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| AWS SERVICES | ASURE SERVICES | GCP SERVICES |
| Elastic cloud compute (EC2) | **Development** | **Compute** |
| Amazon RDS | App configutation | Google compute engine |
| Amazon s3 | Azure devops | Google app engine |
| Lambda | Azure spring cloud | Google Kubernetes engine |
| CloudFront | Azure devtest labs | Google cloud comtainer registry |
| Amazon lex | Azure lab services | Cloud functions |
| Glacier | Azure signalR service | **Networking** |
| Simple notification service | Azure visual studio app center | Google virtual private cloud |
| Amazon EBS elastic block store | **Compute** | Google cloud load balancing |
| Amazon VPC Virtual private cloud | App service | Content delivery network |
| Auto-scaling | App service linux | Google cloud interconnect |
| IAM identity and access management | Azure batch | Google cloud DNS |
| Amazon SQS Simple queue service | Azure functions | **Storage and databases** |
| Elastic beanstalk | Azure quantum | Google cloud storage |
| Dynamo dB | Azure red hat open sift | Cloud Sql |
| Amazon elasticache | Azure VMware solutions | Clouyd big table |
| Amazon redshift | Azure integration | Google cloud datastore |
| Amazon sage maker | Azure networking | Persistent disk |
| Amazon LightSail | Azure storage | **Big data** |
| Amazon efs elastic file system | Azure migration | Google bigquery |
| Amazon CloudWatch | Azure Iot+MR | Google cloud dataproc |
| Amazon chime | AZURE AI+ Machine learning | Google cloud datalab |
| Amazon cloud directory | Azure analytics | Google cloud pub/sub |
| Amazon cognito | Azure databases | **Cloud AI** |
| Amazon inspector | Azure identity security | Cloud machine learning |
|  | Azure management governance | Vision api |
|  |  | Speech API |
|  |  | Natural language API A |
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**Configuration management:** Configuration management is about automating significant and repetitive activities in an its environment. It also addresses tasks scale to hundreds and thousands of machines.

* **ANSIBLE:**

1. It automates infrastructure configuration, application,deployment, and cloud provisioning while leveraging the infrastructure as code service model. It helps devops engineers to achieve infrastructure, applications, networks, and container environment automation.
2. widely used for automation and configuration, it supports both on-premises and multi-cloud infrastructure configurations.

* **Puppet**:

1. Open-source platform for provisioning resilient infrastructure. It helps to configure, deploy, run servers and automate the deployment of the applications on the configured servers.
2. It integrates Kubernetes and docker.

* **Chef**: it helps to perform configuration management tasks on servers and computing resources.

1. Chef is an Agent-based automation platform.
2. Chef handles Infrastructure as Code.
3. Supports for all Operating systems and integrates with any Cloud technology.
4. Chef features Chef analytics for monitoring changes occurring in the Chef server.

**Containerization**

* containerization packages the application along with its environmental dependencies, which ensures that an application developed in one environment works in another. This helps developers and testers work collaboratively on the application, which is exactly what DevOps culture is all about
* Containers helps simplify the build/test/deploy pipelines in devops.
* Containerization eliminates this problem by bundling the application code together with the related configuration files, libraries, and dependencies required for it to run.

**Containerization tools**

Docker:

* open-source software development platform.
* Its main benefit is **to package applications in containers**, allowing them to be portable to any system running a Linux or Windows operating system (OS). A Windows machine can run Linux containers by using a virtual machine (VM)

Docker hub:

Cloud repository which Docker users and partners create, test, store, and distribute Docker container images. Using Docker Hub, a user can very easily access public, open-source image repositories and at the same time – use the same space to create their own private repositories as well.

**Kubernetes**:

* It enables the deployment of cloud-native applications anywhere and managed these deployments exactly.
* Kubernetes is an open-source system for deploying, scaling, and to manage containerized applications.
* Kubernetes brings both the software design and software operations together as one single operation by design.
* Kubernetes proves high scalability, easier to use container management, and at the same time helps to reduces delay in communication.
* Building micro-services and adding lifetime replications based on the need is a super easy task with Kubernetes. If the Project demands many more of these and makes changes also, there is not much effort that is needed.
* Kubernetes manages the balancing load on all the participating nodes via the load balancer and keeps the Master away from being overloaded with all the tasks at once.

Ci\cd tools

A CI/CD pipeline is a series of steps that must be performed to deliver a new version of software. Continuous integration/continuous delivery (CI/CD) pipelines are **a practice focused on improving software delivery using either a DevOps** or site reliability engineering (SRE) approach.

Jenkins: open-source, java-based s/w, It combines tools for continuous delivery and integration with real-time testing and reporting.

Team city: It integrates perfectly with Docker and Kubernetes. The latter are solutions for building and deploying containerized apps and testing them in virtual environments.Git lab: if development team hosts code in the GitLab repository, using this tool for DevOps engineering is a clever choice. It allows DevOps developers to review the code, deploy, integrate, and deliver from a single dashboard.

IAC tool:

Terraform:

Terraform is **an open-source infrastructure as code software tool** that provides a consistent CLI workflow to manage hundreds of cloud services. Terraform codifies cloud APIs into declarative configuration files.

**Basic services info**