**Case Study Implementation Plan for Ozmart Retail Group**

**1. Objective**

This actual cloud migration plan’s goal is to make the Ozmart Retail new IT foundation cloud strong, elastic, and protected. The new design on the AWS-based infrastructure is more scalable and more secure than the current model and less costly to maintain and operate in addition to augment meeting the organization’s need to effectively integrate with the existing legacy systems at Ozmart.

**2. Key Components of the AWS Cloud Environment**

**a. Hybrid Cloud Architecture Design**

1. **Architecture Overview**:
   * **Hybrid Cloud Model:** Connect an organization’s environment with Amazon Web Services to design a hybrid environment. This particular configuration enables Ozmart to benefit from all the advantages that cloud infrastructure offers whereas preserving some grounding systems on-premise.
   * **Components:** There are basic components such as EC2 for computing, S3 as the storage, RDS for managed database and VPC for network and security.
2. **Implementation Steps**:
   * **Set Up AWS Virtual Private Cloud (VPC):** Specify a VPC with the public and private subnets that help to differentiate between applications that directly interact with the Internet and back-end applications.
   * **Configure Secure Connectivity:** AWS Direct Connect and VPN Gateway should be implemented to ensure that data centers in an organization’s premises connect with AWS cloud securely.

**b. Compute Resources and Auto Scaling**

1. **Elastic Compute Cloud (EC2)**:
   * **Task:** Use EC2 instances in order to acquire elastic computing capability. As for instance type, variations will be made depending on workload to establish the best performing and most affordable solution.
   * **Auto Scaling:** It is recommended to use ASG or Auto Scaling Groups to control the number of instances in a group as per the traffic in the most cost-efficient manner.
2. **Implementation Steps**:
   * **Deploy EC2 Instances:** There are different EC2 instances that can be reserved for different applications and different workload.
   * **Configure Auto Scaling:** Use Auto Scaling Groups and policies to scale the instances automatically depending on given criteria.

**c. Storage and Data Management**

1. **Amazon S3 and RDS**:
   * **Task:** For unstructured data use Amazon S3 service and for managed relational databases use Amazon RDS service. This ensures secure, reproducible and highly scalable storage for data, backup Snapshots and logs.
   * **Amazon Elastic File System (EFS):** ESCS for storing shared files to guarantee highly flexible and easily scalable file systems that allow for multiple EC2 instances to connect to simultaneously.
2. **Implementation Steps**:
   * **Set Up S3 Buckets:** This creates S3 buckets for storing static assets, back ups as well as logs.
   * **Deploy RDS Instances:** Create RDS for managed databases and perform the automatic backups and patching.

**d. Networking and Security**

1. **Network Design**:
   * **Task:** Describe the organization of a secure network with a focus on VPC and subnets and security groups. This can be accomplished by making use of other facilities such as Network Access Control Lists (ACLs) and Security Groups in AWS for controlling traffic incoming and outgoing.
2. **Security Measures**:
   * **Identity and Access Management (IAM):** IAM best practices should be adopted to reduce user’s access privileges and also to protect AWS resources.
   * **AWS WAF and Shield:** Must implement AWS WAF for securing the web application and AWS Shield to protect against DDoS attacks.
3. **Implementation Steps**:
   * **Configure VPC and Subnets:** Subdivide VPCs and their subnets according to application tiers that your applications should utilize.
   * **Set Up IAM Roles and Policies:** Define the IAM roles and policies in order to control access rights.
   * **Implement WAF and Shield:** AWS WAF and Shield has to be set up to offer security against web attacks as well as DDoS.

**e. Application Migration and Optimization**

1. **Application Migration**:
   * **Task:** Consider application migration through methods that are lift and shift, replatform and refactor for the best cloud solutions.
2. **Continuous Integration and Continuous Deployment (CI/CD)**:
   * **Task:** Deploy code using AWS CodePipeline and AWS CodeDeploy in order to create Continuous Integration and Continuous Deployment.
3. **Implementation Steps**:
   * **Plan Application Migration:** Create migration plan for each application defining most refined and sophisticated approach.
   * **Deploy CI/CD Pipeline:** Use AWS CodePipeline as well as AWS CodeDeploy for setting up auto-deployment and updating services.

**f. Monitoring, Logging, and Cost Management**

1. **Monitoring and Logging**:
   * **Task:** Employ AMI CloudWatch to achieve monitoring and alerting of important serves in the AWS environment and AMI CloudTrail for logging and auditing of activities in the AMI environment.
2. **Cost Management**:
   * **Task:** AWS Cost Explorer is the tool used for tracking the costs and AWS Budgets are used in controlling the expenses of the resources.
3. **Implementation Steps**:
   * **Configure CloudWatch and CloudTrail:** Whenever the cloud environment is created, establish the procedures of monitoring and logging for all significant AWS services.
   * **Enable Cost Management Tools:** AWS provides two tools namely AWS Cost Explorer and AWS Budgets which help in tracking and managing different aspects of costs.

**3. Phased Implementation Plan**

To ensure a smooth transition and minimal disruption, the migration will be implemented in phases:

1. **Phase 1: Preparation and Planning (Weeks 1-2)**
   * **Tasks:** Gathering requirements, identification and evaluation of risks, cloud preparedness identification, hybrid architecture.
   * **Deliverables:** Requirements document, risk assessment report, Cloud readiness report, Network architecture diagrams.
2. **Phase 2: Core Infrastructure Setup (Weeks 3-4)**
   * **Tasks:** The basic concepts of VPC, how to create a VPC, how to launch an EC2 instance, how to configure storage like S3, RDS, EFS.
   * **Deliverables:** Proper setup of VPC & Subnets, Usage documentation of EC2 & RDS, Configuration of S3 & EFS.
3. **Phase 3: Security and Compliance (Weeks 5-6)**
   * **Tasks:** IAM configuration, security group and ACL, Web application Firewall and shield.
   * **Deliverables:** With all IAM roles, policies, documentation of security configurations, WAF, and Shield setup tutorials.
4. **Phase 4: Application Migration and Optimization (Weeks 7-8)**
   * **Tasks:** Application migration, fixture setting, application optimization.
   * **Deliverables:** Application migration plan, configurations of CI/CD pipelines, report on optimisations and improvement of application performance.
5. **Phase 5: Testing and Validation (Weeks 9-10)**
   * **Tasks:** Functional performance test; performance test; security test; disaster recovery test.
   * **Deliverables:** Test reports, disaster recovery documentation, contain details that are in a written form.
6. **Phase 6: Go-Live and Post-Migration Monitoring (Weeks 11-12)**
   * **Tasks:** Migration, testing and conversion, post implementation check up, staff familiarization.
   * **Deliverables:** They said that they have go-live checklist, monitoring reports, and a completion report on training.

**Conclusion**

In this way, when following the detailed implementation plan proposed using the case study below, Ozmart Retail Group will be able to attain secure, elastic, and cost-effective AWS cloud environment. The cloud infrastructure would be reviewed on the routine, security assessments, and the cloud environment would be tweaked to enhance its effectiveness in the firm’s operations.