IMAGE REGISTRARS' LTD SYSTEMS AND DR PROCESS

1.1 IMAGE REGISTRARS' SYSTEMS

1. Shares register systems.
2. Leave systems.
3. Payroll system
4. Quick books
5. Image 2.0 self-help portal
6. Queue system.
7. AGM system
8. Active directory
9. Firewall (Sophos XG)
10. 3CX Systems
11. PABX
12. Freshdesk system

1.1.1 Functionalities.

The above platforms have different functionalities which includes.

1. **Share register System.**
   This is the core application that run image registrars' day to day processes and this process includes.
   a. Dividend and interest processing.
   b. Replacement/immobilization and transfers of certificates.
   c. Monthly reconciliation of Dividend
   d. Process of over the counter (OTC) shares
   e. Reconciliation of monthly returns(shares)
   f. Update of Shareholder details.

2. **Leave System.**
   This is the plartform that is used to keep track and record the employee's requests for exemptions and leave.

3. **Payroll system.**

   It manages and automate the process of paying employees. However, below are more specific ways in which a payroll system is used in the organization:

   a) Calculation of statutory deductions: In Kenya, employers are required to deduct and remit several types of statutory deductions from employee salaries, including income tax, National Social Security Fund (NSSF) contributions, National Health Insurance Fund (NHIF) contributions, and Pay As You Earn (PAYE) taxes. The system

is used to accurately calculate these deductions based on current tax rates and regulations.

b) Compliance with labor laws: the system complies with various labor laws and regulations, such as the Employment Act and the Labor Relations Act. The system helps ensure compliance by accurately calculating employee wages and statutory deductions and generating reports that can be used to demonstrate compliance.

c) Payslip generation: the system generates payslips automatically and store them electronically for easy access and record-keeping.

Overall, the system is used to automate the process of paying employees, ensure compliance with labor laws and regulations, and provide accurate and timely reporting for payroll-related activities.

4. **Quick books**

This is an accounting software used by the organizations to manage our financial data and operations. The software has several functions that can benefit organizations, including:

a) Financial management: QuickBooks tracks all financial transactions, including sales, expenses, and payments, making it easy to manage finances and monitor cash flow.

b) Invoicing: The software allows the organization to create professional invoices quickly and easily.

c) Inventory management: It tracks inventory levels and help in managing our assets.

d) Reporting: It provides a range of financial reports that can help our origination understand the financial position, such as profit and loss statements, balance sheets, and cash flow statements.

5. **Image 2.0 Self Help Portal**

This is an online self-help portal for shareholders to monitor and track all their portfolio and queries raised. The Application has several functions which includes.

a. View Shareholdings: This enables shareholder to see all the shareholdings in one place.

b. Dividend and Ufaa tracking: This Enables shareholder to track all there dividends and Ufaa submission in one place. It also allows them to request for dividend has/have been lost/ destroyed or misplaced to be replaced.

c. Raise and track queries: Shareholder can log a query relating to these shareholding and track the progress of the query raised.

d. Client company secretary can also monitor their shareholders activities and get access to the statutory report analytics.

6. **Queue management system**

The queue management system is used to manage shareholders who physically walk into our facility. The system manages the flow of shareholders in the our facility, reducing wait times and improving the overall customer experience.

The function of a walk-in queue system includes:

a) Managing customer flow: The system manages the flow of shareholders, directing them to the appropriate service area. This helps to reduce congestion and improve the overall flow of traffic in the facility.

b) Reducing wait times: By managing the flow of customers, the system reduces the wait times, which also improves shareholder satisfaction and reduce the likelihood of shareholder leaving without receiving service.

c) Providing real-time information: The system also provides the organization with real-time information about the wait times, service status, and expected wait times. This helps to manage customer expectations and reduce frustration.

d) Increasing efficiency: The system increases the efficiency of service delivery by providing staff with real-time information about the number of customers waiting and the expected wait times. This helps staff to prioritize tasks and allocate resources more effectively.

7. **AGM Management System.**

The AGM system used to manage the process of conducting an Annual General Meeting for a company or organization or cooperatives. The function of an AGM system include:

a) Meeting management: The system helps manage the entire process of conducting an AGM, including scheduling the meeting, sending out invitations and notifications to attendees, managing the agenda, and recording proceeding of the meeting.

b) Online attendance and voting: The systems allow attendees to join the meeting remotely and participate in voting using electronic voting systems using USSD or Web plartform. This helps increase accessibility and improve attendance rates, particularly for attendees who are unable to travel to the meeting venue.

c) Compliance: The systems helps to ensure compliance with legal and regulatory requirements, such as ensuring that a quorum is present, recording the minutes and proceedings of the meeting, and ensuring that all attendees are able to participate in the meeting.

d) Data management: The systems help to manage and store data related to the AGM, including attendee lists, voting records, and minutes of the meeting. This helps ensure that important information is easily accessible and securely stored.

8. Active Directory

Microsoft Active Directory is a directory service that provides authentication and authorization functionality for Windows-based computers in our organization . The function of Microsoft Active Directory can include:

a) User authentication: Active Directory allows users to authenticate themselves when logging into their Windows-based computer or accessing network resources. This ensures that only authorized users can access these resources.

b) User management: Active Directory enables administrators to manage user accounts, including creating and deleting user accounts, assigning permissions and roles, and resetting passwords.

c) Group management: Active Directory enables administrators to manage groups of users, including creating and deleting groups, assigning permissions and roles to groups, and adding or removing users from groups.

d) Computer management: Active Directory enables administrators to manage computers and devices that are connected to the network, including configuring settings, installing software, and enforcing security policies.

e) Resource management: Active Directory enables administrators to manage network resources, such as printers, shared folders, and other devices, by assigning permissions and roles to users and groups.

f) Security management: Active Directory provides a centralized platform for managing security policies and enforcing access controls across the network, helping to protect against unauthorized access and other security threats.

Overall, Microsoft Active Directory plays a critical role in managing user access and permissions, securing network resources, and ensuring the smooth operation of Windows-based networks.

9. **Firewall (Sophos XG)**

Sophos XG Firewall is a network security device that helps us protect our networks against cyber threats by monitoring and controlling traffic to and from the network. The function of Sophos XG Firewall can include:

Network security: Sophos XG Firewall provides protection against cyber threats such as viruses, malware, and hacking attempts by monitoring network traffic and identifying and blocking malicious activity.

Access control: Sophos XG Firewall enables administrators to control access to the network by enforcing policies that restrict access to certain websites, applications, and services based on user identity, time of day, and other criteria.

Intrusion prevention: Sophos XG Firewall uses intrusion prevention technology to detect and block unauthorized attempts to access the network, preventing network-based attacks.

VPN connectivity: Sophos XG Firewall supports Virtual Private Network (VPN) connectivity, allowing remote workers to securely connect to the network and access company resources.

Reporting and analytics: Sophos XG Firewall provides detailed reporting and analytics on network activity, allowing administrators to identify security threats, monitor network usage, and optimize network performance.

Web filtering: Sophos XG Firewall includes web filtering capabilities that allow administrators to block access to inappropriate or malicious websites, helping to protect against phishing attacks and other online threats.

1.2 ENVIROMENT AND DR

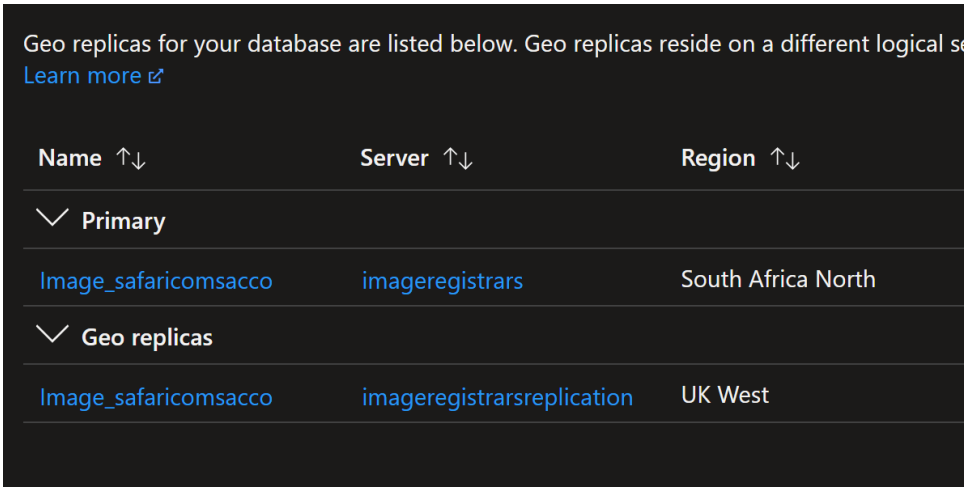
The above platforms run on 2 different environment which includes.

1. MS Azure cloud (Plartform as a service (PAAS))
2. On Premise (HQ data center)

1. **MS Azure cloud**

We utilize plartform as a service model for a cloud platform i.e., Image 2.0 self-help portal, AGM systems and Contact form. Load balancing is managed automatically.

The database and the plartform have its own replication in different regions i.e., South Africa North and UK west as shown below.



This is applied in all both the AGM system and the Image 2.0 Self-help portal.

2. **On Premise (HQ data center)**

The plartform the run on this environment includes.

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6. Active directory
7. Firewall (Sophos XG)

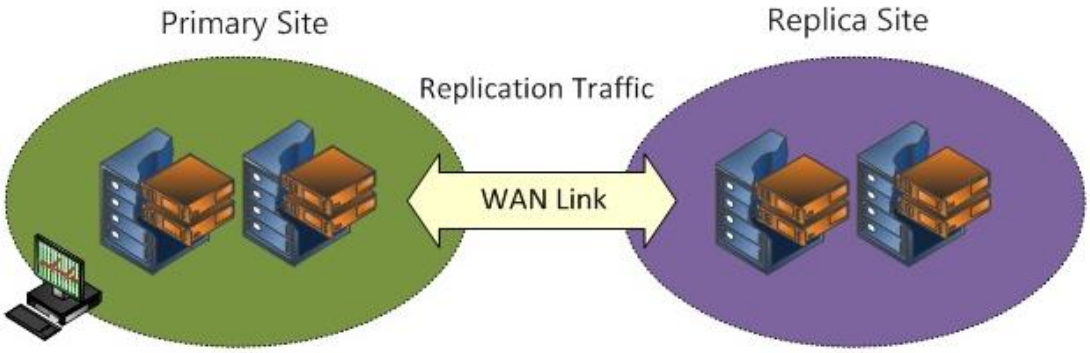
This environment has a replication site at East Africa data center.

It uses Hyper-V replica to provide for disaster recovery services. Primary and secondary host servers are in separate geographical locations with replication over a WAN link. There is no Active Directory dependency between the servers. Additionally, Configurations for the Hyper-V Replica server and storage hardware at each site do not have to be identical unlike Microsoft failover clustering which requires identical hardware servers in both sites.

When enabled for a VM, Hyper-V initial replication create an identical replica virtual machine on a secondary host server. After this happens, Hyper-V Replica change tracking will create and maintain a log file that captures changes on a virtual machine VHD. The log file will then be played in reverse order to the replica VHD based on replication frequency settings (5 minutes or 15 minutes). This means that the latest changes are stored and replicated asynchronously.

A key advantage of Hyper-V replica is it does not require a failover cluster or any shared storage. You can replicate individual or multiple virtual machines.

By default, Hyper-V Replica only stores a single recovery point that will be the latest replication sent from the primary to the secondary.



I have attached a detailed recovery process for HQ on premise VM servers.