DevOps: Engineering for Deployment and Operations

Configuration Management

Take aways

- Maintaining consistency of different elements of an IT infrastructure with respect to software is important
- Configuration management tools perform this function

Problem solved with configuration management tools

- You have dozens or hundreds of servers
- All are supposed to be identically loaded
  - Same software
  - Same version of each software package
- Suppose new version of a package is released. You would like to automatically update all of the servers.
- Suppose new computer is added. You would like it to be loaded with requisite software.

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# Tools used to maintain consistency among servers

- A tool that maintains consistency among servers is called a configuration management tool.
  - Not to be confused with configuration parameters.
    - Configuration management tools manage software packages
    - Configuration parameters affect the behavior of specific software package.
- Chef, Puppet, Ansible are the most common freely available configuration management tools

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Specifying actions of configuration management tools

- Define classes of servers
- For all servers of class XX, make sure the server is loaded with the latest version of Package Y.
- The CM tool then makes it so by periodically checking the version of Package Y that has been loaded and, if it is not the latest version, deleting the current version and installing the latest version.
- It may be that you want a specific version, not the last version. The CM tool does this as well.

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Scripts for CM tools

Scripts for CM tools are an example of infrastructure as code (IaC). They should be version controlled and tested just like application code.

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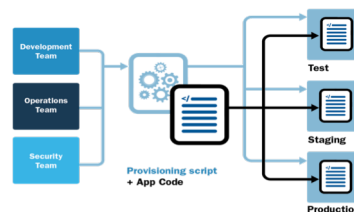
CM tools use SSH

- The CM tool executes on one server and controls the actions of other servers.
- This requires access and permissions to remote computers
- All of the CM tools SSH from the server on which they are executing to the servers which they control. This gives them access and permissions.

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Summary

- Configuration management systems maintain consistency across different servers in an IT environment

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