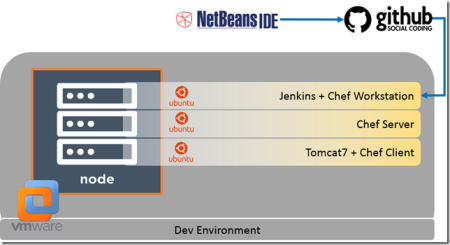
Hi guys,

Today, I will show you, how to configure jenkins pipeline and deploy web application via chef so I will describe you about the components in the picture below

[](https://selfieblue.files.wordpress.com/2015/10/image50.png)

I created 3 virtual machines by using vmware workstation as you see above and they are separated functionalities from each others but all of them are running with

**Ubuntu 15.04 x86\_64**and I create web application project by using **NetBean IDE** and after I built my project, I commited this project (webapp1) to **GitHub** Repository

**Virtual Machines Info**

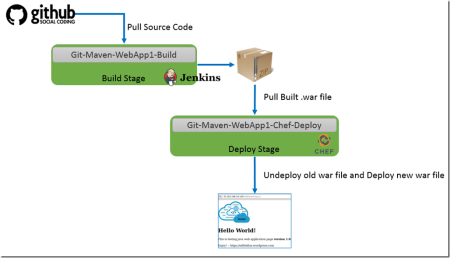
**VM#1** Hostname : jenkins1          (vCPU 2 Cores, vHDD 40GB, vRAM 2 GB) OS Users (jenkinsadmin, jenkins)  
**VM#2** Hostname : chefserver       (vCPU 2 Cores, vHDD 40GB, vRAM 3 GB) OS Users (jenkinsadmin)  
**VM#3** Hostname : tomcat7-dev    (vCPU 1 Cores, vHDD 40GB, vRAM 1 GB) OS Users (jenkinsadmin, tomcat7)

(For any source code for testing, if you want please e-mail to me at [selfieblue@gmail.com](mailto:selfieblue@gmail.com))

Before we start to learn how to configure Jenkins pipline and deploy web application by Chef, I’m not include the section of preparing Chef Server,

Chef Workstation and Chef client in this topic but anyway you can find these topic in my blog at [https://selfieblue.wordpress.com](https://selfieblue.wordpress.com/)

**Process Overview**

[](https://selfieblue.files.wordpress.com/2015/10/image51.png)

1) Jenkins is responsible for building the archive artifact (.war file) and then transfer .war file to Tomcat Server

2) Chef is responsible for undeploying running web application and then deploy new web application

**Start Here**

**1) Preparing Tomcat7 and Chef Client**

    Open terminal and then login to tomcat7-dev (Tomcat7 + Chef Client)

     1.1) Install and Configure Tomcat7  
          $ sudo vi /etc/hosts  
          add 3 hostnames  
          192.168.10.138  jenkins1  
          192.168.10.139  chefserver  
          192.168.10.140  tomcat7-dev  
            
          $ sudo vi /etc/sudoers  
          Configure nopassword promt for user jenkinsadmin by add this line to file /etc/sudoers  
          jenkinsadmin ALL=(ALL:ALL) NOPASSWD:ALL  
            
          $ sudo apt-get install openjdk-7-jdk openjdk-7-jre  
          $ sudo cp -p /usr/lib/jvm/java-7-openjdk-amd64/lib/tools.jar /usr/lib/jvm/java-7-openjdk-amd64/jre/lib/  
          $ sudo apt-get install tomcat7 tomcat7-docs tomcat7-admin tomcat7-examples  
          $ sudo vi /etc/default/tomcat7  
          Add JAVA\_HOME to this file /etc/default/tomcat7  
          JAVA\_HOME=**/usr/lib/jvm/java-7-openjdk-amd64      => Find out your exactly path of jdk**  
            
          $ sudo vi /var/lib/tomcat7/conf/tomcat-users.xml  
          Add user admin to this file /var/lib/tomcat7/conf/tomcat-users.xml  
          <tomcat-users>  
              <role rolename=”manager-gui”/>  
              <user username=”admin” password=”password” roles=”manager-gui,admin-gui,manager-script”/>  
          </tomcat-users>  
          \*\*\*Be carefull by default this tag will be commented so remove comment marks to enable configuration\*\*\*  
            
          $ sudo mkdir /warfiles  
          $ sudo chmod 777 /warfiles  
            
          Generate SSH Key (For user jenkinsadmin)  
          $ cd $HOME  
          $ ssh-keygen -t rsa  
            
          Restart Tomcat7 Service  
          $ sudo service tomcat7 restart  
            
          \*\*\*Note : List Tomcat7 Management console  
          [http://server\_IP\_address:8080/manager/html](http://server_ip_address:8080/manager/html)  
          [http://server\_IP\_address:8080/host-manager/html/](http://server_ip_address:8080/host-manager/html/)

    1.2) Install Chef Client  
          Open terminal and login to jenkins1   
          $ cd /chef-repo-dev  
          $ sudo knife bootstrap tomcat7-dev -x jenkinsadmin -P admin123 -N node-tomcat7-dev –sudo

**2) Create Chef Cookbook and Upload Cookbook to Chef Server**

    Open terminal and login to jenkins1 (Jekins + Chef Workstation) and navigate to /chef-repo-dev directory and run command to create cookbook

    $ cd /chef-repo-dev/  
    $ knife cookbook create cookbook-webapp1

    $ vi /chef-repo-dev/cookbooks/cookbook-webapp1/recipes/default.rb

  Add content below to default.rb

   execute ‘StopOldWar’ do  
        command ‘wget –http-user=admin –http-password=password “[http://tomcat7-dev:8080/manager/text/stop?path=/webapp1″](http://tomcat7-dev:8080/manager/text/stop?path=/webapp1%22) -O -‘  
        action :run  
   end

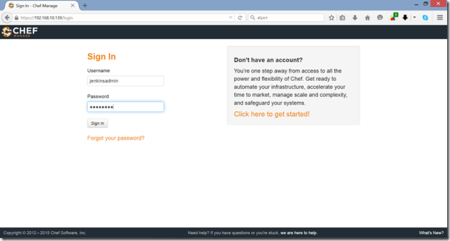
   execute ‘UnDeployOldWar’ do  
       command ‘wget –http-user=admin –http-password=password “[http://tomcat7-dev:8080/manager/text/undeploy?path=/webapp1″](http://tomcat7-dev:8080/manager/text/undeploy?path=/webapp1%22) -O -‘  
       action :run  
   end

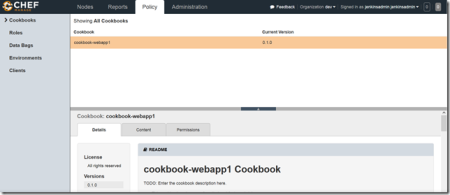
   execute ‘DeployNewWar’ do  
       command ‘wget –http-user=admin –http-password=password “[http://tomcat7-dev:8080/manager/text/deploy?war=file:/warfiles/webapp1.war&path=/webapp1″](http://tomcat7-dev:8080/manager/text/deploy?war=file:/warfiles/webapp1.war&path=/webapp1%22) -O -‘  
       action :run  
   end

   And then save file and exit, so next upload this cookbook to the Chef server by run command

   $ cd /chef-repo-dev/  
   $ knife cookbook upload cookbook-webapp1  
   $ knife node run\_list add node-tomcat7-dev “recipe[cookbook-webapp1]”

**\*\*\*\*You can verify cookbook was deployed to Chef Server\*\*\*\***

[](https://selfieblue.files.wordpress.com/2015/10/image52.png)

[](https://selfieblue.files.wordpress.com/2015/10/image53.png)

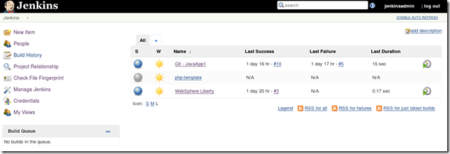
**3) Create and Configure Jenkins Pipeline to Automate Deploy Web Application to Tomcat7**

$ sudo su – jenkins  
$ cd .ssh  
$ ssh-copy-id jenkinsadmin@tomcat7-dev

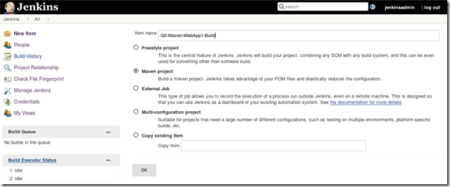
           Open Web Browser and navigate to [http://jenkins](http://jenkins/) and then login

[](https://selfieblue.files.wordpress.com/2015/10/image54.png)

           On the left panel, click **New Item**

[](https://selfieblue.files.wordpress.com/2015/10/image55.png)

           Fill in new project name : **Git-Maven-WebApp1-Build** and then select **Maven Project** and click **OK**

[](https://selfieblue.files.wordpress.com/2015/10/image56.png)

           Fill in **Git URL** in **Source Code Management** section

[](https://selfieblue.files.wordpress.com/2015/10/image57.png)

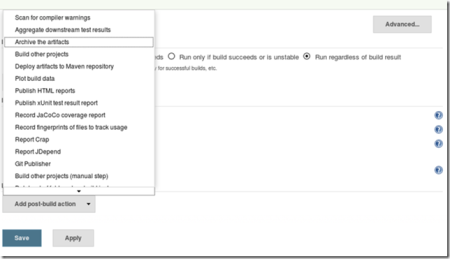
           Scroll down to **Build** section and fill in Goals and option : **clean install**

[](https://selfieblue.files.wordpress.com/2015/10/image58.png)

          Scroll down to **Post-build Actions** section

[](https://selfieblue.files.wordpress.com/2015/10/image59.png)

         Select **Archive the artifacts**

[](https://selfieblue.files.wordpress.com/2015/10/image60.png)

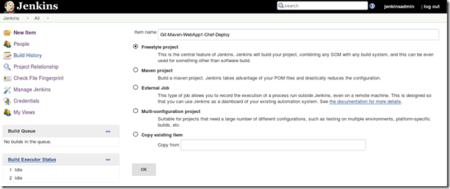
        Fill in your war file name with this pattern \*\*/xxxxxx.war

[](https://selfieblue.files.wordpress.com/2015/10/image61.png)

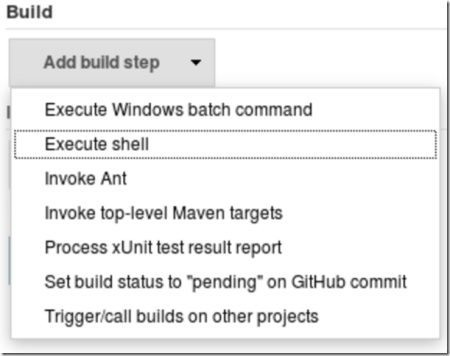
       And then click **Apply** and **Save**

       Next create new project

       Fill in project name : **Git-Maven-WebApp1-Chef-Deploy** and select **Fresstyle project** and click **OK**

[](https://selfieblue.files.wordpress.com/2015/10/image62.png)

      Scroll down to **Build**section and select **Execute shell**

[](https://selfieblue.files.wordpress.com/2015/10/image63.png)

     Fill in commands

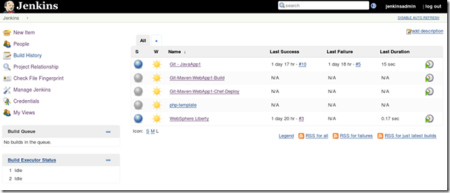
**ssh jenkinsadmin@tomcat7-dev ‘rm -rf /warfiles/webapp1.war’;\  
     scp /var/lib/jenkins/jobs/Git-Maven-WebApp1-Build/lastSuccessful/archive/target/\*.war jenkinsadmin@tomcat7-dev:/warfiles/webapp1.war; \  
     ssh jenkinsadmin@tomcat7-dev ‘sudo chef-client’;**

[](https://selfieblue.files.wordpress.com/2015/10/image64.png)

    And click **Apply** and **Save**

**4) Building Pipeline**

    Add more **Post-build Actions** to **Git-Maven-WebApp1-Build**

[](https://selfieblue.files.wordpress.com/2015/10/image65.png)

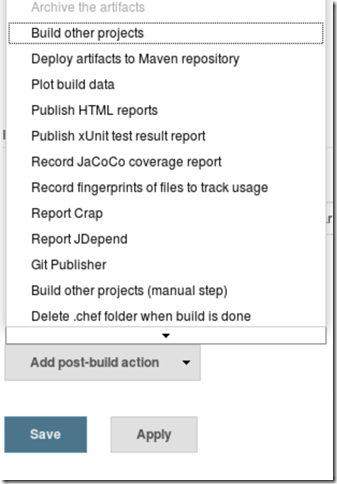
  Configure **Git-Maven-WebApp1-Build**

[](https://selfieblue.files.wordpress.com/2015/10/image66.png)

Scroll down to **Post-build Actions**

[](https://selfieblue.files.wordpress.com/2015/10/image67.png)

Select **Build other projects**

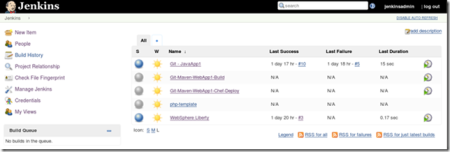
[](https://selfieblue.files.wordpress.com/2015/10/image68.png)

Fill in Project to build : **Git-Maven-WebApp1-Chef-Deploy**

[](https://selfieblue.files.wordpress.com/2015/10/image69.png)

And then click **Apply** and **Save**

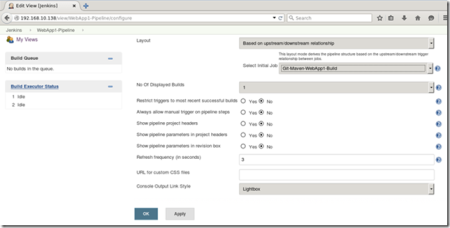
Create new pipeline, click **+**at the top of project list

[](https://selfieblue.files.wordpress.com/2015/10/image70.png)

Fill on View Name : **WebApp1-Pipeline** and click **OK**

[](https://selfieblue.files.wordpress.com/2015/10/image71.png)

Select Initial Job : **Git-Maven-WebApp1-Build**and click**OK**

[](https://selfieblue.files.wordpress.com/2015/10/image72.png)

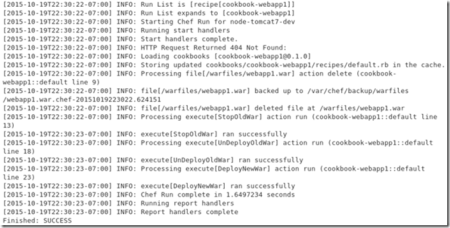
Start First Buid by click **Run**and wait until process completed

[](https://selfieblue.files.wordpress.com/2015/10/image73.png)

[](https://selfieblue.files.wordpress.com/2015/10/image74.png)

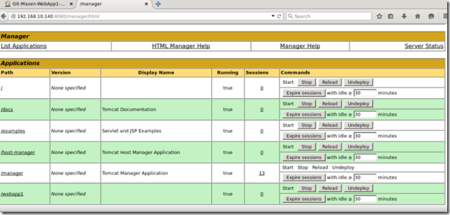
[](https://selfieblue.files.wordpress.com/2015/10/image75.png)

After process built successfully, you can review log file for chef in **Git-Maven-WebApp1-Chef-Deploy**

[](https://selfieblue.files.wordpress.com/2015/10/image76.png)

**Verify installation of new web application**

Open Web Browser and Navigate to <http://tomcat7-dev:8080/manager/html>, you will see /webapp1 was deployed to tomcat7 server

[](https://selfieblue.files.wordpress.com/2015/10/image77.png)

**Verify webapp1 can work well**

Open Web Browser and Navigate to <http://tomcat7-dev:8080/webapp1>

[](https://selfieblue.files.wordpress.com/2015/10/image78.png)

That is, enjoy!

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