Ozmart Retail Group Cloud Migration

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**Date:** 08/09/2024  
**Project Name:** Cloud Migration   
**Reporting Period:** 26/08/2024 – 08/09/2024

**Mentor: Biplob Ray**

**1. Executive Summary**

Ozmart has been growing exponentially in past couple of years that has led to significant growth of business. Thus, a strong need to have reliable and scalable infrastructure. After the meeting with stakeholders and IT team the decision of migrating the IT infrastructure to cloud was taken.

As per the last weeks progress and feedback from last submitted Draft report, the team realised that the goals of the project didn’t align with the expectation of the stakeholder. After reviewing the previous documents and initially submitted cloud migration plan. The team is back on track to migrate the IT infrastructure to cloud. The team has made the change of migrating the infrastructure to Azure as they have realised the organisation is utilising Microsoft products and its easier to integrate them with Azure considering the still set of the team.

**Status:** On track **Git-hub:** [**https://github.com/amaanpatel05/OzMart-PG-8.git**](https://github.com/amaanpatel05/OzMart-PG-8.git)  
**Overall Progress:** 40%

**Key Accomplishments:** Git-hub setup, team communication, assessment and planning,Cloud security frameworks**,** site-to-site VPN connection**,** Implementation of agile methodology, cloud architecture diagram, on premise diagram.

**Key Issues/Risks:** Cost Management**,** Disaster recovery, Data migration of large server( file share, SQL database)

**Roles and Responsibilities**

|  |  |  |
| --- | --- | --- |
| **Name** | **Student ID** | **Role** |
| Simarpreet Kaur | 12226696 | Security Engineer |
| Navdeep Saini | 12207773 | Network Engineer |
| Anupa Bodhimaluwa | 12216471 | Cloud Engineer |
| Mohmed amaan patel | 12204426 | Project manager |

**2. Project Milestones**

**Milestone:** Cloud and On-premise network Diagram considering security and best practices. Synchronising Active directory services and Access Management using AD sync.  
**Planned Date:** 01/09/2024  
**Actual Date:** 07/09/2024  
**Status: COMPLETED**   
**Comments:** Team has delivered the network layout of the whole infrastructure and communication between cloud and on Premise network.

**Upcoming Milestones:**

* Configuration of Azure Site to Site VPN
* End user licencing for office 365.
* Work on Azure Network security Group(NSG)

**3. Budget and Resources**

**Budget Status:**

* **Planned Budget:** $150,000
* **Spent To Date:** $12000

**Resource Allocation:**

* **Total Resources Assigned:** 4
* **Resources Utilized:** 4
* **Upcoming Resource Needs:** NA

**4. Technical Status**

**Infrastructure:**

* **Current State:** Current infrastructure is running on-premise. Team is working on establishing the connection between On-premise and cloud infrastructure.
* **Completed Tasks:** Network diagram and security frameworks.

**Applications:**

* **Migrated Applications:** We have checked the compatibility of the application and installed the azure agent on the application server and are ready to migrate.
* **Pending Applications:** NA

**Data Migration:**

* **Completed Data Migration:** We have installed the azure migration agent on all the server and are ready to migrate the SQL server.
* **Pending Data Migration:** NA

**5. Risk Management**

**Risk:** Legacy server   
**Likelihood:** Medium   
**Impact:** High  
**Mitigation Strategy:** We are planning to upgrade the server before migrating them.

**Risk:** Latency issues   
**Likelihood:** Medium   
**Impact:** Medium   
**Mitigation Strategy:** Currently the sites are on 500MB internet and 100MB ELAN traffic. Considering the growth, the internet speed needs to be increase at all site or have a dedicated line to each site.

**Risk:** Backups  
**Likelihood:** Low   
**Impact: high**  
**Mitigation Strategy:** Planning on the strategies to backup the servers in azure.

**7. Stakeholder Communication**

**Recent Updates:**

Since the last meeting with the stake holder and the feedback shared, IT team re-evaluated the project plan during the sprint review meeting and designed the project to align with stake holders’ requirements. Below are the tasks each team member worked on and is working on to speed up the process and catch up with dates initially setup for deliverables.

8. Roles and Responsibilities

|  |  |  |
| --- | --- | --- |
| **Name** | **Roll Number** | **Role** |
| Simarpreet Kaur | 12226696 | Security Specialist |
| Navdeep Saini | 12207773 | Network Architect |
| Anupa Bodhimaluwa | 12216471 | Cloud Solutions Architect |
| Mohmed amaan patel | 12204426 | Project manager |
|  |  |  |

A screenshot of a computer

Description automatically generated

**Fig**: Current on-Premise Network Diagram

A computer screen shot of a network

Description automatically generated

**Fig**: Network between cloud and different sites

A screenshot of a computer

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**Fig**: cloud deployed infrastructure

**Project manager**: Made sure that the feedback provided by the stakeholder is understood by the whole team. Created new repo on GitHub and made sure IT team have access to it. Project is managed using **Agile methodologies** and have 6 steps to it, which includes **Requirements, Plan and Design, Develop, Testing, Release and Review**. Using agile methodology the teams are cross functional and make sure you have all the required skills in the team (ref: (Trivedi , (PDF) Agile Methodologies 2021).

During the project we conducted regular **stand ups** to discuss the progress of the tasks assigned to each team member. We Created a **Kanban board** to assigned task and keep track of progress of each team members. **Mood Marbles** were used to discuss the mood of each team member. **Github** was used for uploading the document which made sure all the team have access to the require documents and are up to date with progress of each team member.

**Network Engineer:** Worked on laying out current Network tropology, Using **NetFlow and Zabbix**(https://www.zabbix.com/) the network performance and utilisation were noted. Worked on identifying the bottle neck in the network and making sure correct cables and ports are available for the required bandwidth once moved to the cloud (Tian et al., Prediction of evolution behaviour of Internet bottleneck delay based on improved Logistic equation 2023). Currently network engineer is working on setting up a site to site VPN between on premise and Azure cloud(<https://learn.microsoft.com/en-us/azure/vpn-gateway/design>).

**Priority task** for next sprint is delivering a working site to site VPN connection between task on premise and azure cloud.

**Cloud engineer**: Worked with network engineer to analyse current workload on the network and project the required bandwidth for future growth and make network scalable. There are 2 network migration strategy lift and shift and Re-platforming migration that suits best for Ozmart migration Abbas, Zafer & Khan, Konal. (2023). Reading about security controls in cloud and tools that can be used for monitoring and incident response(SIEM)  
**Priority task** - Finalize the Migration strategy and work on configuring Cloud services.

**Security Engineer**: Worked on knowing the cloud security frameworks (Chauhan, Milan, and Stavros Shiaeles. 2023).Since, access is going to play a crucial role Security team is working on implementing Access management based on different roles in the organisation.

**Priority task**: Make document of different roles in the organisation and what access would they need. Also, work on making sure all the data stored in cloud in encrypted and secure using SSL.

**Referencing**

* 1. Trivedi , D. (no date) (PDF) Agile Methodologies. Available t:https://www.researchgate.net/publication/356924683\_Agile\_Methodologies (Accessed: 08 September 2024).
  2. Tian, H. et al. (no date) Prediction of evolution behavior of Internet bottleneck delay based on improved Logistic equation, Redirecting. Available at: https://doi.org/10.1016/j.comnet.2023.110041 (Accessed: 08 September 2024).
  3. Abbas, Zafer & Khan, Konal. (2023). Cloud Migration Strategies: Moving Applications and Workloads to the Cloud.
  4. Chauhan, Milan, and Stavros Shiaeles. 2023. "An Analysis of Cloud Security Frameworks, Problems and Proposed Solutions" Network 3, no. 3: 422-450. https://doi.org/10.3390/network3030018