8/24 – nio, san jose

1. Talk a little about the Jenkins?

We will have different jobs in jenkins like for snapshot jobs, release jobs, deployment jobs. So snapshot job is the one which is used to build like whenever a check in happens in the git repository it will poll scm for latest updates then it will build the artifacts using maven, run the code quality and publish the artifacts to nexus repository. Then for release we have release job which will convert snapshot build into release builds then deploy artifacts into release repository in nexus. Once this part is done we will go to the deployment job where we provide the release repository information like what exactly the version number is so based on that it will do the deployment.

1. What are doing with Jenkins, you are creating pipelines, or jobs, running jobs?

In my current project I have to install and configure jenkins from the scratch, created master slave configurations and also several jobs like snapshot jobs e.t.c, I have also installed many plugins and enabled security where we have project based, role base and matrix based strategies (installed role based authorization plugin) where I can create users, assigning roles.

1. Have you define your jobs or maintaining the server or delivering the jobs or build engineer?

In jenkins if we are going to configure a job the first thing I would do is that I will analyze the dependencies like if one project is dependent on another project I would manage the dependencies by creating upstream and downstream projects and I would configure those as if the upstream projects build is success then automatically downstream project would start building (i.e. my downstream is dependent on upstream).

Dependencies can be in both build and deployment stage. So while building a project then the dependencies are managed by maven dependency section, where as jenkins cannot handle all the dependencies for deployment we have to handle everything through scripting so that jenkins will kick off those scripts.

1. What have you done with aws?

I am much familiar with AWS, I have migrated different applications to AWS. I have used many AWS services like EC2 instances, ELB, EBS, cloud watch, CFT. And related to networking I am familiar with subnets, routing tables, IGW’s, VPC.

1. Security groups are stateful or not?

Security groups are stateful. It will return traffic automatically allowed regardless of any rules.

1. Are you familiar with iam roles?

Coming to IAM i am pretty much familiar with creating groups, users and restricting access to others) also have experience with AWS in creating IAM roles. We can create iam roles in aws console

We can create in aws cli,

We can create in the clouf formation template also. Iam: role, hostkeys: aws::iam user. We can create the root instance profile, and put different policies.

1. Did you generate the iam roles or taken fron somewhere else?

I created iam roles as per the requirement like name the role and attach a policy to it.

1. How to restrict a resource based vpc, its possible to create a particular role that access to particular vpc?

You can use AWS Identity and Access Management (IAM) to allow other users, services, and applications to use your Amazon VPC resources without sharing your security credentials. You can choose to allow full use or limited use of your resources by granting users permission to use specific Amazon EC2 API actions. Some API actions support resource-level permissions, which allow you to control the specific resources that users can create or modify.

1. Athena?

Amazon Athena is an interactive query service that makes it easy to analyze data in Amazon S3 using standard SQL. Athena is serverless, so there is no infrastructure to setup or manage, and you can start analyzing data immediately. You don’t even need to load your data into Athena, it works directly with data stored in S3. To get started, just log into the Athena Management Console, define your schema, and start querying. Amazon Athena uses Presto with full standard SQL support and works with a variety of standard data formats, including CSV, JSON, ORC, Apache Parquet and Avro. While Amazon Athena is ideal for quick, ad-hoc querying and integrates with Amazon QuickSight for easy visualization, it can also handle complex analysis, including large joins, window functions, and arrays.

1. What are doing with chef?
2. I have configured work stations, installed chef-client and managed different nodes, its like a client-server model we are using. Where I have written multiple cookbooks to do infrastructure as code. The chef cookbooks will work like if the cookbook is available in the supermarket then I will try to use it and on top that we will customize the cookbook as per the requirement. The way it will work is like download cookbook from chef-server and customize it and push to github, I have Jenkins job where when I push the cookbook to the git hub then the job will run and it will analyze and test the cookbook like foodcritic, rubocop, testkitchen, it will do all kind of testing, code quality, testing the cookbook whether it is working or not, as per our expectations, everything is good then we upload the cookbook to the chef-server.
3. In chef, template resource for httpd, if you update the template then how to restart the httpd?

Using notify option

1. Chef is a two stage convergence process?

Convergence, execution

1. Myvariable=1

Template resource

Myvariable=2 #after template resource

What is the value of myvariable after template resource?

1. Can you talk about any cookbook that are familiar with?

Well I have written cookbooks and also integrated it with chef:- the cookbook which I have written is creating a jenkins server and I would like to run that jenkins server on different ports. Along with that I wanted to install and configure different plugins; so I got the cookbook from chef supermarket and changed it according to my requirements and also I have written one more recipe to install and configure plugins. It was complex when I have uploaded to chef server and after that I would like to integrate with AWS using cloud formation template and install jenkins on AWS nodes. For that, one challenge is that when ever I write the cloud formation template I need to invoke the jenkins cookbook which I have written right ?so for that I need to provide my chef server details in the cloud formation template and also I need to invoke the validator pem file so that AWS node gets communicates with chef server and provide some other details in CFT so that automatically one instance gets created in AWS and it would have all the configurations which I have provided in CFT. I have also written cookbook for installing and configuring weblogic. It is the most complex one because it have lots of pieces to be mentioned like creating domain, clusters, node managers, and also checking ports e.tc. Web logic also have different other components which I need to put it in the cookbook. It is the most complex one which I have faced.

1. Are you familiar with python, shell?
2. How familiar with linux?
3. We have a process, the process is writing content to a file, the file open the file discritor and writing to the file, the file is exceeding the disk space what you have, someone dicided to loginto the machine and delete it, then it will clean the disk space or not?

Does not clean the process, since the process is running

8/25 – centizen, nike

1. How to run all recipes in the cookbook without calling each one individually?

No, we cant run

1. How can you record session or commands?

Using script

Script > file.txt

1. How we can check the file is corrupted or not in the remote server?

you can always run md5sum <filename> on both systems to make sure they're the same.

cd folder

find -name "\*.bz2" > bzipfiles

for i in `cat bzipfiles`

do

bzip2 -t $i

if [ $? == '0']

then

echo "$i file is not corrupted"

else

echo "$i file is corrupted"

echo "$i" >> corruptedfile\_list

fi

done

1. How we can check whether the file is transferred or not into the remote server?

echo 'starting transfer'

scp FILE USER@DST\_SERVER:DST\_PATH

OUT=$?

if [ $OUT = 0 ]; then

echo 'transfer successful'

touch successful

scp successful USER@DST\_SERVER:DST\_PATH

else

echo 'transfer faild'

fi

8/29 – Nextsap / Apple

1. What is your role?
2. Why are implemeting from chef to ansible?

Minimal in nature

Management systems should not impose additional dependencies on the environment

Consistent

**Secure**: because it openssh which more secure than any other protocol

Highly reliable

Low learning curve

**Idempotent:** if you execute the same playbook n number of times it will not change the state of the machine.

1. Why chef is flexible with large infrastructure?
2. Why ansible struggle when it comes to large infrastructure?
3. What is the main architectural difference between chef and ansible?

 Chef in that it does not rely on a client-server model. Rather, Ansible is agentless, requiring nothing on target host systems other than ssh and Python.

1. What do you mean by agentless in ansible?

Ansible is agent-less, that means no need of any agent installation on remote nodes, so it means there are no any background daemons or programs are executing for Ansible, when it’s not managing any nodes

1. Take a scenario, we have 500 nodes that connected to ansible central server, there is a playbook which take an hr to complete, how much time do you think it will take for the 500 nodes?

Run parallel

1. What is the difference between the push and pull architecture?
2. Write a playbook first ping the server and copy the files to the remote server and restart the server?

hosts: webservers

tasks:

- name: Installs nginx web server

apt: pkg=nginx state=installed update\_cache=true

notify:

- start nginx

handlers:

- name: start nginx

service: name=nginx state=started

1. How do you handle errors or exceptionals gracefully in ansible playbook?

In debug module it will tell I am doing this and that, but it will not something broke down.

Generally playbooks will stop executing any more steps on a host that has a task fail. Sometimes, though, you want to continue on. To do so, write a task that looks like this:

- name: this will not be counted as a failure

command: /bin/false

ignore\_errors: yes

we added a debug strategy. This strategy enables you to invoke a debugger when a task has failed. You have access to all of the features of the debugger in the context of the failed task. You can then, for example, check or set the value of variables, update module arguments, and re-run the failed task with the new variables and arguments to help resolve the cause of the failure.

To use the debug strategy, change the strategy attribute like this:

- hosts: test

strategy: debug

tasks:

1. How do you use blocks?
2. L=[1,2,3,4,5]

L[2:3] = [3]

L[2:-3]=[]

9/13 infosys- apple

1. Tell me about yourself?
2. Current project?
3. Do you also create and maintain branches?
4. What is git rebase?
5. Different reset options like soft, hard?
6. Any kind of performance issues you have faced?
7. Difference between tcp and udp?
8. Have you aware of any problem with to many open files in server log and unable to connect to it?
9. There is a http client and server when it is browsing out it is showing timeing out?

I have check the default check,

Any kind of logs that help?

Var/log/

Catalina.log

Var/html/logs

Port issues

Any disk space

1. ACL’s?
2. Why do we use acl’s ?
3. If I setup a acl between two hosts, how do you check?
4. What is tcp?
5. Have you used the iostat or vmstat commands?
6. What is horizontal and vertical scaling?
7. How do you set the permissions to files in linux system?
8. Database normalization?
9. What is segmentation fault?
10. Same as the bus errors, the segmentation fault?
11. What is clustering?

9/14 infosys – apple

1. Tell me about your current job?
2. Do you build experience with maven and do you have any troubleshoot experience and with java based apps?
3. Explain any troubleshoot issues you have faced in production?
4. All the servers are aws or you work on other physical servers?
5. Do you have any experience with other load balancers too?
6. Do you know basic shell scripting commands?
7. System parameter like free memory, diskspace, cpu utilization?
8. What about the basic networking troubleshoot commands?
9. Nice maven experience, they are looking for build engineer?

Little bit of java troubleshooting and maven

9/15/2017 – APPLE - F2F

1. What is deployment validation?
2. How will you check whether the deployment is done correctly or not?

Even we have good and reliable Acceptance/Functional tests in UAT environment but we just not sure if the deployment process has been done properly and if everything works on production exactly as UAT. So the only way we can verify this is through some tests on production environment.

Some simple smoke tests could be helpful to identify connectivity problems.

DEV: Unit tests, some behavioural tests

FAT: Integration tests, regression tests, installation tests

UAT: Test of deployment to LIVE (possibly with faux data)

LIVE: Common functionality, possible environment testing

**DEV (Development) environment**

The focus is on unit tests to test the new functionality, bug fixes, and the previous tests; some behavioural tests can be performed if required for new/modified functionality.

**FAT (Factory Acceptance Test) environment**

You test your installers and allow your testers to run through the application and test the new functions, bug fixes, and to ensure the old functionality isn't broken through regression testing.

**UAT (User Acceptance Test) environment**

Your client/customers/users test your application to ensure it works according to their expectations. Of note is that UAT should be identical to LIVE so what works here should work in LIVE.

**LIVE (Production) environment**

You just need to get the update to the latest version done, and recheck basics (smoke-tests): can access data, open reports, view documents, export/import data, etc.

1. Cpu utilization command, disk space cmds, all the processes that are running, ?

>Top – Linux Process Monitoring. ...

VmStat – Virtual Memory Statistics. ...

Lsof – List Open Files. ...

Tcpdump – Network Packet Analyzer. ...

Netstat – Network Statistics. ...

Htop – Linux Process Monitoring. ...

Iotop – Monitor Linux Disk I/O. ...

Iostat – Input/Output Statistics.

df command – Shows the amount of disk space used and available on Linux file systems.

du command – Display the amount of disk space used by the specified files and for each subdirectory.

btrfs fi df /device/ – Show disk space usage information for a btrfs based mount point/file system.

top command : Display and update sorted information about processes.

atop : Advanced System & Process Monitor.

htop : Interactive process viewer.

> ps -aux | less

>  ps –A #for every process on the system

1. How will you skip the test cases in maven life cycle?

Run maven with -Dmaven.test.skip=true

or

Just provide the command mentioned below which will ignore executing the test cases,

mvn package –DskipTests

or

you can add this plugin configuration to your pom if you do not want to set command line arg:

<plugin>

<groupId>org.apache.maven.plugins</groupId>

<artifactId>maven-surefire-plugin</artifactId>

<configuration>

<skipTests>true</skipTests>

</configuration>

</plugin>

1. Difference between thread and process?

Both processes and threads are independent sequences of execution. The typical difference is that threads (of the same process) run in a shared memory space, while processes run in separate memory spaces.

**Process**  
Each process provides the resources needed to execute a program. A process has a virtual address space, executable code, open handles to system objects, a security context, a unique process identifier, environment variables, a priority class, minimum and maximum working set sizes, and at least one thread of execution. Each process is started with a single thread, often called the primary thread, but can create additional threads from any of its threads.

**Thread**  
A thread is an entity within a process that can be scheduled for execution. All threads of a process share its virtual address space and system resources. In addition, each thread maintains exception handlers, a scheduling priority, thread local storage, a unique thread identifier, and a set of structures the system will use to save the thread context until it is scheduled. The thread context includes the thread's set of machine registers, the kernel stack, a thread environment block, and a user stack in the address space of the thread's process. Threads can also have their own security context, which can be used for impersonating clients.

1. How many nodes you can use with cluster in your comapany?

While there are obviously many variables that go into this, the basic idea is to evaluate the overall performance and capacity requirements for your workload and dataset, and then divide that into the hardware and resources you have available.  For a high-level and visual discussion on these factors as well as general practices for running a Couchbase cluster in production, see one of my recent Couchbase Conference presentations:[Couchbase Server 2.0 in Production 24×7](https://www.couchbase.com/nosql-resources/presentations/couchbase-server-2.0-in-production-24x7.html)

The sizing of your Couchbase cluster is going to be critical to its stability and performance.  Your application wants as many reads as possible coming out of cache, and the IO capacity to handle its writes.  There needs to be enough capacity in all the various areas to support everything else the system is doing while maintaining the required level of performance.

1. How many mangodb servers connected in your company?
2. Where do you use ansible vault?

In Bitbucket it is possible to define encrypted variables, but when [this](https://github.com/ansible/ansible/blob/devel/lib/ansible/constants.py) file is checked the only VAULT related variables are:

* ANSIBLE\_ASK\_VAULT\_PASS
* ANSIBLE\_VAULT\_PASSWORD\_FILE

These variables are not an option to solve the issue as when the ANSIBLE\_ASK\_VAULT\_PASS is set ansible-vault still prompts:

user@host $

Vault password:

When the same password is entered it can open the encrypted file, but the aim is to open the file without needing a file or entering a password in a prompt.

Another attempt to solve the issue was running export ANSIBLE\_ASK\_VAULT\_PASS=<ansible-vault-password>, but the interactive mode persists.

Another option is export ANSIBLE\_VAULT\_PASSWORD\_FILE=~/.vault\_pass.txt, but then this file needs to be pushed to the repository, but source Control repositories should not contain passwords.

--vault-password-file can instead point to an executable script that writes to stdout. This little-known feature should solve your problem.

First, write a simple, executable script that prints a system environment variable, and check that into your source control. Then, use Bitbucket's encrypted variable feature to set that environment variable to your ansible-vault secret. Finally, execute like so:

ansible-playbook site.yml --vault-password-file ./mypass.sh.

1. How do you write playbooks for different apps?

[databases] is a single name for a group of hosts. It allows you to reference multiple hosts by a single name.

Role is a set of tasks and additional files to configure host to serve for a certain *role*.

Playbook is a mapping between hosts and roles.

Example from [documentation](http://docs.ansible.com/ansible/playbooks_roles.html#roles) describes example project. It contains two things:

* Playbooks. site.yml, webservers.yml, fooservers.yml are playbooks.
* Roles: roles/common/ and roles/webservers/ contain definitions of common and webserversroles accordingly.

Inside playbook (webservers.yml) you have something like:

---

- hosts: webservers <- this group of hosts defined in /etc/ansible/hosts, databases and mail\_servers in example from your question

roles: <- this is list of roles to assign to these hosts

- common

- webservers

If Playbooks are defined inside of YAML files, then where are Roles defined?

They are defined inside roles/\* directories. Roles are defined mostly using YAML files, but can also contain resources of any types (files/, templates/). According to [documentation](http://docs.ansible.com/ansible/latest/playbooks_reuse_roles.html#using-roles) role definition is structured this way:

* If roles/x/tasks/main.yml exists, tasks listed therein will be added to the play
* If roles/x/handlers/main.yml exists, handlers listed therein will be added to the play
* If roles/x/vars/main.yml exists, variables listed therein will be added to the play
* If roles/x/meta/main.yml exists, any role dependencies listed therein will be added to the list of roles (1.3 and later)
* Any copy tasks can reference files in roles/x/files/ without having to path them relatively or absolutely
* Any script tasks can reference scripts in roles/x/files/ without having to path them relatively or absolutely
* Any template tasks can reference files in roles/x/templates/ without having to path them relatively or absolutely
* Any include tasks can reference files in roles/x/tasks/ without having to path them relatively or absolutely

The most important file is roles/x/tasks/main.yml, here you define tasks, which will be executed, when role is executed.

The most important file is roles/x/tasks/main.yml, here you define tasks, which will be executed, when role is executed.

Aside from the ansible.cfg living on the Ansible server, how do I add/configure Ansible with available Playbooks/Roles? For instance, when I run ansible-playbook someplaybook.yaml, how does Ansible know where to find that playbook?

$ ansible-playbook someplaybook.yaml

Will look for a playbook inside current directory.

$ ansible-playbook somedir/somedir/someplaybook.yaml

Will look for a playbook inside somedir/somedir/ directory.

It's your responsibility to put your project with all playbooks and roles on server. Ansible has nothing to do with that.

1. Where can you place the common vars or files that you use in the different playbooks?

ansible has a default all group that, funnily enough, contains all the hosts in the inventory file.

As such you can do like with any host groups and provide [group\_vars](http://docs.ansible.com/ansible/intro_inventory.html" \l "groups-of-groups-and-group-variables) for the host group.

As shown in the previous link these can be defined directly in the inventory file or they can be contained in a separate file named after the group in a group\_vars directory at the same directory level as the inventory file.

An example directory structure might then look something like:

-ansible

|--inventory

| |--group\_vars

| | |--all

| | |--dev

| | |--test

| | |--prod

| | |--webservers

| | |--databases

| |--dev

| |--test

| |--prod

|--roles

...

Your dev inventory file might then look something like:

[dev:children]

webservers

databases

[webservers]

web1.dev

web2.dev

[databases]

database-master.dev

database-slave.dev

All of these hosts will now pick up any host specific config (that could be defined either in line or, just like with group\_vars can be put into a host\_vars folder) and also config for the specific groups they are in such as webservers and then the groups they also inherit from such as dev but also, by default, all.

This can then be used to configure things in a coarser way than per host.

Things such as NTP servers may want to be defined in all, while DNS servers may want to be defined at the environment level (if your network is segmented into dev, test and production they may need different DNS servers setting in /etc/resolv.conf) while different types of servers may have different configurations around things such as lists of packages to be installed. Finally, some things may need to be host specific such as setting the MySQL server id in a replication group.

If, instead, you only want to define playbook global settings rather than across the inventory (and so could be accessed by other playbooks) then you simply need a vars block in your [play](http://docs.ansible.com/ansible/playbooks_variables.html" \l "variables-defined-in-a-playbook)definition like so:

- hosts: webservers

vars:

http\_port: 80

tasks:

- name: Task1 to be ran against all the webservers

...

As mentioned before, you can always use the all group here too:

- hosts: all

vars:

ntp\_pool:

- ntp1.domain

- ntp2.domain

tasks:

- name: Task1 to be ran against all the servers

...

In general though, I would strongly recommend using roles to structure what things are ran against certain hosts and then using the inventory to explain what servers are what type and then use a group\_vars dir at the inventory level to contain all the variables for those groups of hosts. Doing things this way will help you keep things in sensible places and allow you to easily reuse your code base.

1. Java is process or thread?

process

1. Where do you find the cpu utilization in splunk dashboard?

In matrix – cpu matrix

I would recommend you look at the already-existing "Splunk for \*Nix" and "Splunk for Windows" apps, both of which do this already for common operating systems.

<http://splunk-base.splunk.com/apps/22315/splunk-app-for-windows>

<http://splunk-base.splunk.com/apps/22314/splunk-for-unix-and-linux>

If by some incredible misfortune these do not support the system you are trying to collect from, they would still be good jumping-off points for learning how to support the same thing for your own systems.

Also, both of these are "Splunk Supported" meaning that if you have Enterprise support you can submit enhancement requests against them and be able to get Splunk themselves to work on improvements. <http://splunk-base.splunk.com/answers/4844/how-can-i-submit-an-enhancement-request>

1. How do you connect to your mangodb servers?

private static final String DB\_NAME = "yourDbName";

MongoClient mongo = new MongoClient();

DB db = mongo.getDB(DB\_NAME);

collection = db.getCollection("myCollection");

The db name is used by the driver; the connection string (172.234.52.24:27017) is used by the client when viewing the data (MongoVue or MongoExplorer). Also, stick to port 27017.

Edit: I'm using MongoDriver for java to connect.

standalone Java program.

String database = "TestDev";

String username = "user@test.COM";

String pass = "XXXXX";

char[] password = pass.toCharArray();

try {

List<ServerAddress> serverAddresses = new ArrayList<ServerAddress>();

ServerAddress address = new ServerAddress("hostname", portnumber);

serverAddresses.add(address);

List<MongoCredential> credentials = new ArrayList<MongoCredential>();

MongoCredential credential = MongoCredential.createPlainCredential(username, "$external", password);

credentials.add(credential);

MongoClient mongoClient1 = new MongoClient(serverAddresses, credentials);

DB db = mongoClient1.getDB(database);

System.out.println(db.getCollectionNames());

System.out.println("Done");

} catch (UnknownHostException e) {

e.printStackTrace();

}

Before to use below code please add property file having credentials all other required details in it. Read that property file in spring-config.xml. You can use below code to read the property file -

<context:property-placeholder location='classpath:/config/configTest.properties'/>

@Configuration public class MongoConfiguration extends AbstractMongoConfiguration{

@Value("${mongodb.dbname}")

private String dbName;

@Value("${mongodb.host}")

private String host;

@Value("${mongodb.port}")

private Integer port;

@Value("${mongodb.username}")

private String userName;

@Value("${mongodb.password}")

private String password;

@Value("${mongodb.authenticationdatabase}")

private String authenticationDatabase;

@Override

protected String getDatabaseName() {

return this.dbName;

}

@Override

public MongoClient mongo() throws Exception {

List<ServerAddress> serverAddresses = new ArrayList<ServerAddress>();

ServerAddress address = new ServerAddress(host, port);

serverAddresses.add(address);

List<MongoCredential> credentials = new ArrayList<MongoCredential>();

MongoCredential credential = MongoCredential.createPlainCredential(userName, authenticationDatabase, password.toCharArray());

credentials.add(credential);

return new MongoClient(serverAddresses, credentials);

}

@Override

@Bean

public SimpleMongoDbFactory mongoDbFactory() throws Exception {

return new SimpleMongoDbFactory(mongo(), getDatabaseName());

}

@Override

@Bean

public MongoTemplate mongoTemplate() throws Exception {

final MongoTemplate mongoTemplate = new MongoTemplate(mongo(), getDatabaseName());

mongoTemplate.setWriteConcern(WriteConcern.SAFE);

return mongoTemplate;

}

1. Thread dump, memory dump in splunk?

kill -3 <pid>

1. Do you create and delete the feature branch?

Delete after merge is the usual way. This is why git branch -d checks to make sure that the branch is fully merged before it will delete.

There are a few reasons that I can think of to keep a branch around: you might want to hold onto it in case you have bugs coming back once it hits production, or you might want a historical record.

In either case, you have the option of tagging the head of the branch before you delete it. A tag is like a branch in that it is a pointer to a commit, except for a few minor differences: 1) porcelain usually doesn't display tags in exploratory commands like git show-branch or tab-auto complete in checkout, 2) checking one out puts you in a detached (non-ref) HEAD 3) you can leave a "[tagging message](https://git-scm.com/book/en/v2/Git-Basics-Tagging)", which causes the tag to be saved as an object in the object store like a commit.

This way you preserve history, and if you ever do need to bug fix, I recommend just creating a new branch off of master for the fix.

or

|  |  |
| --- | --- |
|  | I can think of two reasons why you might want to keep a feature branch around for a bit:   * There is a chance it will get kicked back to you for more work by upstream. * Other developers possibly wanting that feature without wanting everything else in master.   In practice, most of the time deleting after merge is just fine |
|  |  |

1. null-pointer exception in java?

When you declare a reference variable (i.e. an object) you are really creating a pointer to an object. Consider the following code where you declare a variable of primitive type int:

int x;

x = 10;

In this example the variable x is an int and Java will initialize it to 0 for you. When you assign it to 10 in the second line your value 10 is written into the memory location pointed to by x.

But, when you try to declare a reference type something different happens. Take the following code:

Integer num;

num = new Integer(10);

The first line declares a variable named num, but, it does not contain a primitive value. Instead it contains a pointer (because the type is Integer which is a reference type). Since you did not say as yet what to point to Java sets it to null, meaning "I am pointing at nothing".

In the second line, the new keyword is used to instantiate (or create) an object of type Integer and the pointer variable num is assigned this object. You can now reference the object using the dereferencing operator . (a dot).

The Exception that you asked about occurs when you declare a variable but did not create an object. If you attempt to dereference num BEFORE creating the object you get a NullPointerException. In the most trivial cases the compiler will catch the problem and let you know that "num may not have been initialized" but sometimes you write code that does not directly create the object.

For instance you may have a method as follows:

public void doSomething(SomeObject obj){

//do something to obj

}

in which case you are not creating the object obj, rather assuming that is was created before the doSomething method was called. Unfortunately it is possible to call the method like this:

doSomething(null);

in which case obj is null. If the method is intended to do something to the passed-in object, it is appropriate to throw the NullPointerException because it's a programmer error and the programmer will need that information for debugging purposes.

Alternatively, there may be cases where the purpose of the method is not solely to operate on the passed in object, and therefore a null parameter may be acceptable. In this case, you would need to check for a null parameter and behave differently. You should also explain this in the documentation. For example, doSomething could be written as:

/\*\*

\* @param obj An optional foo for \_\_\_\_. May be null, in which case

\* the result will be \_\_\_\_. \*/

public void doSomething(SomeObject obj){

if(obj != null){

//do something

} else {

//do something else

}

}

Finally, [How to pinpoint the exception location & cause using Stack Trace](https://stackoverflow.com/q/3988788/2775450)

1. Any automation tools you have used?
2. Have you used rundeck?

**RunDeck** is cross-platform open source software that helps you automate ad-hoc and routine procedures in data center or cloud environments. **RunDeck** allows you to run tasks on any number of nodes from a web-based or command-line interface.

Chaitanya

1. How to connect from tomcat to db server?
2. How to configure pipeline plugin?

We can use continuous

1. How can you automate the processes from git to tomcat?
2. Difference between cft and terraform?

Terraform is used for any cloud technologies, cft for aws

1. What is connection draining in aws?