🔔 What is a GitHub Webhook?

A **GitHub Webhook** is a mechanism that allows GitHub to notify Jenkins **instantly** when a specific event occurs in your repository — like a **push**, **pull request**, or **tag**.

🔄 Problem With Poll SCM (As per your notes)

You wrote:

> *“Poll SCM: By given time, Jenkins job will trigger **with condition**. If no commit → Jenkins skips. If commit → job triggers.”*

✅ True. But this leads to:

> *“At 45th min I try to trigger but no commit; commit happens at 46th min → Jenkins must wait till 47th min.”*

This introduces **unnecessary delay**, and can miss real-time responsiveness. That’s where **Webhooks** are a better solution.

✅ Why Use GitHub Webhooks?

> *"When commit happens in Git repo, Jenkins job should trigger **immediately**."*
> You also noted:
> *"Solution: GitHub Hooks"*

✔️ Exactly! GitHub Webhooks remove the delay caused by Poll SCM.
✔️ They let GitHub **push** changes to Jenkins (instead of Jenkins polling GitHub).

🛠️ Step-by-Step Setup Using Your Notes + Best Practices

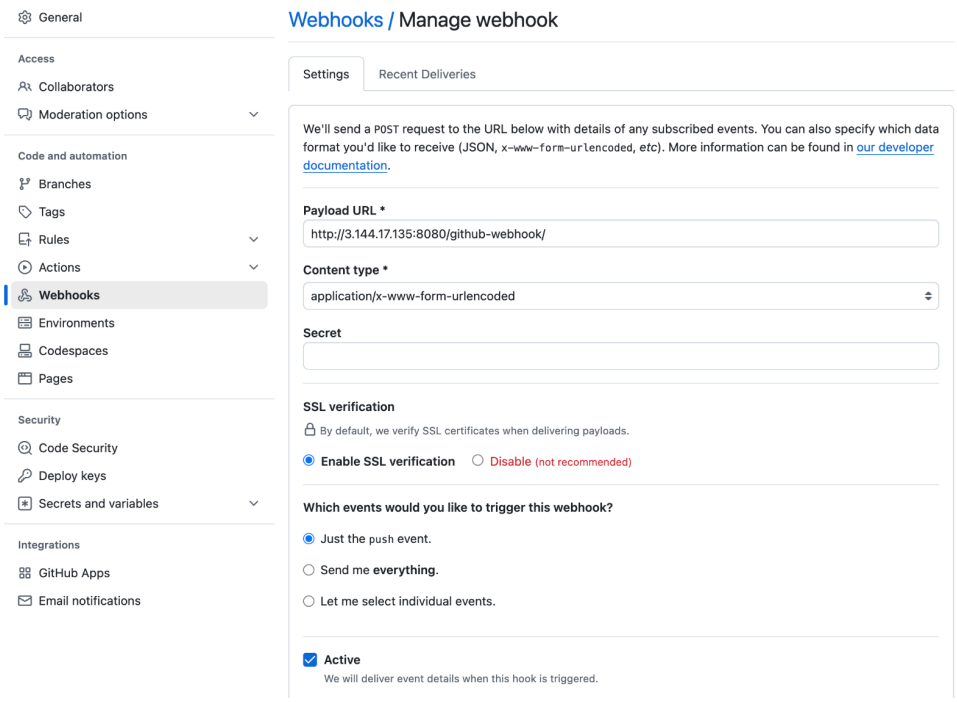
STEP 1: Jenkins Configuration

Inside your Jenkins Job:

1. Go to `Configure`

2. In **Build Triggers**, check:
   ✅ **GitHub hook trigger for GITScm polling**

🔍 This tells Jenkins: *"Don't poll. Just wait for GitHub to notify us."*
It uses `/github-webhook/` endpoint internally.



STEP 2: GitHub Configuration

You wrote:

> *"Goto GitHub → Username → RepoName → Settings → Webhooks → Add webhook"*

Here's the breakdown:

1. Go to:
   `https://github.com/<your-username>/mahalogin`

2. Click **Settings** in the top repo bar.

3. Click **Webhooks** in the left-side menu.
4. Click **Add Webhook**

STEP 3: Fill Webhook Details

You noted: "Add webhook → Jenkins server URL"

Field	Value
Payload URL	`http://<your-jenkins-public-ip>:8080/github-webhook/`
Content type	`application/json`
Secret	*(Optional – can be blank unless you're securing it)*
Events to Trigger	✅ *Just the push event*

💬 Your Note: *"Just the push event"* — correct. You don't need issue or PR events.

STEP 4: Save Webhook

Click **Add Webhook** on GitHub.
GitHub will **test the connection** by sending a sample payload to Jenkins.

✅ Expected Behavior

Now, when you push changes to your repo:

- GitHub sends a webhook request to Jenkins.
- Jenkins **immediately triggers the job**.
- No need for `polling`, no delay.

> 💡 Your goal from the notes is fulfilled:
> *"When commit happens, Jenkins job should trigger immediately."*

💡 **Key Differences (Recap)**

Feature	Poll SCM	GitHub Webhook
Trigger Style	Jenkins pulls GitHub (polls)	GitHub pushes notification to Jenkins
Delay	Possible (based on interval)	Instant trigger
Network Load	Higher (frequent polling)	Lower (event-driven)
Setup	Only Jenkins	GitHub + Jenkins

🔐 Bonus Tips:

- Make sure Jenkins is **publicly accessible** for GitHub to reach it (use a tool like ngrok during local testing).
- You can view webhook deliveries in GitHub → Settings → Webhooks → **Recent Deliveries**.

Would you like help:

- Getting a **public IP** or using **ngrok** to expose Jenkins locally?
- Adding a **shared secret** for security validation?
- Verifying webhook logs in Jenkins and GitHub?