



**QA Automation**  
**<<Jenkins >>**

# Jenkins

Jenkins — программная система с открытым исходным кодом на Java, предназначенная для обеспечения процесса непрерывной интеграции программного обеспечения.

Ответвлена в 2008 году от проекта Hudson, принадлежащего компании Oracle, основным его автором — Косукэ Кавагути

Возможности Jenkins можно расширять с помощью плагинов.

В 2011 году Jenkins получил награду InfoWorld как лучший проект с открытым исходным кодом

Официальный сайт <https://www.jenkins.io/doc/>

[Изучай углубленно](#)

# Jenkins

## **\*\*Run the WAR file\*\***

The Jenkins Web application ARchive (WAR) file can be started from the command line like this:

1. [Download](#) the (Jenkins WAR file) to an appropriate directory on your machine.
2. Open up a terminal/command prompt window to the download directory.
3. Run the command из папки Tools `java -jar jenkins.war`  
Найти длинный код (следующий слайд)
4. Browse to <http://localhost:8080>  
Внести разово код в строку

# Jenkins

Найдите в тексте между звездочками код для активации  
(это нужно сделать только первый раз)

```
Command Prompt - java -jar jenkins.war

tiating singletons in org.springframework.beans.factory.support.DefaultListableBeanFactory@710ecaba: defining beans [fi
ter,legacy]; root of factory hierarchy
020-11-01 18:25:02.980+0000 [id=33] INFO jenkins.install.SetupWizard#init:

*****
*****
*****

jenkins initial setup is required. An admin user has been created and a password generated.
Please use the following password to proceed to installation:

5031e22382f497f8e51e7c91f038d4e

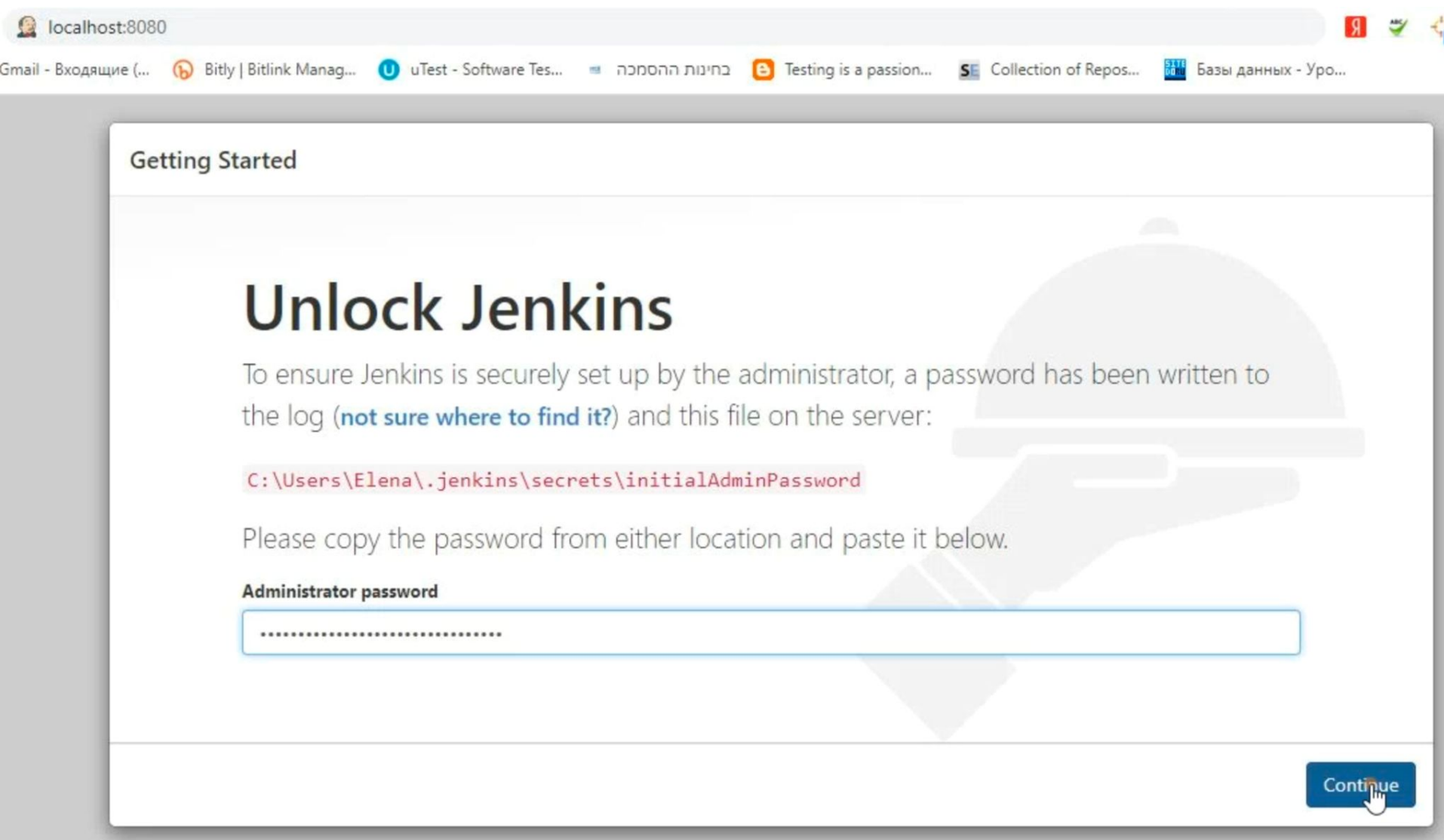
This may also be found at: C:\Users\Elena\.jenkins\secrets\initialAdminPassword

*****
*****
*****

020-11-01 18:25:22.700+0000 [id=32] INFO jenkins.InitReactorRunner$1#onAttained: Completed initialization
020-11-01 18:25:22.739+0000 [id=21] INFO hudson.WebAppMain$3#run: Jenkins is fully up and running
020-11-01 18:25:23.358+0000 [id=47] INFO h.m.DownloadService$Downloadable#load: Obtained the updated data file fo
hudson.tasks.Maven.MavenInstaller
020-11-01 18:25:23.360+0000 [id=47] INFO hudson.util.Retrier#start: Performed the action check updates server suc
essfully at the attempt #1
020-11-01 18:25:23.374+0000 [id=47] INFO hudson.model.AsyncPeriodicWork#lambda$doRun$0: Finished Download metadat
. 24,694 ms
```

# Jenkins

Внесите код в строку и нажмите [continue]



localhost:8080

Gmail - Входящие (...)

Bitly | Bitlink Manag...

uTest - Software Tes...

בחינות ההסמכה

Testing is a passion...

Collection of Repos...

Базы данных - Уро...

## Getting Started

# Unlock Jenkins

To ensure Jenkins is securely set up by the administrator, a password has been written to the log ([not sure where to find it?](#)) and this file on the server:

```
C:\Users\Elena\.jenkins\secrets\initialAdminPassword
```

Please copy the password from either location and paste it below.

**Administrator password**

[Continue](#)

# Jenkins

## Выбираем install suggested plugins

Getting Started



### Customize Jenkins

Plugins extend Jenkins with additional features to support many different needs.

#### Install suggested plugins

Install plugins the Jenkins community finds most useful.

#### Select plugins to install

Select and install plugins most suitable for your needs.



# Jenkins

Ждем результата загрузки

Getting Started

## Getting Started

✓ Folders Plugin	Formatter Plugin		Formatter Plugin	
✓ Build Timeout	✓ Build Timeout	✓ Credentials Binding Plugin	✓ Credentials Binding Plugin	Build Timeout ** Pipeline: Step API ** Token Macro Build Timeout ** Credentials ** Plain Credentials ** Credentials ** Plain Credentials ** SSH Credentials Credentials Binding ** SSH Credentials Credentials Binding ** SCM API ** Pipeline: API Timestampers
Timestampers	Timestampers	Workspace Cleanup	Ant	
Workspace Cleanup	Ant	Gradle	Gradle	
Pipeline	Pipeline	GitHub Branch Source	Pipeline: GitHub Groovy Libraries	
Pipeline: Stage View	Git	SSH Build Agents	Matrix Authorization Strategy	

# Jenkins

## Создаем учетную запись

### Getting Started

## Create First Admin User

Имя пользователя:

Пароль:

Повторите пароль:

Ф.И.О.:


Адрес электронной почты:






# Jenkins


Добавим английский язык


 **Jenkins**


поиск





Jenkins


 Создать Item


 Пользователи

 История сборок

 **Настроить Jenkins**

 My Views

 Lockable Resources

 New View

**Очередь сборок** ^

Очередь сборок пуста


**Состояние сборщиков** ^

## Настройка Jenkins


Jenkins root URL is empty but is required for the proper operation of many Jenkins features like email notifications, PR status updates and environment variables such as `BUILD_URL`.

Please provide an accurate value in [Jenkins configuration](#).


## System Configuration

**Конфигурация системы**


Конфигурация глобальных настроек и путей.

**Конфигурация глобальных инструментов**


Конфигурация инструментов, их расположение и автоматическая установка.

**Управление плагинами**

Добавить, удалить, включить плагины функциональности Jenkins.

**Управление средами сборки**

Позволяет добавлять, удалять, контролировать и анализировать среды сборки.

**Install as Windows Service**

Installs Jenkins as a Windows service to this system, so that Jenkins starts automatically when the machine boots.

# Jenkins

## Добавим плагин locale

The screenshot shows the Jenkins web interface for managing plugins. On the left, there are navigation links: 'Домой' (Home) with a green arrow icon and 'Настроить Jenkins' (Configure Jenkins) with a gear icon. The main content area has a search bar at the top with the text 'locale'. Below the search bar are four tabs: 'Обновления' (Updates), 'Доступные' (Available), 'Установленные' (Installed), and 'Дополнительно' (Advanced). The 'Доступные' tab is selected. Below the tabs is a table of available plugins. The table has columns: 'Установить' (Install), 'Наименование' (Name), 'Версия' (Version), and 'Released'. The 'locale' plugin is listed with a checked checkbox in the 'Установить' column. The plugin name is 'Locale', and it has sub-plugins 'localization' and 'User Interface'. A description states: 'This plugin lets you control the language of Jenkins.' Below the description is a yellow warning box: 'This plugin is up for adoption! We are looking for new maintainers. Visit our [Adopt a Plugin](#) initiative for more information.' At the bottom of the table are three buttons: 'Установить без перезагрузки' (Install without restart), 'Загрузить и установить после перезагрузки' (Download and install after restart), and 'Обновлено: 35 минут назад' (Updated: 35 minutes ago). To the right of these buttons is a button 'Проверить сейчас' (Check now). Red arrows point from the title 'Добавим плагин locale' to the search bar, the 'Доступные' tab, and the 'Загрузить и установить после перезагрузки' button. At the bottom of the page, there is a footer with 'jenkins.war' and a 'Show all' link.

Домой Настроить Jenkins

locale

Обновления Доступные Установленные Дополнительно

Установить ↑	Наименование	Версия	Released
<input checked="" type="checkbox"/>	<b>Locale</b> localization User Interface This plugin lets you control the language of Jenkins. <b>This plugin is up for adoption!</b> We are looking for new maintainers. Visit our <a href="#">Adopt a Plugin</a> initiative for more information.	1.4	2 года 0 месяцев ago


Установить без перезагрузки Загрузить и установить после перезагрузки Обновлено: 35 минут назад Проверить сейчас


jenkins.war Show all


# Jenkins

Загрузка прошла. Остановить дженкинс и запустить заново, обновить страницу и зайти заново

**Jenkins** ▸ **Update Center**

 Вернуться к главной странице


 Настроить Jenkins

 Управление плагинами

## Установка/обновление плагинов

Подготовка

- Checking internet connectivity
- Checking update center connectivity
- Success

Locale  Downloaded Successfully. Will be activated during the next boot

➡ [Вернуться на главную страницу](#)  
(вы сможете использовать установленные плагины прямо сейчас)

➡ Перезапустить Jenkins по окончании установки и отсутствии активных задач


# Jenkins


Настройки Jenkins -> System Configuration


1 2


Please provide an accurate value in Jenkins configuration.

## System Configuration


 **Конфигурация системы**  
Конфигурация глобальных настроек и путей.




 **Управление средами сборки**  
Позволяет добавлять, удалять, контролировать и анализировать среды сборки.



## Security

 **Глобальные настройки безопасности**



g for localhost...

ройка безопасности Jenkins.

# Jenkins

В Locale прописать En -> поставить галочку -> save -> refresh page

☐ Tool Locations

## Locale

Default Language

En



Ignore browser preference and force this language to all users

## Pipeline Speed/Durability Settings

Pipeline Default Speed/Durability Level

None: use pipeline default (MAX\_SURVIVABILITY)

## Usage Statistics

# Jenkins

## Global Tool Configuration

### JDK

JDK installations

Add JDK



Name

jdk1.8.0\_261

JAVA\_HOME

C:\Program Files\Java\jdk1.8.0\_261

☐ Install automatically



Delete JDK

Add JDK

List of JDK installations on this system

### Git

Git installations



Git

Save

Apply

echo \$JAVA\_HOME ---> MAC    echo %JAVA\_HOME% ---> WIN  
/Library/Java/JavaVirtualMachines/jdk1.8.0\_151.jdk/Contents/Home

# Jenkins

## Git

Git installations



**Git**

Name

Default

Path to Git executable

C:\Program Files\Git\bin\git.exe



Install automatically



Delete Git

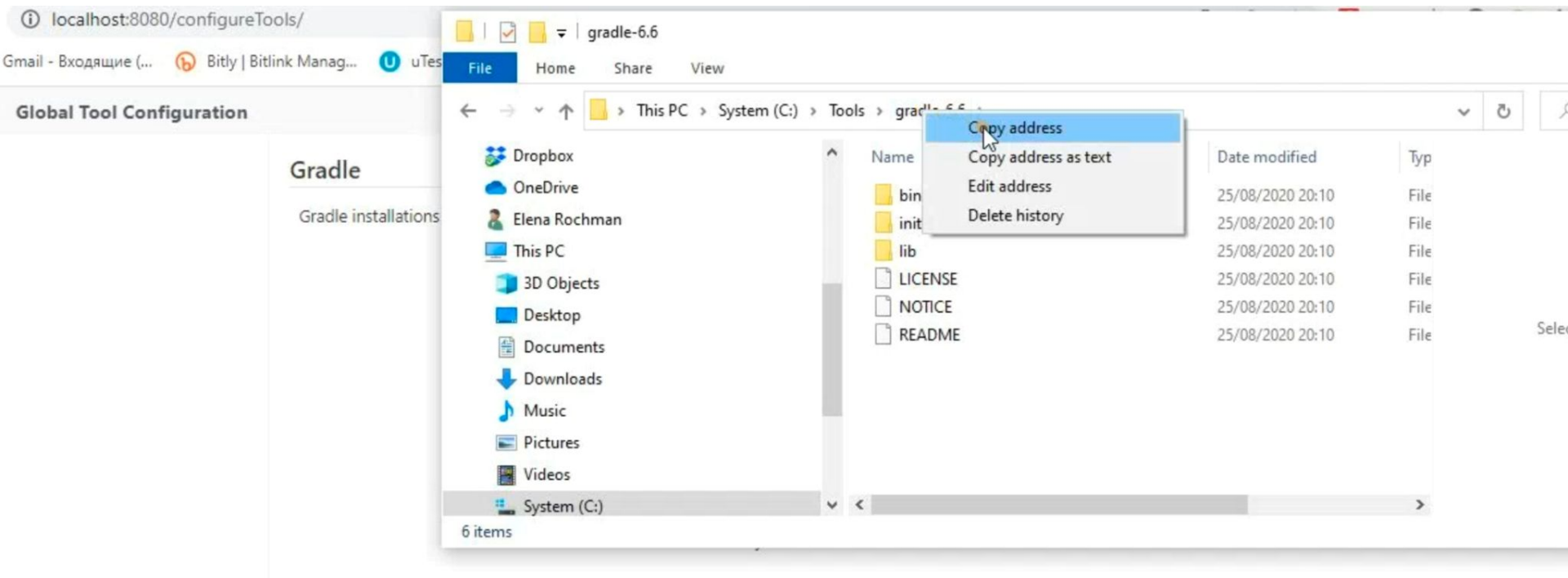
Add Git ▼

Save

Apply

/usr/bin/git -----> FOR MAC IN terminal which git

# Jenkins





# Jenkins

## Gradle

Gradle installations

Add Gradle



Gradle

name

gradle-6.6



GRADLE\_HOME

C:\Tools\gradle-6.6



☐ Install automatically



Delete Gradle

Add Gradle

List of Gradle installations on this system

\*IN FOLDER TOOLS

# Jenkins

General	Source Code Management	Build Triggers	Build Environment	<b>Build</b>	Post-build Actions
---------	------------------------	----------------	-------------------	--------------	--------------------

Gradle Version

gradle-6.6

☐ Use Gradle Wrapper

Tasks

clean testRegr


?

Switches

?

System properties

# Jenkins

 **Jenkins**







3

search

Jenkins ▶

-  New Item
-  People
-  Build History
-  Manage Jenkins
-  My Views
-  Lockable Resources
-  Credentials
-  New View

All +

S	W	Name ↓	Last Success	Last Failure
		<a href="#">TrelloTestJobChrome</a>	3 days 0 hr - <a href="#">#8</a>	3 days 20 hr -
		<a href="#">TrelloTestJobFireFox</a>	N/A	N/A
		<a href="#">without git</a>	N/A	N/A

Icon: [S](#) [M](#) [L](#)

[Legend](#)  [Atom feed for all](#) 

## Build Queue

No builds in the queue.

## Build Executor Status

1 Idle

2 Idle

# Jenkins ( проект без Git)

## Enter an item name

*» Required field*

Укажите имя и тип проекта



### Freestyle project

This is the central feature of Jenkins. Jenkins will build your project, combining any SCM with any build system, and this can be even used for something other than software build.



### Pipeline

Orchestrates long-running activities that can span multiple build agents. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.



### External Job

This type of job allows you to record the execution of a process run outside Jenkins, even on a remote machine. This is designed so that you can use Jenkins as a dashboard of your existing automation system.



### Multi-configuration project

Suitable for projects that need a large number of different configurations, such as testing on multiple environments, platform-specific builds, etc.



### Folder

Creates a container that stores nested items in it. Useful for grouping things together. Unlike view, which is just a filter, a folder creates a separate namespace, so you can have multiple things of the same name as long as they are in different folders.



### Multibranch Pipeline

Creates a set of Pipeline projects according to detected branches in one SCM repository.

# Jenkins ( проект без Git)

NameForYourJob ▶

General

Source Code Management

Build Triggers

**Build Environment**

Build

Post-build Actions

## Build Environment

- ☐ Delete workspace before build starts
- ☐ Abort the build if it's stuck
- ☐ Add timestamps to the Console Output
- ☐ Inspect build log for published Gradle build scans
- ☐ With Ant

## Build

Add build step ▼

Execute Windows batch command

Execute shell

Invoke Ant

Invoke Gradle script

Invoke top-level Maven targets

Run with timeout

Windows

MacOs

Save

Apply

# Jenkins( проект без Git)

## Build

### Execute Windows batch command

Command

```
cd C:\Users\userName\NameForMYPROJECT  
gradlew clean regression
```

Указать свой путь к папке и название task

See [the list of available environment variables](#)

Advanced...

Add build step ▾

Save

Apply

# Jenkins ( проект без Git)

Для запуска в другом браузере, создайте новый проект указав копией какого проекта он будет.

В build для gradlew указать переменную browser -Pbrowser

`gradlew -Pbrowser=firefox clean regression`

Для запуска согласно расписанию, укажите расписание в разделе Triggers/Build periodically, как показано на следующем рисунке.

`H/15 * * * *` (каждые пятнадцать минут)

`* / 1 * * * *` (каждая минута)

# Jenkins ( проект без Git)

General

Source Code Management

**Build Triggers**

Build Environment

Build

Post-build Actions


## Build Triggers

☐ Trigger builds remotely (e.g., from scripts)

☐ Build after other projects are built

☒ Build periodically

Schedule

 **No schedules so will never run**

This field follows the syntax of cron (with minor differences). Specifically, each line consists of 5 fields separated by TAB or whitespace:

MINUTE	HOUR	DOM	MONTH	DOW
MINUTE	Minutes within the hour (0–59)			
HOUR	The hour of the day (0–23)			
DOM	The day of the month (1–31)			
MONTH	The month (1–12)			
DOW	<del>The day of the week (0–7) where 0 and 7 are Sunday.</del>			

To specify multiple values for one field, the following operators are available. In the order of precedence,

- \* specifies all valid values
- M–N specifies a range of values
- M–N/X or \*/X steps by intervals of X through the specified range or whole valid range
- A,B,...,Z enumerates multiple values



# Jenkins ( проект с Git)

## Enter an item name

» Required field

Укажите имя и тип проекта



### Freestyle project

This is the central feature of Jenkins. Jenkins will build your project, combining any SCM with any build system, and this can be even used for something other than software build.



### Pipeline

Orchestrates long-running activities that can span multiple build agents. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.



### External Job

This type of job allows you to record the execution of a process run outside Jenkins, even on a remote machine. This is designed so that you can use Jenkins as a dashboard of your existing automation system.



### Multi-configuration project

Suitable for projects that need a large number of different configurations, such as testing on multiple environments, platform-specific builds, etc.



### Folder

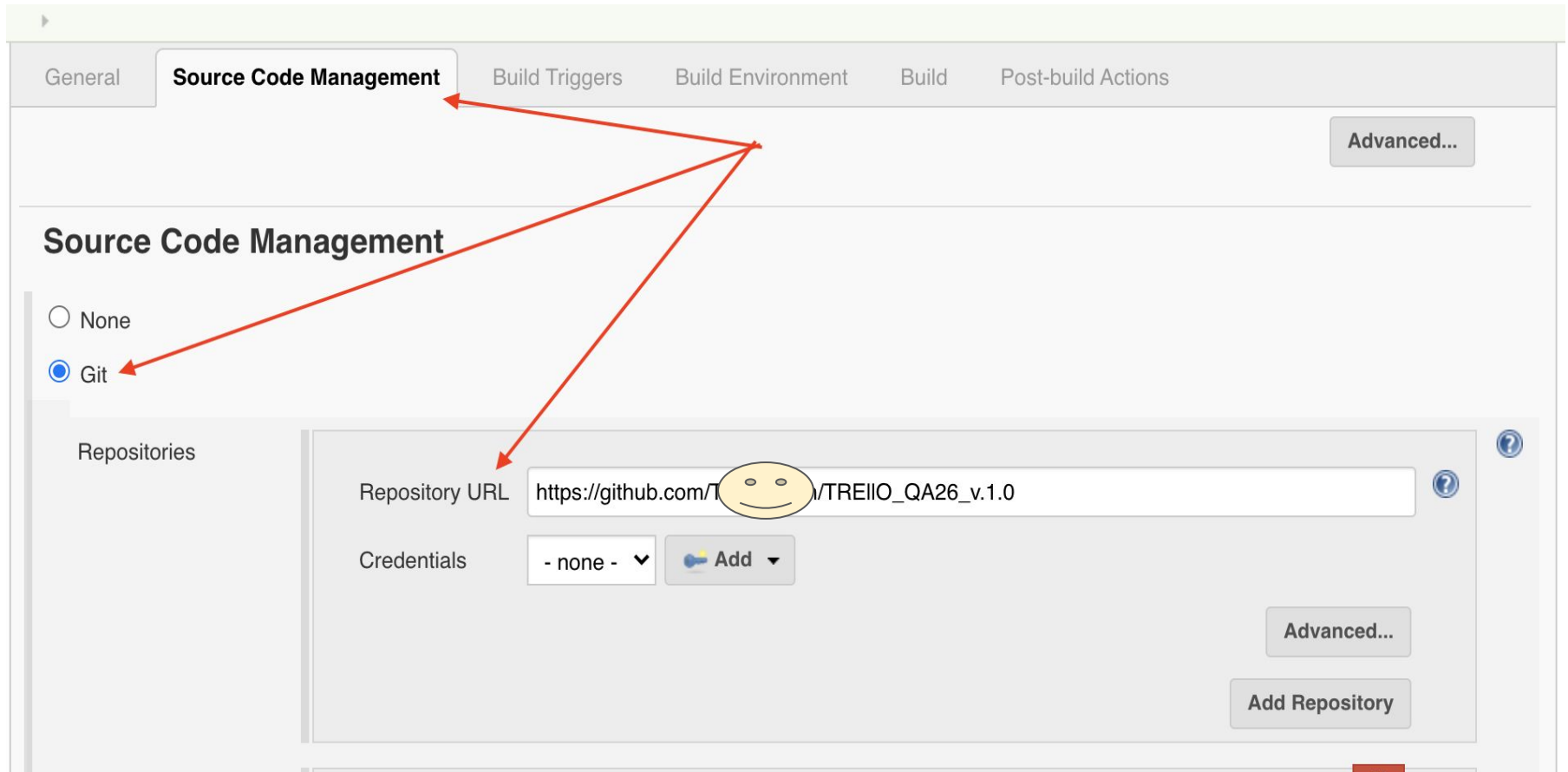
Creates a container that stores nested items in it. Useful for grouping things together. Unlike view, which is just a filter, a folder creates a separate namespace, so you can have multiple things of the same name as long as they are in different folders.



### Multibranch Pipeline

Creates a set of Pipeline projects according to detected branches in one SCM repository.

# Jenkins ( проект с Git)



The screenshot shows the Jenkins configuration interface for a project. The 'Source Code Management' tab is selected. The 'Git' radio button is chosen. The 'Repository URL' field contains the text 'https://github.com/TREIIO\_QA26\_v.1.0'. The 'Credentials' dropdown is set to '- none -'. There are three red arrows: one pointing to the 'Source Code Management' tab, one pointing to the 'Git' radio button, and one pointing to the 'Repository URL' field. A yellow smiley face icon is placed over the 'Repository URL' field. The 'Add Repository' button is visible at the bottom right.

General **Source Code Management** Build Triggers Build Environment Build Post-build Actions

Advanced...

### Source Code Management

☐ None  
☒ Git

Repositories

Repository URL

Credentials

Advanced...

Add Repository

# Jenkins ( проект с Git)

General

Source Code Management

Build Triggers

**Build Environment**

Build

Post-build Actions

## Build Environment

- ☐ Delete workspace before build starts
- ☐ Abort the build if it's stuck
- ☐ Add timestamps to the Console Output
- ☐ Inspect build log for published Gradle build scans
- ☐ With Ant

## Build

Add build step ▼

- Execute Windows batch command
- Execute shell
- Invoke Ant
- Invoke Gradle script**
- Invoke top-level Maven targets
- Run with timeout

Save

Apply

# Jenkins ( проект с Git)

**Build**

**Invoke Gradle script** X ?

☒ Invoke Gradle

Gradle Version  ▼

☐ Use Gradle Wrapper

Tasks  ▼ ?

Advanced...

Add build step ▼

Branch должен соответствовать branch указанному в репозитории на github

**Branches to build** X ?

Branch Specifier (blank for 'any')  ?

Add Branch

**Repository browser**  ▼ ?

# Jenkins ( проект с Git)

В файле gitignore проекта нужно закомментировать запрет на  
push папки build и properties

После сделать новый commit и push

Команды из консоли:

*git status*

*git add .*

*git status*

*git commit -m "change gitignore"*

*Git push origin*

# Jenkins ( проект с Git)

Чтобы указать браузер или другие переменные (через пробел)

## Build

### Invoke Gradle script

☒ Invoke Gradle

Gradle Version

☐ Use Gradle Wrapper

Tasks

(1)



Advanced...

Add build step ▼

# Jenkins ( проект с Git)

Invoke Gradle script

X

?

Invoke Gradle

Gradle Version

gradle

▼

Use Gradle Wrapper

Tasks

clean reg

▼

Switches

-Pbrowser=firefox

▼

System properties

?

?

?

?

?

(2)

# Jenkins ( проект с Git)

Для генерации Post репортов, есть возможность настроить конфигурацию для отчетов в разделе Post-build Actions build/test-results/\*\*/\*.xml

## Post-build Actions

### Publish JUnit test result report

Test report XMLs

build/test-results/\*\*/\*.xml

[Fileset 'includes'](#) setting that specifies the generated raw XML report files, such as 'myproject/target/test-reports/\*.xml'. Basedir of the fileset is [the workspace root](#).


☐ Retain long standard output/error 

Health report amplification factor

1.0 

1% failing tests scores as 99% health. 5% failing tests scores as 95% health

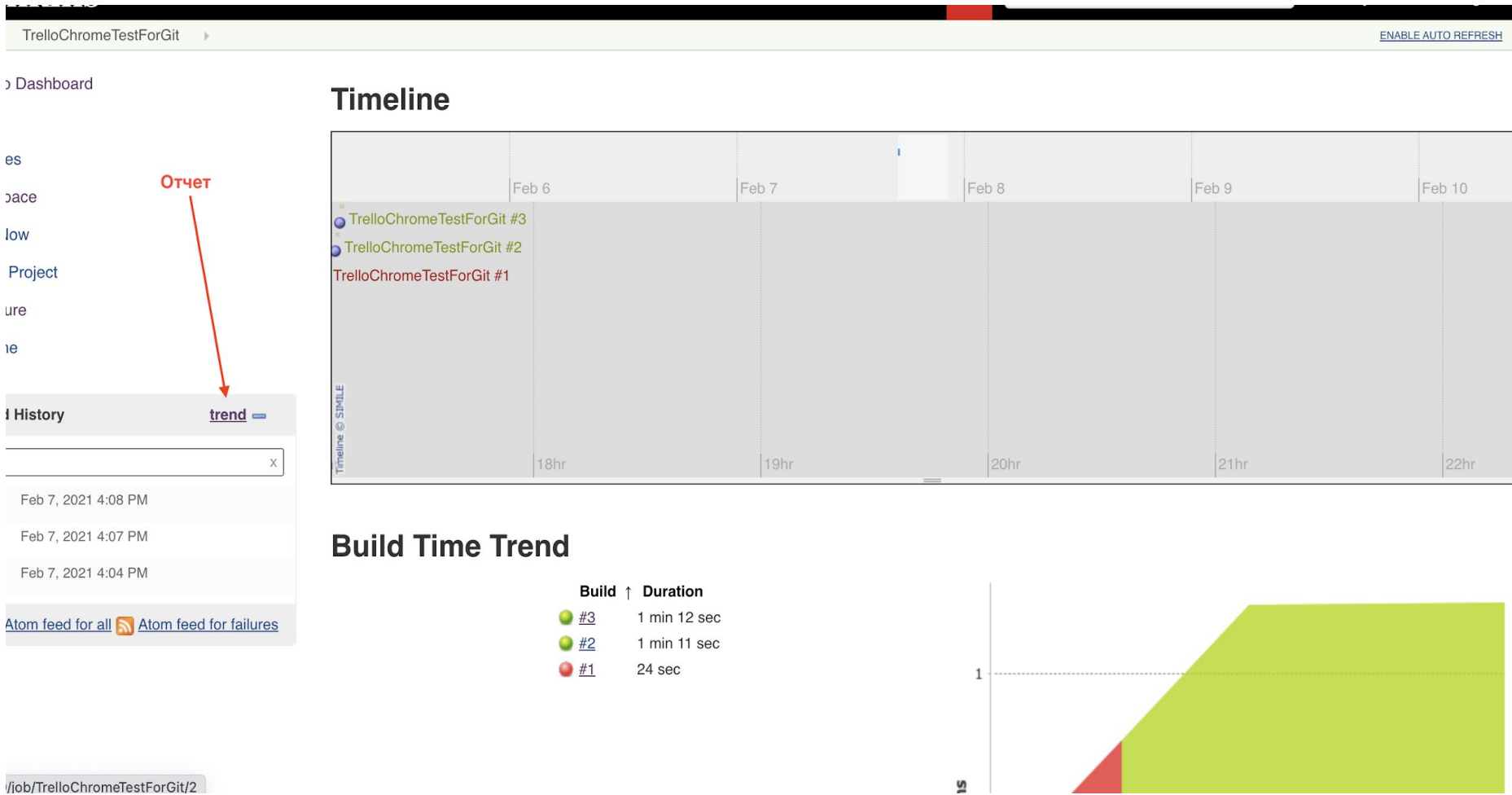
Allow empty results

☐ Do not fail the build on empty test results 

Add post-build action ▼



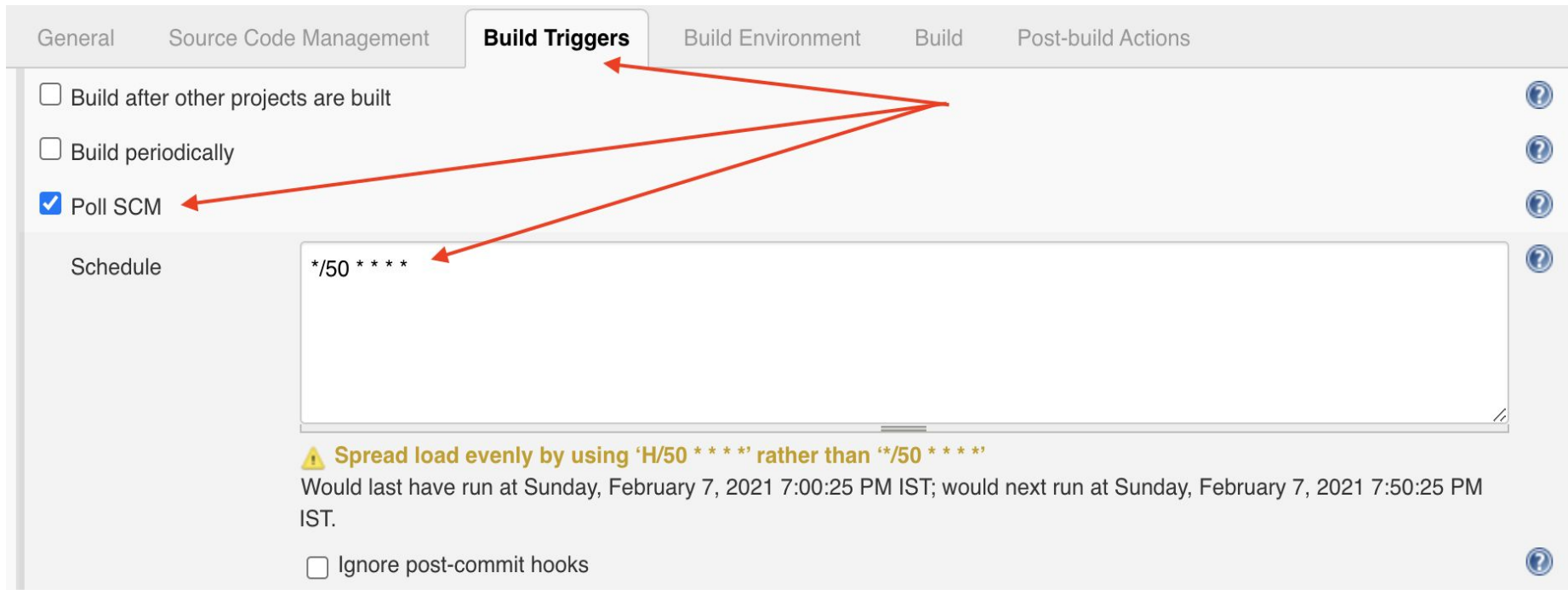
# Jenkins ( проект с Git)



# Jenkins ( проект с Git)

## Настройка triggers Poll SCM

Только после push на удаленный репозиторий, запустится проверка тестов на Jenkins



General Source Code Management **Build Triggers** Build Environment Build Post-build Actions

☐ Build after other projects are built

☐ Build periodically

☒ Poll SCM

Schedule `*/*50 * * * *`

**⚠ Spread load evenly by using 'H/50 \* \* \* \*' rather than '\*/\*50 \* \* \* \*'**

Would last have run at Sunday, February 7, 2021 7:00:25 PM IST; would next run at Sunday, February 7, 2021 7:50:25 PM IST.

☐ Ignore post-commit hooks

# Jenkins ( проект с Git)

Запуск в порядке очереди:

The screenshot shows the Jenkins configuration interface for a project. The 'Build Triggers' tab is selected. Red arrows highlight the following settings:

- The 'Build Triggers' tab in the top navigation bar.
- The 'Build after other projects are built' checkbox, which is checked.
- The 'Projects to watch' text input field, containing the text 'TrelloChromeTestForGit,'.
- The 'Trigger only if build is stable' radio button, which is selected.

The configuration page includes the following sections and options:

- Build Triggers**
  - ☐ Trigger builds remotely (e.g., from scripts)
  - ☒ Build after other projects are built
  - Projects to watch: TrelloChromeTestForGit,
  - ☒ Trigger only if build is stable
  - ☐ Trigger even if the build is unstable
  - ☐ Trigger even if the build fails
- ☐ Build periodically
- ☐ Poll SCM

# Jenkins

In the ***Build Periodically*** option, we need to give a proper format of time during which we need to build our job. In the below image, we can see the complete format:

The diagram illustrates the standard cron job syntax format. It consists of five asterisks representing the fields: minute, hour, day of month, month, and day of week. Each field is labeled with its range and meaning. The day of week field includes a note that 7 is also Sunday on some systems. The final part of the line is the schedule command to execute.

```
minute (0 - 59)  
hour (0 - 23)  
day of month (1 - 31)  
month (1 - 12)  
day of week (0 - 6) (Sunday to Saturday;  
7 is also Sunday on some systems)  
* * * * * schedule command to execute
```

# Jenkins

MINUTE HOUR DOM MONTH DOW

MINUTE	Minutes within the hour (0–59)
HOUR	The hour of the day (0–23)
DOM	The day of the month (1–31)
MONTH	The month (1–12)
DOW	The day of the week (0–7) where 0 and 7 are Sunday.

To specify multiple values for one field, the following operators are available. In the order of precedence,

- \* specifies all valid values
- M–N specifies a range of values
- M–N/X or \*/X steps by intervals of X through the specified range or whole valid range
- A,B, . . . ,Z enumerates multiple values

# Jenkins

```
# каждые пятнадцать минут (возможно, в: 07,: 22,: 37,: 52)
```

```
H / 15 * * * *
```

```
D:
```

```
cd \Rep\PhoneBook1
```

```
gradlew clean test
```

# Jenkins

## Learn center

<https://www.jenkins.io/doc/book/installing/windows/>

Plugin [Green Balls](#)