

1) What is Ansible?

Ansible is an open-source automation tool used for configuration management, application deployment, and task automation.

It helps system administrators manage a large number of servers easily and efficiently.

Ansible हे एक **open-source automation tool** आहे जे **configuration management, application deployment, आणि task automation** साठी वापरले जाते.

हे system administrators ना अनेक servers एकाचवेळी सहज आणि प्रभावीपणे manage करण्यास मदत करते.

2) Why use Ansible?

- It is **agentless** – no software needs to be installed on client machines.
 - Uses **SSH** for communication.
 - Written in **Python**.
 - Easy to learn and manage with simple YAML files called **Playbooks**.
 - हे **agentless** आहे – म्हणजे client machines वर कोणतेही software install करण्याची गरज नाही.
 - **SSH** च्या माध्यमातून communication करते.
 - हे **Python** मध्ये लिहिलेले आहे.
 - **YAML files (Playbooks)** वापरून configure करणे सोपे आहे.
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3) Key Components of Ansible

1. **Inventory:** List of servers (hosts) where tasks will run.
2. **Modules:** Small programs that perform specific tasks (like install packages, copy files, etc.).
3. **Playbooks:** YAML files that define what tasks to run and where.
4. **Roles:** A way to organize playbooks for reuse.
5. **Tasks:** Individual actions executed on the target machines.

4) Advantages of Ansible

- ✓ Easy to use and understand
- ✓ No agent installation required
- ✓ Written in simple YAML language
- ✓ Can automate complex multi-tier environments
- ✓ Open source and free

5) Example of Ansible Playbook

```
- name: Install Apache on Web Server
  hosts: webservers
  become: yes
  tasks:
    - name: Install Apache package
      apt:
        name: apache2
        state: present
```

Marathi Explanation:

वरील playbook मध्ये webservers नावाच्या servers वर Apache2 package install करण्याचे काम केले जाते.

6) How Ansible Works

Ansible works by connecting to your nodes (servers or devices) through SSH (for Linux/Unix) or WinRM (for Windows).

It sends small modules (written in Python or other languages) to perform specific tasks. After executing the task, it removes the module automatically.

Ansible तुमच्या nodes (servers किंवा devices) शी **SSH** (Linux/Unix साठी) किंवा **WinRM** (Windows साठी) द्वारे जोडते.
ते specific काम करण्यासाठी छोटे modules पाठवते (Python मध्ये लिहिलेले).
काम पूर्ण झाल्यावर हे modules आपोआप delete होतात.

7) Ansible Architecture

Main components of Ansible architecture include:

1. **Control Node:** The system where Ansible is installed and from where automation commands are executed.
2. **Managed Nodes:** The servers or devices managed by Ansible.
3. **Inventory File:** A file listing all managed nodes with their IP addresses.
4. **Modules:** Units of work that perform specific functions (like installing software, copying files, etc.).

5. **Plugins:** Add extra functionality such as connection management, logging, etc.
6. **Playbooks:** Define automation instructions in YAML format.

Marathi:

Ansible च्या architecture मध्ये खालील घटक येतात:

1. **Control Node:** ज्या system वर Ansible install केलेले असते आणि जिथून सर्व commands चालवल्या जातात.
 2. **Managed Nodes:** जे servers किंवा devices Ansible manage करते.
 3. **Inventory File:** सर्व managed nodes ची IP पत्त्यासह यादी असलेली फाइल.
 4. **Modules:** विशिष्ट कामे करणारे units (उदा. software install करणे, files copy करणे).
 5. **Plugins:** अतिरिक्त कार्ये पुरवणारे घटक (उदा. connection, logging इ.).
 6. **Playbooks:** YAML फॉरमॅटमध्ये लिहिलेल्या automation instructions.
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8) Common Ansible Commands

English:

Here are some commonly used Ansible commands:

- ansible --version → Check Ansible version
 - ansible all -m ping → Test connection to all hosts
 - ansible-playbook playbook.yml → Run a playbook
 - ansible-inventory --list → Display inventory details
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9) Ansible Playbook Structure

A playbook is written in YAML format and contains one or more “plays”. Each play maps a group of hosts to a set of tasks.

Basic Structure:

```
- name: Playbook Name
  hosts: target_servers
  become: yes
  tasks:
    - name: Task Description
      module_name:
        option1: value1
        option2: value2
```

10) Real-Life Use Cases of Ansible

English:

- ✓ Automating software installation (e.g., Apache, Nginx, MySQL)
- ✓ Configuring system settings across multiple servers
- ✓ Managing cloud services (AWS, Azure, GCP)
- ✓ Continuous Integration/Deployment with Jenkins
- ✓ Security patch updates automatically

Marathi:

- ✓ Software installation automate करणे (उदा. Apache, Nginx, MySQL)
 - ✓ अनेक servers वर एकाचवेळी configuration करणे
 - ✓ Cloud services (AWS, Azure, GCP) manage करणे
 - ✓ Jenkins सोबत Continuous Integration/Deployment
 - ✓ Security updates आपोआप install करणे
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11) Difference Between Ansible and Other Tools

Feature	Ansible	Puppet	Chef
Agentless	✓ Yes	✗ No	✗ No
Language	YAML	DSL	Ruby
Ease of Use	Very Easy	Moderate	Difficult
Setup Time	Quick	Time-consuming	Time-consuming