GitHub Plugin

Plugin Information
View GitHub on the plugin site for more information.

Older versions of this plugin may not be safe to use. Please review the following warnings before using an older version:

- Server-side request forgery
- CSRF vulnerability and lack of permission checks allows capturing credentials
- CSRF vulnerability and insufficient permission checks allow capturing credentials

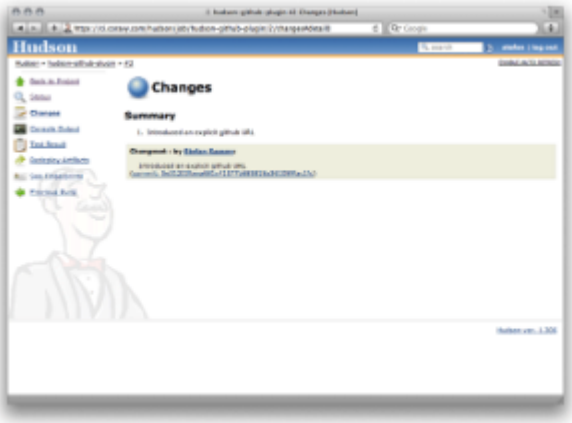
Github Plugin

This plugin integrates Jenkins with Github projects.The plugin currently has three major functionalities:

- Create hyperlinks between your Jenkins projects and GitHub
- Trigger a job when you push to the repository by groking HTTP POSTs from post-receive hook and optionally auto-managing the hook setup.
- Report build status result back to github as Commit Status (documented on SO)
- Base features for other plugins

Hyperlinks between changes

The Github plugin decorates Jenkins "Changes" pages to create links to your Github commit and issue pages. It adds a sidebar link that links back to the Github project page.



When creating a job, specify that is connects to git. Under "Github project", put in: git@github.com:*Person*/*Project*.git Under "Source Code Management" select Git, and put in git@github.com:*Person*/*Project*.git

GitHub hook trigger for GITScm polling

This feature enables builds after post-receive hooks in your GitHub repositories. This trigger only kicks git-plugin internal polling algo for every incoming event against matched repo.

> **Old name**
>
> Previously named as "Build when a change is pushed to GitHub"

To be able to use this feature:

Manual Mode

In this mode, you'll be responsible for registering the hook URLs to GitHub. Click the ? icon (under Manage Jenkins > Configure System > GitHub) to see the URL in Jenkins that receives the post-commit POSTs — but in general the URL is of the form `$JENKINS_BASE_URL/github-webhook/` — for example: `https://ci.example.com/jenkins/github-webhook/`.

Once you have the URL, and have added it as a webhook to the relevant GitHub repositories, continue to **Step 3**.

Automatic Mode (Jenkins manages hooks for jobs by itself)

In this mode, Jenkins will automatically add/remove hook URLs to GitHub based on the project configuration in the background. You'll specify GitHub OAuth token so that Jenkins can login as you to do this.

Step 1. Go to the global configuration and add GitHub Server Config.

Step 2.1. Create your personal access token in GitHub.

Plugin can help you to do it with all required scopes. Go to **Advanced** -> **Manage Additional GitHub Actions** -> **Convert Login and Password to token**

> **Two-Factor Authentication**
>
> Auto-creating token doesn't work with GitHub 2FA

You can create **"Secret text"** credentials with token in corresponding domain with login and password directly, or from username and password credentials.

Step 2.2. Select previously created "Secret Text" credentials with GitHub OAuth token.

> **Required scopes for token**
>
> To be able manage hooks your token should have **admin:org_hook** scope.

> **GitHub Enterprise**
>
> You can also redefine GitHub url by clicking on **Custom GitHub API URL** checkbox.
> Note that credentials are filtered by entered GH url with help of domain requirements. So you can create credentials in different domains and see only credentials that matched by predefined domains.

Step 3. Once that configuration is done, go to the project config of each job you want triggered automatically and simply check "Build when a change is pushed to GitHub" under "Build Triggers". With this, every new push to the repository automatically triggers a new build.

Note that there's only one URL and it receives all post-receive POSTs for all your repositories. The server side of this URL is smart enough to figure out which projects need to be triggered, based on the submission.

Security Implications

This plugin requires that you have an HTTP URL reachable from GitHub, which means it's reachable from the whole internet. So it is implemented carefully with the possible malicious fake post-receive POSTS in mind. To cope with this, upon receiving a POST, Jenkins will talk to GitHub to ensure the push was actually made.

Jenkins inside a firewall

In case your Jenkins run inside the firewall and not directly reachable from the internet, this plugin lets you specify an arbitrary endpoint URL as an override in the automatic mode. The plugin will assume that you've set up reverse proxy or some other means so that the POST from GitHub will be routed to the Jenkins.

Trouble-shooting hooks

If you set this up but build aren't triggered, check the following things:

- Click the "admin" button on the GitHub repository in question and make sure post-receive hooks are there.
  - If it's not there, make sure you have proper credential set in the Jenkins system config page.
- Also, enable logging for the class names
  - `com.cloudbees.jenkins.GitHubPushTrigger`
  - `org.jenkinsci.plugins.github.webhook.WebhookManager`
  - `com.cloudbees.jenkins.GitHubWebHook`
    and you'll see the log of Jenkins trying to install a post-receive hook.
- Click "Test hook" button from the GitHub UI and see if Jenkins receive a payload.

Using cache to GitHub requests

Each **GitHub Server Config** creates own GitHub client to interact with api. By default it uses cache (with **20MB** limit) to speedup process of fetching data and reduce rate-limit consuming. You can change cache limit value in "Advanced" section of this config item. If you set 0, then this feature will be disabled for this (and only this) config.

Additional info:

- This plugin now serves only hooks from github as main feature. Then it starts using git-plugin to fetch sources.
- It works both public and Enterprise GitHub
- Plugin have some limitations

Possible Issues between Jenkins and GitHub

Windows:

- In windows, Jenkins will use the the SSH key of the user it is running as, which is located in the %USERPROFILE%\.ssh folder (on XP, that would be C:\Documents and Settings\USERNAME\.ssh, and on 7 it would be C:\Users\USERNAME\.ssh). Therefore, you need to force Jenkins to run as the user that has the SSH key configured. To do that, right click on My Computer, and hit "Manage". Click on "Services". Go to Jenkins, right click, and select "Properties". Under the "Log On" tab, choose the user Jenkins will run as, and put in the username and password (it requires one). Then restart the Jenkins service by right clicking on Jenkins (in the services window), and hit "Restart".
- Jenkins does not support passphrases for SSH keys. Therefore, if you set one while running the initial Github configuration, rerun it and don't set one.

Pipeline examples

Setting commit status

This code will set commit status for custom repo with configured context and message (you can also define same way backref)

```
void setBuildStatus(String message, String state) {
  step([
      $class: "GitHubCommitStatusSetter",
      reposSource: [$class: "ManuallyEnteredRepositorySource", url: "https://github.com/my-org/my-repo"],
      contextSource: [$class: "ManuallyEnteredCommitContextSource", context: "ci/jenkins/build-status"],
      errorHandlers: [[$class: "ChangingBuildStatusErrorHandler", result: "UNSTABLE"]],
      statusResultSource: [ $class: "ConditionalStatusResultSource", results: [[$class: "AnyBuildResult",
message: message, state: state]] ]
  ]);
}

setBuildStatus("Build complete", "SUCCESS");
```

More complex examle (can be used with multiply scm sources in pipeline)

```
def getRepoURL() {
  sh "git config --get remote.origin.url > .git/remote-url"
  return readFile(".git/remote-url").trim()
}

def getCommitSha() {
  sh "git rev-parse HEAD > .git/current-commit"
  return readFile(".git/current-commit").trim()
}

def updateGithubCommitStatus(build) {
  // workaround https://issues.jenkins-ci.org/browse/JENKINS-38674
  repoUrl = getRepoURL()
  commitSha = getCommitSha()

  step([
    $class: 'GitHubCommitStatusSetter',
    reposSource: [$class: "ManuallyEnteredRepositorySource", url: repoUrl],
    commitShaSource: [$class: "ManuallyEnteredShaSource", sha: commitSha],
    errorHandlers: [[$class: 'ShallowAnyErrorHandler']],
    statusResultSource: [
      $class: 'ConditionalStatusResultSource',
      results: [
        [$class: 'BetterThanOrEqualBuildResult', result: 'SUCCESS', state: 'SUCCESS', message: build.
description],
        [$class: 'BetterThanOrEqualBuildResult', result: 'FAILURE', state: 'FAILURE', message: build.
description],
        [$class: 'AnyBuildResult', state: 'FAILURE', message: 'Loophole']
      ]
    ]
  ])
}
```

Change Log

GitHub Releases

Open Issues

T	Key	Summary	Status	Updated	Created
	JENKINS-57172	"java.security.InvalidAlgorithmParameterException: the trustAnchors parameter must be non-empty" after logging in with Github	OPEN	Apr 24, 2019	Apr 24, 2019

JENKINS-30376	More equals methods on Jenkins runtime objects	OPEN	Apr 24, 2019	Sep 09, 2015
JENKINS-57025	github user incorrectly constructed, org name being assumed	OPEN	Apr 17, 2019	Apr 16, 2019
JENKINS-56318	GitHub initial push triggers 2 builds from Multibranch pipeline	OPEN	Apr 11, 2019	Feb 27, 2019
JENKINS-40522	"Started by" link on downstream jobs does not work correctly	OPEN	Apr 03, 2019	Dec 17, 2016
JENKINS-53694	Add event "Pull request review comments" to the webhook trigger	OPEN	Apr 03, 2019	Sep 20, 2018
JENKINS-56830	consistency between 'repository.url' and 'repository.html_url' in push webhook payload	OPEN	Apr 01, 2019	Apr 01, 2019
JENKINS-56789	Add support for Matrix Aggregation	OPEN	Mar 28, 2019	Mar 28, 2019
JENKINS-56693	Support wiping GitHub API response cache via static method	OPEN	Mar 23, 2019	Mar 22, 2019
JENKINS-55993	Arrange GitHub email notifications support as an alternative transport for webhooks	OPEN	Mar 22, 2019	Feb 06, 2019
JENKINS-52900	Invalid refspec in pull request. Doesn't check for changes in origin branch	OPEN	Mar 04, 2019	Aug 06, 2018
JENKINS-56373	/directive-generator/ - triggers - githubPush doesn't work	OPEN	Mar 03, 2019	Mar 03, 2019
JENKINS-49332	Jenkins unable to manage webhooks of Github organization	OPEN	Feb 21, 2019	Feb 02, 2018
JENKINS-54249	GitHub Commit Status Setter - Cannot retrieve Git metadata	OPEN	Feb 21, 2019	Oct 25, 2018
JENKINS-56104	Jenkins Github SCM building wrong branches	OPEN	Feb 16, 2019	Feb 12, 2019
JENKINS-54980	Jobs are stopped being triggered - java.lang.NullPointerException: There is no credentials with admin access to manage hooks on GitHubRepositoryName[host=github.com, username=myorgname,repository=myreponame]	OPEN	Feb 09, 2019	Dec 03, 2018
JENKINS-56043	(Github plugin) Console Output not echo'ing $payload	OPEN	Feb 08, 2019	Feb 07, 2019
JENKINS-55983	need mechanism to clear GitHubHookRegisterProblemMonitor errors without restart	OPEN	Feb 05, 2019	Feb 05, 2019
JENKINS-50328	Pipeline editor not working if Script Path is set	OPEN	Jan 30, 2019	Mar 21, 2018
JENKINS-55845	Unable to login to jenkins using console	OPEN	Jan 29, 2019	Jan 29, 2019

Showing 20 out of 87 issues