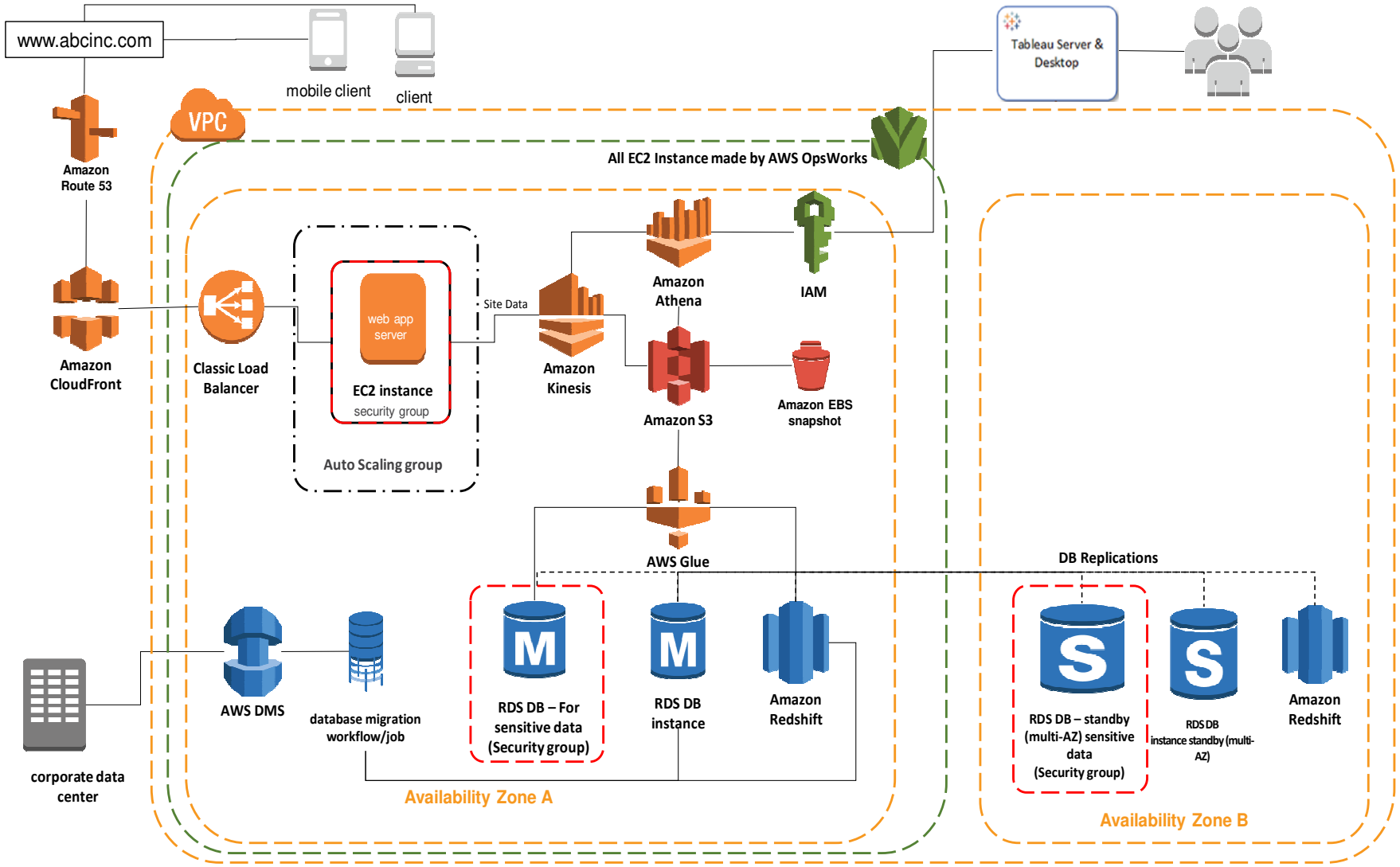
ABC INC Architecture



As an AWS architect I would suggest attached architecture, as Company is expecting a rapid growth in their business, to support that and allow company to grow organically mention AWS component will be really helpful.

Scalability

To Scale their application to meet demand I would suggest Auto Scaling feature on **AWS EC2 instance**, which will help us to ensure that we have correct number or EC2 instances running to handle the complete load of the application. For this, we need to create the collections of EC2 instances using Auto Scaling Group.

Disaster Recovery

Another need of the customer is disaster recovery for which I would make sure that their main DB instances are replicated to different region, as shown in diagram I am suggesting two AWS RDS instance and one Redshift instance, which will be replicated using DB replication feature to support any disaster recovery. Along with DB, replication I would also suggest the Amazon EBS snapshot, which will take regular snapshots of S3 buckets that will also help in recovery.

Amazon RDS Multi-AZ deployments will provide enhanced availability and durability for Database Instances. When we provision a Multi-AZ DB Instance, Amazon RDS automatically creates a primary DB Instance and synchronously replicates the data to a standby instance in a different Availability Zone. This will enhance durability and increase availability for production environment.

Load Balancing

To effective distribution load, **AWS Elastic Load Balancing** (Application Load Balancers) will be use, which will make sure application efficiency of application. As shown in diagram we are using single AWS zone for this application so Application Load Balancers will use multiple EC2 instance to distribute the load.

Share Content

To store and shared the content I will use the Amazon S3 storage, which will be later use to different loads to different databases, applications or users.

Amazon S3 is object storage built to store and retrieve any amount of data from anywhere – web sites and mobile apps, corporate applications, devices etc. It is designed to deliver Very high durability. S3 provides comprehensive security and compliance capabilities. It will give customer flexibility in the way they manage data for cost optimization, access control, and compliance. Amazon S3 also provides query-in-place functionality, allowing you to run powerful analytics directly on your data at rest in S3. As shown in diagram I will recommend to use **Amazon Athena** which will enable any complex query over S3.

Latency

To reduce the latency I will suggest **Amazon Kinesis**, which will make sure data is available in real-time on S3, it can also be used with Amazon Athena to direct query or viewing of the data.

Auto Recovery

I would suggest that company runs their AWS stuff on Virtual Private Cloud and use **AWS OpsWorks**, which will add security and self-healing benefits.

AWS OpsWorks is an automated deployment tool in AWS that allows you to work at a high level of systems abstraction. Rather than manually configuring each detail of every component, OpsWorks runs scripts that perform these actions. OpsWorks uses the open source configuration tool Chef; a wide range of scripts or "cookbooks" as they are called in Chef. Once Auto healing option is enable for AWS OpsWorks, it manages EC2 instance in case of failure as well.

Security

Running on **AWS VPC** (Virtual Private Cloud) will give added security to company's content. In addition, AWS Identity and Access Management (IAM) should be use to securely control the access of AWS services for any external access.

To secure any sensitive data like SSN, Credit Cards etc. I would suggest a different AWS RDS instance, and this instance should be part of security group to ensure security of the data. In addition, data stored in this secure RDS instance must be encrypted.

ETL

Also to cost effectively managed to data ingest to different DB's I would suggest to use **Amazon Glue** which will handle dependency resolution, job monitoring, and retries. AWS Glue is a fully managed ETL service that makes it simple and cost-effective to categorize data, clean it, enrich it, and move it reliably between various data stores.

Data Migration

To migrate the existing client data I would suggest AWS Database Migration Service (AWS DMS). It supports most widely used commercial and open-source databases such as Oracle, PostgreSQL, Microsoft SQL Server, Amazon Redshift, Amazon Aurora, MariaDB, and MySQL. My assumption is client is using one of the mention database and AWS DMS will help migrating that to AWS RDS and AWS Redshift as needed.

Performance

Along with other component, I would also suggest Amazon Route 53 and Amazon CloudFront services. Amazon CloudFront is a global content delivery network (CDN) which will help customer to securely deliver the contact with low latency and high transfer speeds.

Amazon Route 53 is a highly available and scalable cloud Domain Name System (DNS) web service. It is designed to give businesses an extremely reliable and cost effective way to route end users to Internet applications by translating names like www.abcinc.com into the numeric IP addresses like 192.1.1.1 that computers use to connect to each other. Amazon Route 53 is fully compliant with IPv6 as well.

References:

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