Migration

Service mesh
Istio
Cdn
Limit request
Load balancer
Cronjobs
HA
Architecture
Two process in same container —if container killed
Cloud security
cloud deployment secure and reliable
question about CNI (e.g. calico)
Outage troubleshooting

1. Assess
    * Define the resources and capacity your application requires
    * Create a list of your applications (e.g.,who is using what and how often)
    * Identify key stakeholders and involve them early in the process
    * Create a survey to send to application owners to define requirements & prioritize your migration pipeline
    * Determine which applications are cloud-eligible
    * Determine which applications are cloud-desirable
    * Understand application interdependencies and network configurations
    * Specify security and compliance requirements
    * Validate SLA and high availability requirements

2. Plan
Strategies / Tools
    * Pick a strategy for each application: rehost, replatform, or rebuild
    * Plan and design the cloud infrastructure including services like networking, security, etc.
    * Identify key capabilities for migrating workloads
    * Support for complex, multi-tier apps
    * Pre-migration testing & validation
    * On-prem rollback
    * Post-migration customization
    * Create migration plan for both apps and their data

Testing
    * Test data migration and synchronization
    * Measure performance
    * Validate security controls required
    * Evaluate your cloud footprint costs

    * Document necessary changes to be done as part of the actual migration
    * Plan the time required for application cutover
    * Consider cloud instance right-sizing recommendations

3. Migrate
    * Migrate according to the plan created
    * Use a phased approach, and for each phase:
    * Execute migration wave
    * Validate in cloud
    * Apply lessons to next wave
    * Apply lessons learned

4. Optimize
    * Monitor application and cloud usage
    * Implement bursting or scaled-usage to optimize user experience
    * Empower IT to successfully manage ongoing operations
    * Monitor cloud costs and adjust as needed
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https://www.youtube.com/watch?v=XLNOaRJctQM

```
- Why do you want to move this app to Cloud?
    - DC exit
    - Latency problem
    - performance issue
    - using niche services / managed services
    - improve upon HA

- How much of code change are you okay with?
    - complete re-dev - SQS, SNS, Aurora, S3, etc.
    - just minor configuration changes --- suggest usage of managed services - RDS,
    - no changes at all  -- Lift & Shift

- RTO / RPO req.
    - how much of max downtime?
    - how much data can you loose?
    - cost constraints
```

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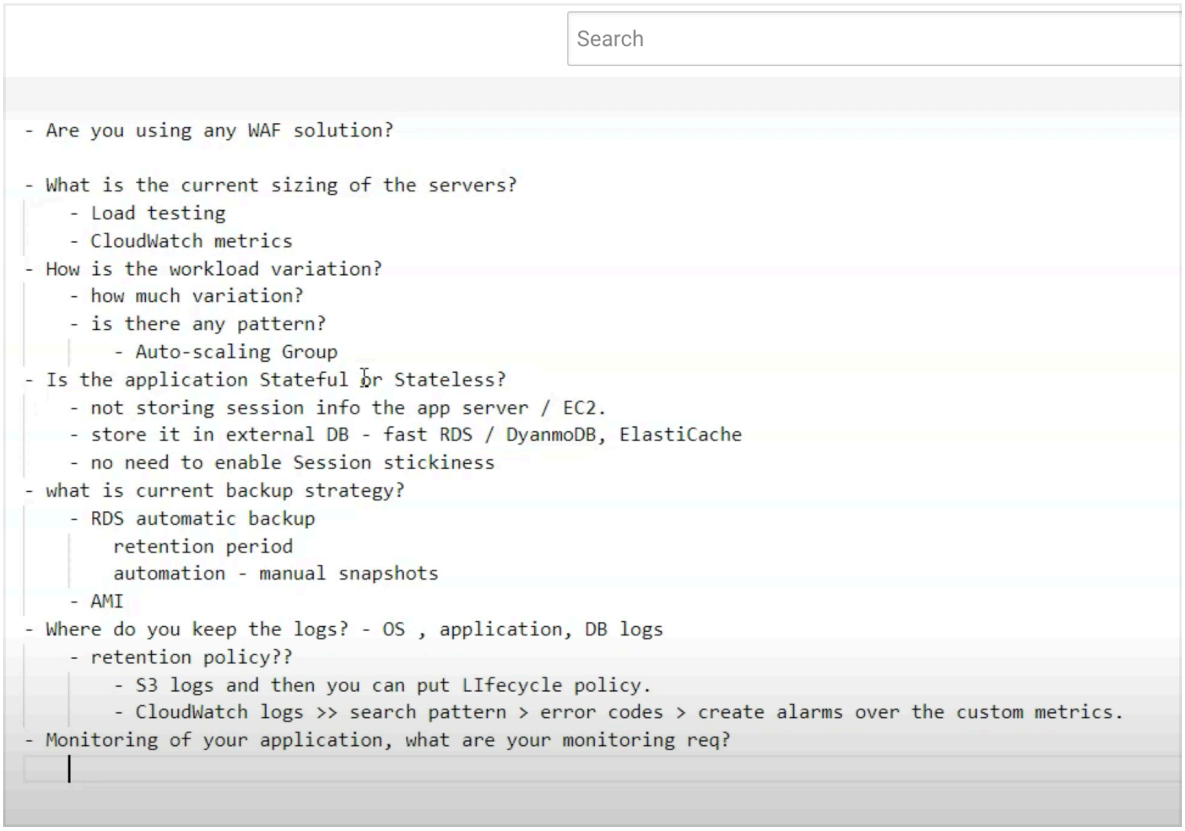
- what load balancer are you using?
  - CLB, ALB, NLB.
- what OS is there on the machines?
  - latest OS.
- what app server is running? version etc.
  - compatibility.
- What DB are you using?
  - look at the features.
- Public facing website
  - WAF to secure your application
  - CloudFront CDN service
- How's the spread of your cusotmers?

- Are you using any WAF solution?

- What is the current sizing of the servers?

- How is the workload variation?
  - how much variation?
  - is there any pattern?

- Is the application Stateful or Stateless?



Assign:

https://github.com/rustudorcalin/hit-counter

Roi - 1

1.5%-74k
+1% processing fee
2 lakhs- insurance (15 days- cancel)
————————————

Nbfc-

App url is not working
Authorisation issue
OOM kill error
Image pull back issue
Crashloopback
Kubelet stopped working on worker node
Pod îs pending state - pic is not created or associated, storage class missing
Pod stuck in creating state
Evicted pod

Pvc in pending state
Namespace stuck in terminating state

How to start/stop kubelet

```
1 - Create a AKS cluster from scratch and discussed all component of cluster
2-  What is Rancher , how to set up rancher
3-  How to add Cluster into rancher
4-  How to set monitoring for cluster
5-  How to set alert for cluster,if pod went down how do we get alert over email id
6-  Type of service in cluter
7- How many type of secret and how to create all secret
8- How to import secret into pod manifest
9- How to create SSL certificate and import into cluster, what all the process ( theory)
10-  How to Upgrade AKS cluster and what all pre and post task during upgradation
11 - what are the challeges we have faced during upgradation , that we will dsicussed
12- How to scaling AKS cluster
13 - How to create private repository to manages all application
14 - What is persistent volume and how do we create
15 - what is storage class how do we create storage class and import into cluster
16 - How to add pv into volume
17 - How to we extend persistent volume in Pod
18-  What is Velero backup tool, how to we set up velero on cluster
19 - How do we take Backup of entire name space in kubernetes
20 - How do we migrate namespace from one cluster into another Cluster
21 - we can discussed about my current infrastructure of kuberntes
220 what all day to day actrivity in my environment
23- What all challenges we have faced during my kubernetes journey ,,that we will discussed.
24 50+ interview qs
25 - how do we push images from local machine to private repository
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E:\study\doc_notepad+\syllabus.txt

```
what are all component of master node

what all component of worker node

If scheduler went down then what are the impact over existing application  - no impact

If etcd went down then what are the impact over existing application - no impact

If etcd went down then what are the impact over existing application when it restart - i will be impact

if kubelet down then what are the impact - pod will be impacted

which conatiner runtime we are using in our infrastructure - containerD

what is kube-proxy

What is daemon set

what is diffrence between deployment and statefulset

What is difference between docker swarm and kubernetes

What are main parameter we have to define in pod yaml file ?

which type of application running in your env - mysql...atlas...busybox...elastich seacrh...

what are the command to uodate image in deployment - kubectl set image deployment/my-deployment mycontainer=myimage:1.9.1

How do we roll back application when we are doing upgradation ?
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If pod are in crashloop back off


1   We have to check status of pod
2   Status of PVC which is associated with pod
3 - run kubectl describe command to check pod
4 - kubectl logs pod
5 - OOM killed  - due to lack cpu/memory
6 - Pod port 8443, so we to make sure our port is open from firewall
7 - pods will be get authorization issue


case -2

## pod are in pending state

1 -  PVC are not available
2 -  due to insuuficient resource over Node   - How to overcome  ( we have to check with top command or grafana dashboard /
                    desribe node..which node having low utlization so we have migrate some of pod to other worker node

3 -  we can also decrease size of pod as check with application team,,,or get details from past one month report from grafana dasl


##how to check much memory and cpu available over node

1 - you hve to run describe node command
2 - kubectl top node
3 - grafana dashboard
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case -04

Pod are getting image pull back off error

1 - we have to check image are present in container registry or not
2 - check with particular version /tag are present in registry
3 - we have to validate correct path of image
4 - We have to check image pull secret are crated over namespace or not
5 - if secret aviablable but still issue...so we have to check that imagepullsecret avialabel in deployment manifest
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Case -05

######unable to create PVC or pVC are stuck in pending state

1 - Storage class is missing
2 - quota issue on that particular location
3 - size are too big like 5TB...we can craete upto 2TB in azure
4-   We have to check storage class binding mode from WaitforFirstConsumer to immediate


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case -06

########How to extend existing PVC

1 - we have to check AllowVolumeExpansion should be TRue in storage class
2 - we have to shutdown application or make it replica count to zero..then we can extend volume in persistent volume claim manife
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### application URL down

1 - First we have to check status of pod..if pod is running
2 - service is missing so We have to check service is available or not
3 - we have check label and selector should be match on pod and service
4 - we have to on particular port is open from fw..no blockage on application pod
5 - sometime certificate has been expired so we to renew it
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case -08 -

var/lib/docker size full


1 delete unused image
2 - delete unused container
3 - unused volume
4 truncate to zero of json.logs file
5 - deleted old log file
```

- Help plan the roadmap and future growth
- Participate in on-call rotation to ensure coverage for planned/ unplanned events
- Improving the scalability and reliability of our systems in production
- Automate the provisioning and maintenance of infrastructure
- Ability to operate in a high-pressure environment and troubleshoot complex issues quickly successfully handle multiple priorities
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RaJbet

EKS, RDS, IAM, Lambda ,elk