Rearc Quest

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Status	**IN REVIEW**
Last date updated	09 Apr 2022
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Goals

- Public cloud & index page (contains the secret word) - `http(s)://<ip_or_host>[:port]/`
- Docker check - `http(s)://<ip_or_host>[:port]/docker`
- Secret Word check - `http(s)://<ip_or_host>[:port]/secret_word`
- Load Balancer check - `http(s)://<ip_or_host>[:port]/loadbalanced`
- TLS check - `http(s)://<ip_or_host>[:port]/tls`

Documentation and Helpful Resources

- **Github repository**
- Terragrunt
- Routing VPC with public and private subnets (NAT)
- TLDR; Docker Envs
- File Permissions in Docker Containers on Remote Hosts

Architecture

The above diagram shows a basic implementation of the React Quest requirements.

'If-I-Had-More-Time' Architecture

The above diagram shows architectural improvements if more time is found.

Architecture flow

Details the flow diagram for both diagrams.

1. Application Load Balancer in a public subnet allows public traffic on ports HTTP-80 and HTTPS-443.
    a. Self-signed certificate.
    b. Route tables, ACLs, and security groups are configured to allow traffic between the load balancer and EC2 instance.
2. EC2 instance and application are accessible through the load balancer and SSH for keyholders via the public subnet.
    a. The application runs in a docker container on the EC2 instance.
    b. Deploy a "Bastion" server within an SSH security group with SSH key access to web servers in private subnets. This is one method to have SSH access to servers in private subnets. Another technique not shown here is via VPN with a specific range of IP addresses.
3. Configure security groups, route tables, and ACL to do the following:
    a. Allow traffic flow from the VPC's Internet Gateway.
    b. Allow port 80 redirects and port 443 traffic from application load balancers to resources in a private subnet.
    c. NAT Gateway, Route tables, and ACL allows resources in a private subnet to reach the internet, respond to inbound requests, and send responses through allowed resources in public subnet.

Other notes:

- Only featured in *“If-I-Had-More-Time”* diagram**
- 3 through 4 featured only in *“If-I-Had-More-Time”* diagram*

🚀 Deployment strategy

Deployment Cloud

- AWS us-east-2

Deployment Tools

- Terraform
- Terragrunt
- AWS Terraform registry
- AWS Terraform modules

Deployment Assistance

- Harold the Cat

✅ Action Items

	Action	Description	Owner	Updated Date	Status
1	Pet Harold	Self explanatory	Matt	08 Apr 2022	COMPLETE
2	Submit Git Repo	Work from a shareable github repository	“”	09 Apr 2022	COMPLETE
3	Deploy to AWS	Use automated deployment tool (IaC)	“”	09 Apr 2022	COMPLETE
4	Containerize	Create OCI image	“”	09 Apr 2022	COMPLETE
5	Inject SECRET_WORD	Hint: At-Home Muppet	“”	09 Apr 2022	COMPLETE
6	Deploy LB in front	Make application accessible	“”	09 Apr 2022	COMPLETE
7	Add TLS	Self signed certificate	“”	09 Apr 2022	COMPLETE
8	Meow, ALOT	Sound a cat makes when it wants something	Harold	09 Apr 2022	ONGOING