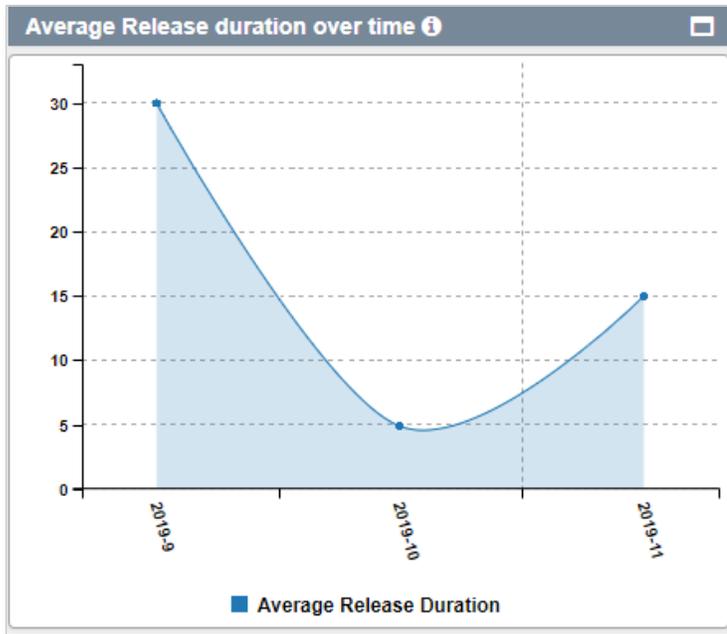
Release Completion

Description Release completion (Planned vs actual).

Tabular Report – Graphical Report

Title	Planned End Date	Actual End Date
Default Release	11/21/2019	11/6/2019
Release 001	10/22/2019	11/3/2019
Release 002	10/22/2019	10/26/2019
Release 003	10/22/2019	10/26/2019
Release 004	11/2/2019	10/22/2019
Release 008	11/2/2019	10/21/2019
Release 009	12/2/2019	12/6/2019
Release 010	12/12/2019	10/22/2019
Release 011	2/12/2020	10/22/2019
Release 012	10/26/2019	10/22/2019
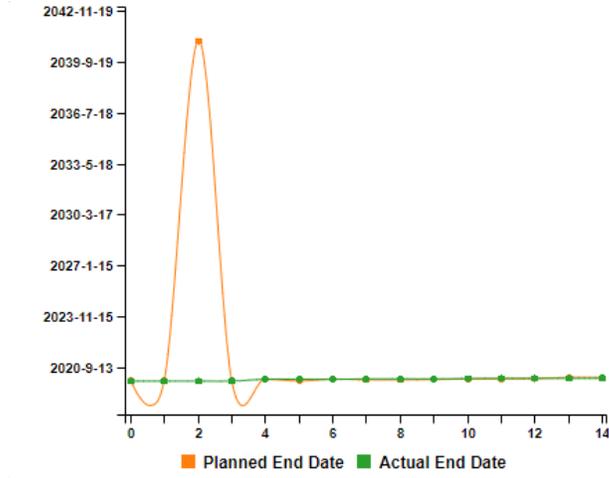
The Releases that are NOT completed (Actual end date is not present) those releases are ignored

Release Efficiency

Description Release Efficiency (Count of Manual Tasks Vs Automation Tasks). Consider only executed pipeline.

Tabular Report – Graphical Report

Release Title	Pipeline	Automated Task Count	Manual Task Count
Default Release	Pipeline 001	2	0
Release 010	Pipeline 002	3	0
Release 011	Pipeline 003	2	0
Release 012	Pipeline 004	3	0
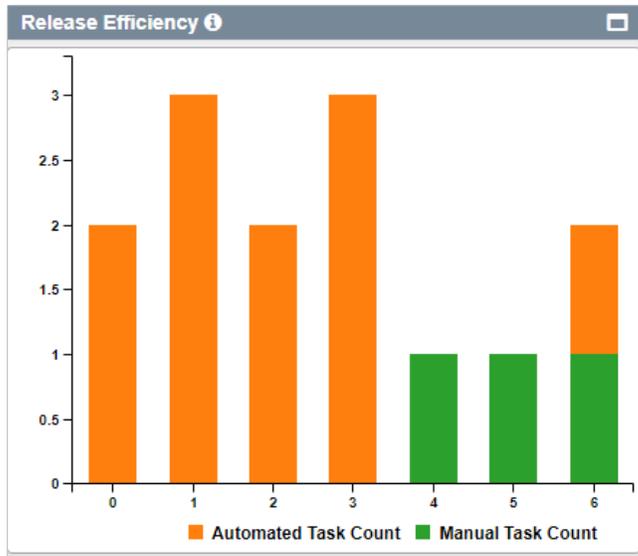
Number of Release per Month

Description This report gives an idea of how many releases are present per month. <u>Releases count depends, when it's been created (creation date).</u>

Tabular Report – Graphical Report

Month-Year	Release Count
Sep-19	3
Oct-19	9
Nov-19	1

Top 10 longest Release

Description 10 longest releases based on actual start date and actual end date. To view the data of this graph, the release duration must be greater than 1 days.
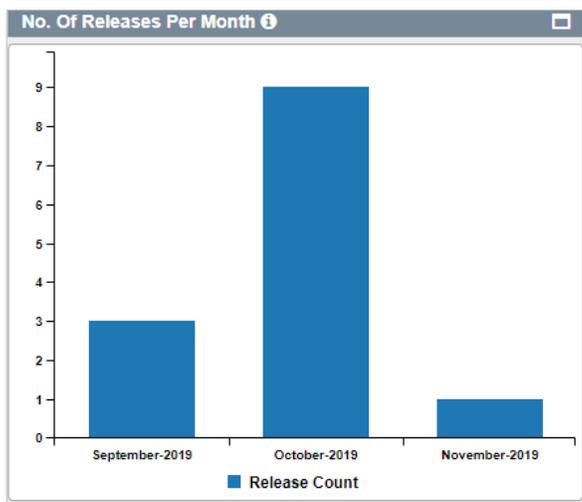
Tabular Report – Graphical Report

Title	Release Duration(in Days)
Release 008	30
Default Release	16
Release 009	15
Release 001	13
Release 002	5
Release 003	5
Release 004	0
Release 010	0
Release 011	0
Release 012	0
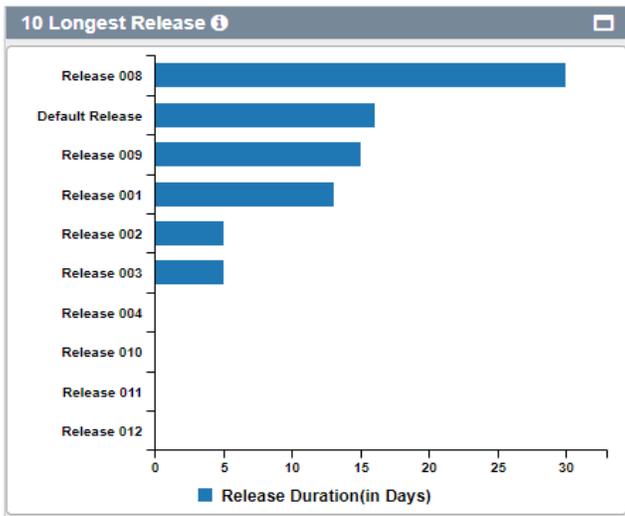
Top 10 longest Pipeline

Description Top 10 Longest pipeline. Longest pipeline of duration after considering only last Run (in days). To view the data of the graph, Pipeline associated last run duration must be greater than 1 days

Tabular Report – Graphical Report

Title	Run Duration(in Days)
Pipeline 002	11
Pipeline 003	10
Pipeline 001	3
Manual	3
Test 1	3
Test 2	2
Pipeline 004	1
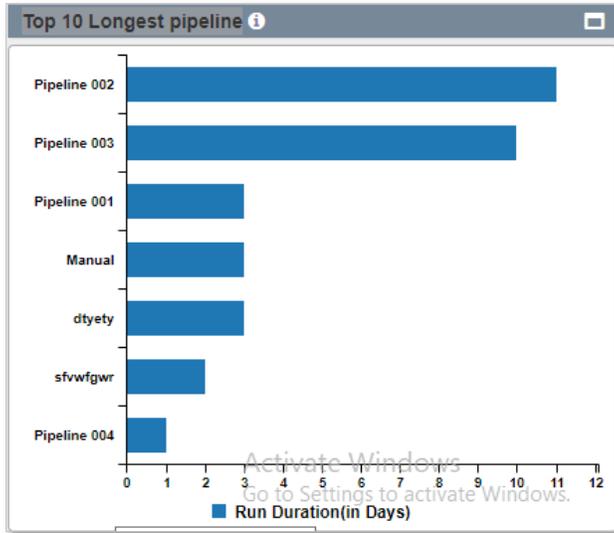
Average Task Duration by Project

Description Average task duration by project, considering only last Run (in minutes). To view the data of the graph, average tasks duration belong to a project must be greater than 1 minute.

Tabular Report – Graphical Report

Title	Avg Task Duration (in Minutes)
Default Project	2.6
Arpan Projects	0
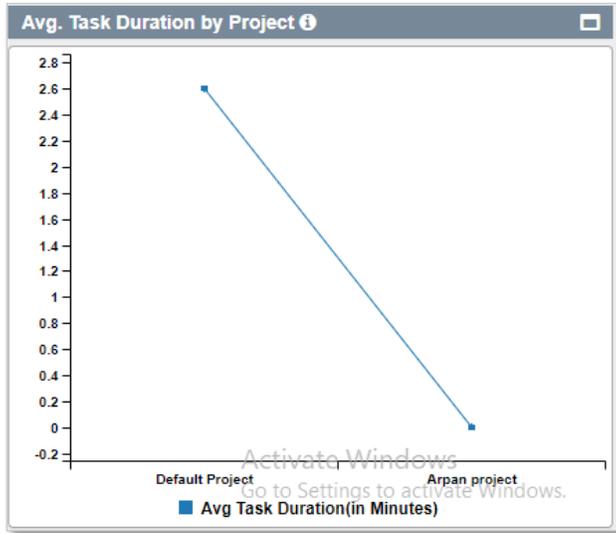
Top 10 Longest Phase

Description Top 10 longest phases(stages). Longest phases of duration after considering only last Run (in seconds). To view the data of the graph, Stage associated tasks of last run average time duration must be greater than 1 second.

Tabular Report – Graphical Report

Title	Phase Duration (in seconds)
Pipeline 002-Stage 1	840
dtyety-Stage 1	45
Pipeline 004-Stage 1	4
sfvwfgwr-Stage 1	1
bjhj-Stage 1	1
sfvwfgwr-Stage 2	0

Top 10 Longest Phases
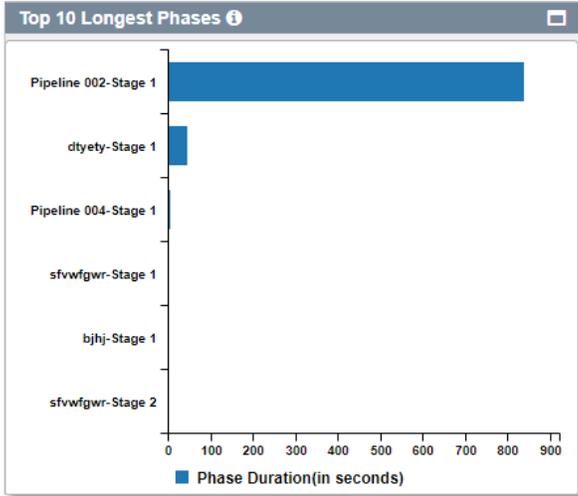
Release Progress on Timeline

Description Data for all releases progress on timeline

Tabular Report – Graphical Report

Title	Actual Start Date	Actual End Date	Planned Start Date	Planned End Date
Default Release	10/21/2019	11/6/2019	10/21/2019	11/21/2019
Release 001	10/21/2019	11/3/2019	10/21/2019	10/22/2019
Release 002	10/21/2019	10/26/2019	10/21/2019	10/22/2019
Release 003	10/21/2019	10/26/2019	10/21/2019	10/22/2019
Release 004	10/22/2019	10/22/2019	10/21/2019	11/2/2019
Release 008	9/21/2019	10/21/2019	10/21/2019	11/2/2019
Release 010	10/22/2019	10/22/2019	7/7/2019	12/12/2019
Release 011	10/22/2019	10/22/2019	7/15/2019	2/12/2020
Release 012	10/22/2019	10/22/2019	10/6/2019	10/26/2019
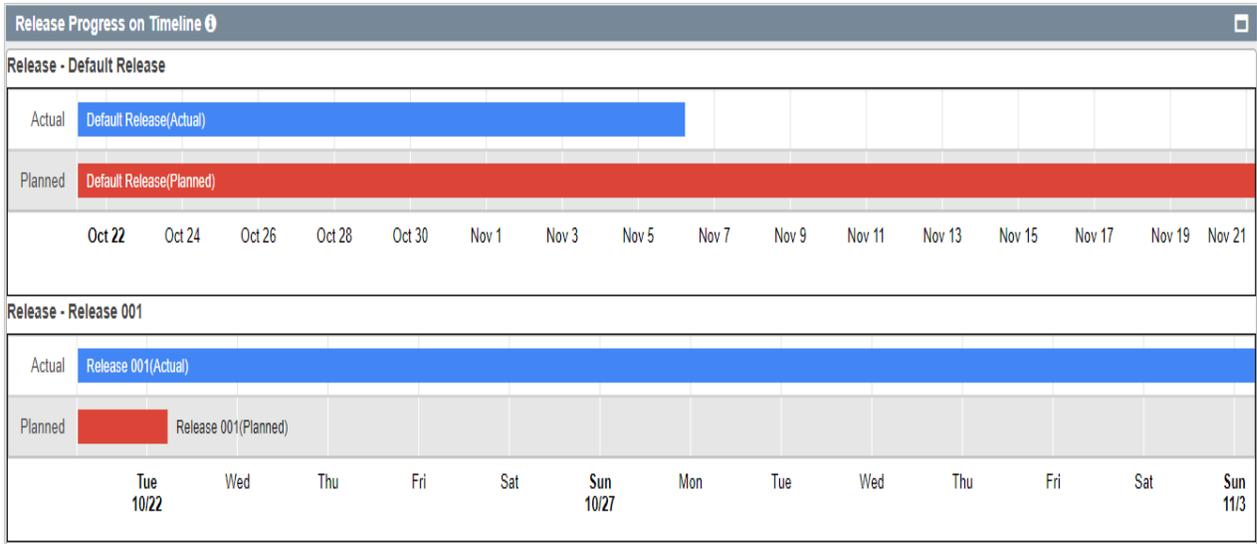
Disclaimer

Filter in Dashboard page

- By default fetches all the project data irrespective of **Select All** or unchecked **Select All** filer, only if configured database not contains any legacy data

- If legacy data present in the database, then **Select All** and **UnSelect All** filtered data may differ.

Additional Services

Agent Service:

Agent service is responsible for Execute Configured task in pipeline. One Service can connect multiple tool via deployed plugins in agent path. At a single point of time one agent can connect one Application server. Configuration.ini should be configured correctly to start the service.

Configuration.ini

```
Baseurl=http://192.168.11.159:8080/KovairDevops
Username=admin
Password=Kn+T/57wKso41IPPF6jujQ==
```

Email Service:

Email Service is connected to Application for various operation. Once the user subscribed the email. User can send proper action as Email subject to dedicated Application email address.

Supported action via Email:

#	Subject Text	Description
1.	List Pipeline	All active pipelines owned by you will be send to you.
2.	Start **[Pipeline_Id]**	Pipeline id provided by you will be executed automatically.
3.	Stop **[Pipeline_Run_Id]**	Pipeline run provided by you will be stopped automatically.
4.	Status **[Pipeline_Run_Id]**	Current pipeline run status will be send to you.
5.	Last Status **[Pipeline_Id]**	Last pipeline run status will be send to you.
6.	Check Health	Checks if the server is active or not.

Kovair Email service should be installed and configured correctly to use this functionality. As well as Email service configuration should be **Enabled** in application server.

Logs

- Application Logs are available in **<Tomcat Path> / AppLog**
- Agent service Logs are available in the agent host

Disclaimer/ Additional Notes:

- Menu → Server → Mail Server → Server Type: <u>GMAIL not yet implemented</u>
- **Multilanguage** is **NOT** supported throughout the application.
- New /Updated Plugin should be installed manually in Agent Path.
- All plugins are tested in **Windows** Only.
- If user tries to access a shared application URL with some filters applied then user will be redirected to that main URL automatically after user logs in with filters removed. But if already logged in to the application and then tries to enter the URL then the filters will work properly.
- URL encryption is not supported yet so if user changes the filter in URL with some invalid data then the filter will not work.
- If any task created parallelly fails, the pipeline execution will wait until all task parallel to the failed task completes execution. Overall Status will be failed.
- Special characters that are supported for condition are -- !@#%^&(){}{}"/|<>\
- If Database connection is lost due to network interruption the database connectivity will be lost. The tomcat needs to be restarted.
- During Manual Task execution if pipeline get stopped manually, then also manual task can be viewed from manual task section with stopped status.
- Any condition change during edit task operation will overwrite the previous configured conditions.
- Spaces are not supported in quick search.

- **_CurrentTaskId** is a restricted string, try not to use this. During Condition settings make sure _CurrentTaskId text should not be remain in condition section during add task. Otherwise condition will not work.
- Change in configuration of task under a pipeline, all the tasks followed by changed task, configuration need to be changed manually. (Only applicable for pre and post condition)
- When task is cloned user need to refresh the pre-post conditions and the reference parameters.
- Currently user needs to manually verify the task references if the task is deleted. References include the task parameters getting used in output/input/conditions of other task.
- In case user removes the selected output parameters of some task then the post condition of that task will be removed automatically and user need to re-configure it again , if the removed parameters are used as a reference to some tasks then the user have to manually update such post conditions.
- If a new task is added/deleted from a pipeline which is in a resumable stage, the new task will not execute on resume as it was not a part of the last run.In that case user need to re run the pipeline.
- Changes done in input parameters will only be considered while resuming pipeline. No other changes (changes in Pre/Post condition,output parameters) will be considered until the pipeline is re-run.
- ALM type tool template hold the password type data.
- The option to take reference from other parameters not includes lookup type field of alm plugin and are not supported in pre and post condition also.
- Generic error will show for jira plugin execution. Execution type can be authentication, or field name field value related anything.
- Parallel task will be added after last parallel task.
- The lookup type fields(get data from api calls) of alm type plugin are exposed as singline text field at pre and post condition side. Other plugin lookup which doesn't perform any api call exposed as lookup.
- If the SMTP configuration give BadCredentials error even if your credentials are correct try increasing the smtp timeout value in application.properties file.
- Task id in the input parameter of YAML import must be validated by user manually as it may be valid for exported pipeline and not for importing pipeline.
- YAML validations are added for ProjectName, ReleaseName, Stage Name, Task Name and Tool Security Mandatory Parameters. Tool parameter values and all other inputs should be validated by user manually.