

# SCM Tools Integration with Jenkins Master Server

## 1. Overview

Jenkins integrates seamlessly with Source Code Management (SCM) systems such as Bitbucket, GitHub, and SVN. This enables automatic triggering of builds and deployments whenever changes are committed to repositories.

## 2. Prerequisites

- Jenkins LTS installed and running - Internet access for Jenkins to reach SCM APIs - Admin access to Jenkins and SCM repository - Necessary credentials (API tokens or SSH keys)

## 3. Integration Methods Overview

SCM Tool	Integration Method	Recommended Plugin	Trigger Type
GitHub	Plugin + Webhook	GitHub Integration / Branch Source	Webhook (Push/PR)
Bitbucket	Plugin + Webhook	Bitbucket Branch Source	Webhook (Push/PR)
SVN	Native SCM + Plugin	Subversion Plugin	Poll SCM / Manual Hook

## 4. GitHub Integration

1. Install Plugins: - GitHub Integration Plugin - GitHub Branch Source Plugin - Git Plugin - Pipeline: Multibranch - Credentials Binding Plugin 2. Configure GitHub Credentials: - Add credentials in Jenkins (Secret text or SSH key) 3. Configure GitHub Webhook: - Go to Repository → Settings → Webhooks → Add Webhook - Payload URL: <http://:8080/github-webhook/> 4. Jenkins Job: - Freestyle: Add Git repository and select 'GitHub hook trigger for GITScm polling' - Multibranch Pipeline: Jenkins auto-discovers branches with Jenkinsfile

## 5. Bitbucket Integration

1. Install Plugins: - Bitbucket Branch Source Plugin - Git Plugin 2. Configure Credentials: - Use Bitbucket App Passwords 3. Configure Webhook: - Repository → Settings → Webhooks → Add Webhook - URL: <http://:8080/bitbucket-hook/> 4. Jenkins Job: - Multibranch Pipeline: Auto-discovers branches with Jenkinsfile - Freestyle: Use 'Build when a change is pushed to Bitbucket'

## 6. SVN (Subversion) Integration

1. Install Plugins: - Subversion Plugin 2. Configure Credentials in Jenkins (Username + Password) 3. Add Repository URL in Job (e.g., <https://svn.example.com/repo/trunk>) 4. Build Triggers: - Poll SCM (e.g., H/5 \* \* \* \*) - Webhook (Custom Script): `curl -X POST http://:8080/job/build`

## 7. Verification Steps

- Commit a change and verify webhook triggers the build - Confirm build execution and SCM checkout success

## 8. Best Practices

- Use Personal Access Tokens or SSH keys - Rotate credentials regularly - Prefer Multibranch Pipelines - Use webhooks instead of polling - Keep Jenkins and plugins updated

## 9. References

- GitHub Plugin: <https://plugins.jenkins.io/github-branch-source/> - Bitbucket Plugin:  
<https://plugins.jenkins.io/cloudbees-bitbucket-branch-source/> - SVN Plugin:  
<https://plugins.jenkins.io/subversion/> - Jenkins Webhook Guide:  
<https://www.jenkins.io/doc/book/using/triggering-builds/>

### **Fallback Message:**

"I'm sorry, I can't answer that. Please contact DevOps support Team."