**CONFIGURATION MANAGEMENT TOOL :**

>> Configuration Management is nothing but we can deploy on multiple servers.

>>suppose you have 10 servers now if you want to create user in 10 servers you will login into each server and you create.otherwise we will write one script and execute in 100 or 10 servers like this also we can do.

**>> suppose if you have 100 servers or 1000 server now if you want to install GIT in 1000 servers how will you install ?**

-----> we can login to each server and install but it takes lot of time.

>>now my requirement is i need to install git in 1000 servers within 10 minutes ?

so this purpose we are using configuration management tool , by using CM tool we can install git or we can deploy packages in multiple servers.

**Now my requirement is i need to install git in 1000 servers within 10 minutes ?**

here we are using CHEF as a configuration management tool

>> CHEF is a hub between Workstation and CHEF clients

>>if i want to install git in 1000 servers then i have to write ruby script in configuration management tool.

**RUBY :**

>> it will be easy and no need to write lot of code and it will be like simple english.

**WORKSTATION:**

>>WORKSTATION is nothing but where your developing writing the source code like laptop

>>here we will develope code the and upload into CHEF-server , CHEF-server is a hub between WORKSTATION AND 1000 SERVERS.

**COOKBOOK :**

COOKBOOK is nothing but number of recepies ,

**RECEPIE :**

---->piece of code , whatever the task or code we will write here that we will upload into CHEF-server after that we will asign that code into client servers. suppose if you want for 100 servers then if you add 100 servers in runlist automatically code will be added into 100 servers.

not only user and git anything we can do like user creation and deploying packages and installing applications etc.

>>client servers is nothing but target machines.

>>if we get any bugs we can identify easily in CHEF-SERVER

**CHEF WORKFLOW :**

here we have three parts like WORKSTATION , CHEF-SERVER , CLIENT SERVERS

**SERVER :**

SERVER is nothing but configuration data it will work as a repository between workstation and servers.

>> here we will develope the code and upload into chef server ,from chef server to for how many servers we want we will add in runlist then automatically it will be execute.

>>we will install developement kit (dk) and we will write cookbooks in Worksation only

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>>In CHEF we are using only ruby script we can use in JSON format ,other scripts we will not use here like python , perl,

>>Once we written cookbook in Workstation then we will upload that into chef-server

**CHEF SERVER:**

>> we can create posted chef freely

login into **manage.chef.io** and we can create or we can configure chef-server (192.168.33.11)

to create organization directly login **into chef.manage.io**

>>take base server as a workstation like windows or ubuntu or centos ( 192.168.33.10 )

>>take linux operating system as a client server ( 192.168.33.12)

**>>Suppose we have multiple client servers like we have 100 servers in that 100 servers 10 servers are down and offline some network problems got ,**

if i add cookbook in runlist it will add into the client-servers which are there in active , it will not connect with the 10 servers which are in issues once that issues are resolved then automatically that client servers will be add to the chef server and execute the cookbook and software.

**OHAI :**

We have one option is that is OHAI what it wil do is ,

>>it will be processing information from chef-server to client-server and from client-server to chef-server

>>through OHAI client-servers will be connecting to the chef server

**INSTALLATION :**

**>>in workstation we have to install dovelopement kit ,**

>>in chef-server we have to install chef-server , here we are using posted chef so no need to install chef-server

>>in client-servers we have to install client-server

**Now how to configure workstation into chef-server**

--> whenever we create the server in that server stater-kit will be there and knife.rp file and one pem file will be there which is related to server.

--> stater-kit will be there in chef-server that stater-kit we need to download and extract

In that **STATER-KIT , pem file and .chef file and chef organization name, server url and server password** everything will be there

>>this chef-server we have to download where we installed developement kit once we download we will enter into specific path and we can write cookbooks , roles ,recepie

>>through STATER-KIT we are connecting worstation to chef-server

WORKSTATION -------> CHEF-SERVER ---------> CHEF-CLIENTS

>>Suppose i have 100 client-servers now i want to install client-server in 100 servers ,no need to login into each server and install ,

Once we created chef-server then we have to communicate chef-server into client servers so that what i will do in my workstation only if i hit a **boostrap command** it will go to client-server install package

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**HOW TO CRETAE CHEF-SERVER :**

login to chef-manage.io and create username and password here,

>>in chef-server we can create number of organizations.

>>once we create organization we will enter into organization there you can see the option like **Download stater-kit**

**NODES :**

>>in chef-server you can see the option like node at the top side , Node is nothing but here it will dispaly client-servers

**REPORTS :**

>>REPORT is nothing but what you have executed how much got successed and how much got failed this and all it will display in graphically.

>>i downloaded stater-kit Now i have to download and install developement kit

here download developement kit manually like go to google -->dk dowload-->select correct one and open with double click

>>install developement kit and open dk and go to the path where you extracted stater-kit file for that location you have to go

path is , F:\devops soft\chef-repo>**knife boostrap 192.168.33.10 -x root -P root123 -N node1**

**KNIFE: to give connection between workstation and chef-server we are using knife.**

**knife boostrap (client-server ip address) -x (user-name) -P password -N (nodename)**

>>here whatever the node name you will give based on that name client-server information stored in chef-server.

example :

**knife boostrap 192.168.33.10 -x root -P root123 -N node1**

>>if we hit boostrap command here that package will be installed in client server and information will be stored in the chef-server

now got client server and hit a command **$chef client**

**HOW TO CONNECT MULTIPLE SERVERS :**

the command is , in the script we have to pass boostrap command like this ,

knife boostrap 192.168.33.11 -x root -P root123 -N node1

knife boostrap 192.168.33.11 -x root -P root123 -N node2

knife boostrap 192.168.33.11 -x root -P root123 -N node3

knife boostrap 192.168.33.11 -x root -P root123 -N node4

here, 192.168.33.11 is a chf-server and node1 and node2 are client servers.

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workstation ----> chef-server -----> client-server

**>>WORKSTATION** : in workstation we will install developement kit ,

we have to download from google and install in windows or linux

[www.chefdownloads.com](http://www.chefdownloads.com/)

click on chef downloads ----> choose developement kit for windows or linux -----> install and ----> open

**>>CHEF-SERVER :**

to create chef-server we will login into **manage.chef.io** and here we will create username and password for chef-server , next step is we have to create ORGANIZATION and we have to download stater-kit and we will extract that stater-kit

username: manjutarak2668@gmail.com or manjutarak2668

password : manjutarak2668

>>we can create no of stater-kit from one organization

**>>CLIENT-SERVER :** client-server is nothing centos or ubuntu now i am using centos 1992.168.33.12 mahine.

>>After adding cookbook in runlist go to client-server and hit below command ,

in client server hit a command **, $chef-client**