Assignment: Essay - CM Tool Comparisons Compilation

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Managing IT environments requires the right tools for automation, security, and software deployment. This comparison looks at Ansible, AWX, and Ansible Automation Platform alongside Microsoft Configuration Manager and Intune, focusing on connectivity, device/user organization, security, inventory, application deployment, and configuration management. The insights come from discussions in the ‘Compare CM Tools’ teams channel and additional research.

*Connectivity*

Ansible, AWX, and Ansible Automation Platform are agentless, meaning they don’t require software running on managed devices. They connect on demand using SSH, secure shell connection, or WinRM to execute tasks remotely. This makes deployment simple but requires careful credential management. Microsoft Configuration Manager relies on a persistent agent installed on each client, allowing ongoing monitoring, software deployment, and security enforcement. While this provides deeper management capabilities, it requires network connectivity and regular updates to function effectively. Intune takes a cloud-first approach, using mobile device management and mobile application management to manage devices over the internet, making it ideal for remote and mobile users.

*Organization*

Ansible-based tools don’t have a built-in hierarchical structure like Microsoft Configuration Manager. Instead, they organize devices using inventory files, like a JSON or YAML file, where groups of hosts are defined manually or dynamically through integrations with cloud providers like AWS and Azure. Microsoft Configuration Manager manages devices using collections, which automatically update based on defined rules (such as OS type, installed software, or AD group membership). Intune uses Azure active directory groups for similar functionality in a cloud environment.

*Security*

AWX and ansible based software offer role-based access control, allowing different permission levels for users and teams. However, it’s not as detailed as Microsoft Configuration Manager’s security model. Microsoft Configuration Manager and Intune provide granular role-based administration. Microsoft Configuration Manager allows IT teams to assign security roles and scopes, defining who can access and manage specific collections, applications, or configurations. Intune integrates with Azure active directory roles, extending similar security delegation to cloud environments.

*Inventory and Reporting*

Ansible doesn’t store long-term inventory records like Microsoft Configuration Manager. Instead, it can collect live system facts using the setup module and export them to external databases for tracking. Ansible based software provide dashboards, but they mainly focus on automation tasks, not historical device tracking. Microsoft Configuration Manager excels in inventory management, regularly collecting hardware and software inventory and storing historical data for reporting and compliance tracking. Intune offers cloud-based reporting, focusing on compliance, security status, and app deployment analytics.

*Deployments*

Ansible deploys applications using Playbooks, that execute installation scripts remotely. This approach is flexible but there’s no built-in GUI for application deployment. Microsoft Configuration Manager and Intune handle application deployment natively. Microsoft Configuration Manager supports scheduled deployments, dependency management, and user-based targeting, making it a solid choice for enterprise environments. Intune provides cloud-based deployment, allowing admins to push MSI, Win32, and store-based apps remotely.

*Configuration*

Ansible is designed for configuration enforcement, ensuring systems remain in a desired state by running idempotent playbooks that apply changes only if necessary. Microsoft Configuration Manager uses Configuration Baselines to monitor compliance over time, offering detailed reports and automatic remediation scripts for fixing misconfigurations. Intune leverages compliance policies to enforce security settings and configuration rules on cloud-managed devices.

*Table (Extra Credit)*

|  |  |  |  |
| --- | --- | --- | --- |
| Feature | Ansible | Microsoft Configuration Manager | Intune |
| Client Connectivity | Agentless | Agent based | Cloud based |
| Security | Role based access control | Role based administration | Active Directory Roles |
| User Organization | Inventory Files | Collections | Active directory Groups |
| Inventory | No history | Detailed hardware/software inventory | Cloud based reporting |
| Application Deployment | Playbooks | GUI | Cloud based |
| Configuration Management | Playbooks | Baseline and compliance tracking | Compliance policies |

*Conclusion*

Choosing between these tools depends on your use case; Ansible based platforms are ideal for automation, infrastructure-as-code, and DevOps workflows. They are flexible, agentless, and great for enforcing configurations, but lack built-in inventory tracking and structured app deployment.

Microsoft Configuration Manager and Intune excel in enterprise endpoint management, offering comprehensive inventory tracking, application deployment, and compliance management. Microsoft Configuration Manager is best for on-premises IT environments, while Intune is a strong choice for cloud-first organizations. In my opinion, I would use Microsoft Configuration Manager/Intune for full device management, software deployment, and compliance tracking. I would use Ansible for automation, server provisioning, and infrastructure configuration.

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