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## Snyk GUI Setup & Scanning Java Application (Step-by-Step Guide)

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### 1. What is Snyk? (Quick Recap)

Snyk is a **developer-first security platform** that helps identify and fix:

- Vulnerabilities in **open-source dependencies**
- Issues in **container images**
- Misconfigurations in **Infrastructure as Code (IaC)**
- Security flaws in **custom source code**

It integrates with:

- GitHub / GitLab / Bitbucket
- CI/CD tools (Jenkins, GitHub Actions, etc.)
- IDEs (IntelliJ, VS Code, Eclipse)

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### 2. Prerequisites

Requirement	Description
OS	Ubuntu / Windows / macOS

Java	JDK 8 or higher
Maven or Gradle	For Java project builds
Internet	Required for connecting to Snyc Cloud
Web Browser	For GUI access
Snyk Account	<a href="https://snyk.io">https://snyk.io</a> (Free signup)

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### 3. Step 1 – Create a Snyk Account (GUI Setup)

1. Go to  <https://snyk.io>
2. Click **Sign up**
3. Choose a method:
  - GitHub
  - GitLab
  - Bitbucket
  - Email & Password

Once signed in, you'll be redirected to the **Snyk Dashboard**:

<https://app.snyk.io/>

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## 4. Step 2 – Connect Your Code Repository (GUI)

In the **Snyk Dashboard**, click on:

Projects → Add Projects

- 1.
2. Choose your **Source Control Platform** (e.g., GitHub)
3. Authorize Snyk to access your repositories
4. Select the **Java project repository**
5. Click **Add Selected Repositories**

 Snyk will:

- Clone your repo
  - Detect **pom.xml** (Maven) or **build.gradle**
  - Analyze dependencies and transitive libraries
  - Display a vulnerability report
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## 5. Step 3 – Scan Java Project Locally (CLI Integration)

Although the GUI does automatic scans, it's common to also scan locally or in CI/CD.

### Install Snyk CLI

```
npm install -g snyk
```

Verify:

```
snyk --version
```

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## **Authenticate the CLI with GUI**

Run:

```
snyk auth
```

This opens your browser → log into your Snyk account → the CLI is now linked with your GUI dashboard.

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## **Test a Java Project Locally**

Assuming your project has a `pom.xml` (Maven-based):

```
cd my-java-app  
snyk test
```

Sample output:

Testing /my-java-app...

```
✗ Medium severity vulnerability found in org.springframework:spring-core@5.2.0  
- Description: Denial of Service (DoS)  
- Info: https://snyk.io/vuln/maven:org.springframework:spring-core:20191111  
- Fix: Upgrade to version 5.2.3 or later
```

Tested 120 dependencies for known issues, found 4 issues.

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## Monitor the Project (Send Report to GUI)

After testing locally, upload results to your dashboard for **continuous monitoring**:

snyk monitor

You'll see the project appear in your GUI under:

Projects → Imported via CLI

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## 6. Step 4 – Interpreting Results in Snyk GUI

In the web console:

- **Dashboard Overview:**  
Shows all projects with vulnerability counts.
- **Project View:**  
Displays:
  - Vulnerability name and severity (Critical, High, Medium, Low)
  - Dependency path (e.g., spring-core → commons-logging)
  - Fix available (version upgrade or patch)
  - CVSS score and CWE info

### Example:

**X** Prototype Pollution (High)

Package: com.fasterxml.jackson.core:jackson-databind

Introduced through: spring-boot-starter-json@2.5.2

Fixed in: 2.13.4

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## 7. Step 5 – Automatically Fix Vulnerabilities

You can use **Snyk Wizard** to automatically upgrade or patch dependencies:

snyk wizard

It:

- Interactively suggests dependency upgrades
  - Applies **.snyk** policy file for ignored issues
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## 8. Step 6 – Continuous Scanning and Alerts

Snyk continuously scans your projects:

- Whenever a new vulnerability is disclosed
- You'll receive email and dashboard alerts
- GitHub PRs will show **security warnings** if new issues are found

You can view:

- Trend graphs of vulnerability count over time

- Severity distributions
  - Auto-fix pull requests (if enabled)
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## 9. Optional: Snyk IDE Plugin (Java)

For real-time feedback while coding:

**IntelliJ IDEA:**

1. Open IntelliJ → [Settings](#) → [Plugins](#)
  2. Search: **Snyk Vulnerability Scanner**
  3. Install & restart IDE
  4. Log in to Snyk from IDE
  5. It highlights vulnerabilities in your dependencies live as you code.
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## 10. Optional: Snyk Integration with Jenkins (for Java build)

Example Jenkins pipeline snippet:

```
pipeline {  
  agent any  
  stages {  
    stage('Build') {  
      steps {  
        sh 'mvn clean install'  
      }  
    }  
  }  
}
```

```

}
stage('Security Scan') {
  steps {
    withCredentials([string(credentialsId: 'SNYK_TOKEN', variable: 'SNYK_TOKEN')]) {
      sh 'snyc auth $SNYK_TOKEN'
      sh 'snyc test --all-projects'
      sh 'snyc monitor'
    }
  }
}
}
}
}

```

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## 11. Best Practices Notes

Area	Best Practice
Authentication	Always link CLI and GUI using <code>snyc auth</code>
Scanning Frequency	Run scans daily or before releases
Policies	Use <code>.snyc</code> file to ignore or patch selectively
Remediation	Prefer upgrades over ignoring
Team Setup	Assign projects to teams via Snyc Organizations
Alerts	Configure Slack or email notifications
CI/CD	Enforce scan results as build gates

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## 12. Validation Checklist

Step	Description	Status
Snyk Account Created	GUI accessible	✓
Repository Linked	GitHub or local	✓
Java Project Detected	<code>pom.xml</code> found	✓
CLI Authenticated	<code>snyk auth</code> successful	✓
Scan Performed	<code>snyk test</code> output visible	✓
Dashboard Updated	Project appears in GUI	✓
Alerts Enabled	Email notifications configured	✓

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### ✓ 13. Summary

- Snyk GUI offers **real-time monitoring** of vulnerabilities in your Java apps.
  - The **CLI tool** provides local and CI/CD scanning capabilities.
  - You can integrate Snyk with **GitHub**, **Jenkins**, **IntelliJ**, and **Maven** builds.
  - It's a **must-have tool** for DevSecOps pipelines ensuring security compliance before deployment.
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