As Shiju and rajini explained about the bascis, I don’t want to go over again, just quick like to add a point.

Ansible is a conf tool, just managing software on top of hardware. Write configuration in one playbook and it will deploy on all of our servers in one go. That’s the power of ansible.

Lets take an example, I am having 50 servers, I have to install and configure docker on all 50 client machine, it also easy to perform manually, and that is not proper way, Now, with ansible in just few mins, it will deploy on all of our 50 servers in one go. That’s the power of ansible.

By install ansible, it default installs python.

It follows push based architecture for sending configurations, here we get full control, central server pushes the configuration information on target servers, we can control when changes are made on servers.

Pull based: In puppet we need to depend on agents (pull based), agents on server frequently check the configuration information from central server (master)

Agentless: Agentless, it means we don’t need any extra agent to be deployed on the target machine. It used ssh or python module. We have master server, that’s the main machine where ansible is installed and have couple node machines, so there will be no agents present b/w, it will be connected through ssh. Master contains inventory, which specifies all ip address of node machines and has playbook, which contains configuration files, when run playbook on master, configurations will be made on node machines. It is push based. Agents pool from master and respond via ssh.

It is idempotent, it cannot install s/w again and again.

Created playbook for launching nginx container. Ansible also have docker connection plugin, with that we can connect to hosts and using that plugin we can easily connect to containers and start configuring.

Wordpress- name: Install WordPress, MySQL, Nginx, and PHP-FPM- php(wordpress req php) installation

Y giving ssh password when executing - due to secuirty reason, we are not mentioning in hosts file, just executing directly... ansible vault (encyrted/auth).

Now, I want to install IIS server on windows and to deploy my app, I have created simple html file and the transferring and deployed site on client using ansible, win\_copy module.

Enable-iis – install IIS and enable IIS on windows hosts using winrm.

Deploy-IIS – download the URL & put to destination, also playbook will dowmload html file and put to desination.

Now IIS started, service is running, deploy site using ansible.

Present- Active IIS service (install and start)

Restart—already installed, it will just restart.

Include sub-fea --- not impact the already running services.

Create mana tools—start top, manager level configuration.

Win\_copy-

After default installation of docker we have some custom configuration for docker to fit in our infrastructure using ansible script we have all the steps written and tested so we can just execute that script so it will do all the custom configuration in newly added server. The same can be used to identify any manual configuration performed on server using ansible scripts. All the things is same for nginx.

Coming to TRAc nxgn appLICATION, they have new client called KLA, and for that client we have to provision the infra and start our containers. Built an installer, Installer contains all dependencies and packages required for that application, running the current version, when run that container, we can able to see readme file, terraform and ansible scripts. We can execute Ansible script from the container, it will connect to manager VMs and that particular software/dependency will install on that VM. Ansible will install latest version of Docker and configure Docker swarm. In this way Docker is installed on nodes and configured. Ansible can manage full environments. With Ansible, you can manage not only the containers, but the environments around the containers. But, if we build a container with a pure Dockerfile, it means that the only way you can reproduce that application is in a Docker container.

They have ACR setup and they are pulling base image from Docker hub public registry. Ansible will install latest version of Docker and configure Docker swarm.

In to the swarm we effectivity installed docker using ansible scripts, to run each services, nginx and backend services. They configure those as well.

They pull oassword secr, certs, using azure key vault and pass them into docker containers. Container should be aware of passwords, all info. That is the satandard way of confuring the docker conatiners.

Manager will recognize and if that instance goes down, it will start with the other.

Ansible enterprise tower cost around 10,000$ per year

Automating docker and swarm using ansible scripts. Ansible Playbooks are portable. If you build a container with a pure Dockerfile, it means that the only way you can reproduce that application is in a Docker container. If you build a container with an Ansible Playbook, you can then reproduce your environment in Docker. Ansible can manage full environments. With Ansible, you can manage not only the containers, but the environments around the containers. Docker instances still need to run on hosts, and those hosts need to be launched, configured, networked, and coordinated, whether they be local machines or full cloud infrastructures.

Ok coming to business traveler application, they are using ansible scripts for automating docker and docker swarm service. To create docker environment, they are using ansible scripts. They ran/execute ansible scripts in Docker swarm manager and worker nodes. They launched containers using ansible scripts. That means if we build a container with an Ansible Playbook, we can then reproduce our environment in Docker. We can spin up new docker env and attach to docker swarm in very less time using ansible scripts.

Ansible can manage full environments. With Ansible, you can manage not only the containers, but the environments around the containers. But, if we build a container with a pure Dockerfile, it means that the only way you can reproduce that application is in a Docker container.

Once the server is build, we need to configure, in order to do that we use some configuration management tools for automation. I Modified few ansible scripts for its configuration, in which role is defined for its server. Once the host is defined, it automatically deploy on worker node.

When we want to install different agents or any software related to that application, we will automate it, if we automate everything, we will be successful anywhere/on any infrastructure. We created ansible script for its configuration and when we execute playbook, that playbook will run by server and all those changes will be made on node machines. Then it will automatically install on the server (using github) No need of manual installation.

In pipeline, it has written in groovy script, will specify GIThub path/url where our scripts are mentioned, after temporary checkout on Jenkins workspace, we just have to pass on which env’s, in Jenkins and then it will deploy.

For updating new version of any S/W, we will write ansible script and commit to git, then checkout on ansible master then execute, whole infra will be updated, whatever pipeline is using.

1. Advantages of Ansible – agentless, it means we don’t need any extra agent to be deployed on the target machine. It used ssh or python module.

Parallel execution: nginx and docker are dependent. It execute the list of yaml is given.

It is idempotent, it cannot install s/w again and again.

Delcarative: to identify what is Executed , install nginx.

After default installation of docker we have some custom configuration for docker to fit in our infrastructure using ansible script we have all the steps written and tested so we can just execute that script so it will do all the custom configuration in newly added server. The same can be used to identify any manual configuration performed on server using ansible scripts. All the things is same for nginx.

S/W level patcging can be done using ansible. In Script, we have to mention, once create script, it will be helpful

Ansible components:

Inventory file–where we define all our IP address. We define host information.

Playbook – how to apply policies, launch tasks on servers. Expressed in YAML. As we all know, Playbook written in yaml format. It is used as provision tool as well as configuration tool.

Disadvantage of Ansible, it has limitations (limit to 100 nodes)

Scripts: First of all thanks for attending the call. Lets begin,

Ansible is an IT automation - managing the application by just writing the playbook. (Download s/w, necessary packages) need some prerequisites, configuration- roll back to previous version, and upgrade we can do with ansible. Provision tool- supply VM that need. Help me configure at one go.

Once all the required modifications should be done on the local branch, test it and then merge to master and that will trigger a new build to create latest version of ey-mobility-installer container.