Cloud Automation best practices : how to reduce complexities in Cloud Automation

Description

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Background

Over The Last Few Years, The Introduction Of Cloud Infrastructure Has Brought About A Major Transition In I&O Teams' Role, From A Full-Time Job Of Setting Up Servers, Devices, And Applications, To That Of Managing Critical Infrastructure In Highly Automated Environments That Deliver:

- Rapid elasticity and scalability
- Distributed systems
- On-demand and self-service

In This Blog, I Have Listed Down The Best Practices That I&O Teams Could Adopt To Codify Their Cloud Infrastructure For,

- Efficient workflows
- Maintaining consistency while minimizing human errors
- Better governance
- Improved collaboration, and
- Lower operational costs

Best Practices

Infrastructure Blueprint

Like A Building Blueprint, It Infrastructure Also Must Have A Two-Dimensional Visual Representation Of Servers, Software, Storage, Networks, And Firewall Details And How They Relate Together. One Infrastructure Pattern May Not Be Applicable For All Organizations. Hence, It Is Necessary To Tailor-Make The Infrastructure Specific To Each Organization's Need. Having A Blueprint Gives A Strategic Overview, That Reveal How You Plan To Increase Predictability, Reduce Complexity, Simplify

Troubleshooting, And Reduces Repetitive Tasks. Since It Gives You Details Of What You Really Need And Have In Your Infrastructure, You Can Improve Security Posture And Trim Costs By Removing Un-Used Services.

Version Control

Use A Version Control System (Vcs) To Compare Coding Files, Identify Differences, And Merge The Changes If Needed Before Deploying Infrastructure Resources. This Helps To Keep Track Of Code By Identifying Which Version Is Currently In Development, Qa, And Production. Providing Meaningful Comments And Tags While Committing The Code Improves Traceability And Eases To Roll Back To Older Versions.

Access Control

It Is A Must To Have The Right Access Controls To Maintain Consistent Workflow Across Teams. It Helps To Define Roles And Responsibilities In The Team, Ensure Standard Practice In Coding, Ensure Review, Control Changes, Improve Security And Increase Team Collaborations.

Modular Approach

Breakdown The Code Into Independent Modules As Much As Possible To Follow The Dry (Do Not Repeat Yourself) Principle Of Software Development. It Also Makes The Internal Details Of Individual Modules Hidden, Making Each Module Easier To Understand, Test, And Refactor Independently. It Also Promotes Consistent Reuse Of Your Organization's More Common Architectural Patterns.

Provisioning And Configuration Tools

Provisioning Tools Are Used To Automate The Provisioning Of Infrastructure Components Like Servers, Operating Systems, Storage, Network, Etc., Whereas Configuration Tools Are Used To Customization In Provisioned Infrastructure. It Is Essential To Understand These Differences Between These Two, As Being Two Separate Steps In The Automation Process And Then Consider The Impact Of Configuration After Provisioning For That Process. It Also Reduces Complexity, Eases Maintenance, And Allows Enhancements Of The Code.

Immutable Infrastructure

Unlike Traditional On-Premise Infrastructure, You Can Build Immutable Infrastructure In The Cloud. Immutable Infrastructure Refers To The Components Of The Infrastructure That Are Never Modified After Deployment. Choosing Immutable Infrastructure Helps To Speed Up Deployments, Makes

Infrastructure Consistent And Reliable, No Configuration Drifts, And Simplifies Rollback And Recovery Processes.

Team Collaboration

As Important As Having A Centralized Vcs For Maintaining And Sharing Code Within And Across Teams, One Should Have A Good Collaboration Platform To Share Ideas, Suggestions, Schedule Quick Meet-Ups Within And Across Teams. This Ensures Seamless, Effective, And Productive Communication Between Managers, Team Members, And Other Stakeholders.

Conclusion

In This Blog, I Have Provided A Quick Overview Of Best Practices To Be Followed In Cloud Automation, Which Helps Reducing Technical And Organizational Complexities.

In The Next Blog, I Will List Down The Tools That Can Be Used For Infrastructure Automation By Following The Above-Mentioned Best Practices.

At Veryx Technologies, We Help Customers Reduce Their Deployment Time By Automating Their Cloud Infrastructure Provisioning And Configuration Using Cloud-Native And -Neutral Devops Tools. To Know More About Our Devops Capabilities, Click Here.

References

Devops.com, Where The Cloud Meets Devops – Https://Devops.com
Hashicorp Terraform – Https://Www.terraform.io

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Binu Nadarajan Is A Networking Industry Veteran With 16 Years Of Experience. Currently, He Heads The Cloud Services Practice At Veryx, Helping Businesses To Successfully Build Infrastructure In The Cloud As Well As To Migrate Their Applications To The Cloud. In His Spare Time, Binu Enjoys Reading And Playing With His Little Son.