

# Developing ICT Infrastructure

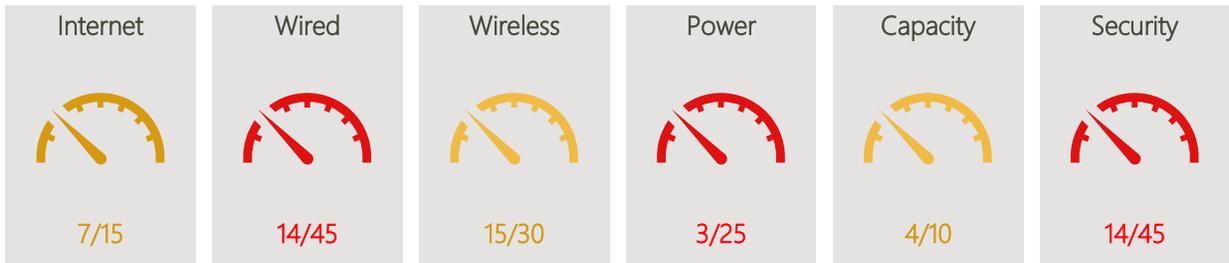
An infrastructure audit was conducted by the Scadco technical team. The full document provides insight on fifteen metrics which were measured using existing management system with detailed findings and recommendations. The infrastructure components measured provided the following results:

## Network Infrastructure Discovery

Score: 57/248 ● ● ●

	Description	Speed
Internet	Business Fibre Uncapped (Telkom)	40MB   40MB
Wired	Tenda, Alcatel Lucent	1Gbps   100Mbps
WiFi	Aruba AC, TP-Link AC	300Mbps
Redundancy & Power	Eltek UPS	3Kva
Firewall	Draytek Vigor2860n	1Gbps

## Network Infrastructure Score Card



- 1 Implement an **enterprise firewall** that will improve the firewall security score to a green rating
- 2 Install **Managed Online UPS** in network cabinets to provide power consistency and equipment protection
- 3 Implement **Microsoft Intune for Education** to provide MDM capability (Windows, Android, iOS, MacOS)
- 4 Update **faculty** devices to **Windows 10 Education** and join to Azure Active Directory
- 5 Implement MFA for **faculty devices** and provide training on using Windows Authenticator/SMS PIN
- 6 Develop a network map that shows network routes, devices and equipment on a diagram (digital copy)
- 7 Implement **School Data Sync** between **Office 365** and **EdAdmin**
- 8 Develop a draft document of **ICT policies** and submit it to the School Management Committee for approval
- 9 Consider creating an eLearning strategy that is run by consultants and **developed by the faculty**

## Current State

A full IT discovery and assessment at the school highlighted that in most areas, an IT vision and strategy evolved with the growing needs of the school and adapted in order to service expansion as it was required. A standardization and consolidation project will allow the school to rapidly make substantial improvements to the security and management of the IT infrastructure. While a number of suggestions have been offered to improve the assessment score in different categories, Scadco recommends that these few critical concerns be addressed first.

## Key Areas to be Prioritized

- Firewall
- UPS/Power
- Windows 10 Education (M365)
- InTune

## Firewall

Carlswald House Preparatory School is currently being serviced by a DrayTek Vigor2860n. This is an SMB class router/firewall combo device which is capable of threat management and web filtering if the CYREN subscription service is purchased additionally. With the current exponential growth of infiltration and ransomware attacks, it is highly advisable that the school upgrade to an enterprise grade firewall with advanced inspection and web filtering. Ensuring that children cannot access inappropriate web sites is of utmost importance as it can be highly damaging to both the child, and the school. Confirming regular updates of the web filtering categories and periodic testing will proactively protect the school from potential incidents.

## UPS/Power

With the current climate in South Africa, it is vital to ensure regular, clean power supply to networking hardware and equipment. Down time and interruptions can be highly frustrating to staff, especially if it occurs during high pressure situations such as reporting periods. Costly devices such as networking switches and access points using PoE (Power over Ethernet) face potential failure during frequent power cuts. Ensuring clean power to all important devices will both improve network availability and protect physical hardware from faults due to power loss or power surges.

## Windows 10 Education and Office 365

Multiple of the pressing needs at the school can be addressed with the deployment of Office 365. As a side effect, the benefits of licensing the staff also filter down to the students via the Students Use Benefit program. Activating the Microsoft Office 365 A3 for Faculty will enable us to upgrade every teacher laptop to Windows 10 Education. Standardising the teacher's Windows devices to the latest operating system will greatly improve security on the network. It also enables several important management and security functionalities needed by the school through Windows InTune.

## Device System and Security Standardization

Currently all teacher laptops are their own personal property and managed by them. There is a mix of Windows operating systems and Microsoft Office versions. Windows Updates are not managed and occur only if and when staff decide to run them. Anti-virus is not standardized and also are the teacher's responsibility to install and maintain. M365 A3 for Faculty licensing will enable us to standardize all teacher laptops on Windows 10, the latest, most secure and up to date Windows version. It also will allow us to install the latest version of Microsoft Office on all the machines. Management and security needs will be addressed in the final category below.

## Windows InTune

M365 A3 for Faculty includes Windows InTune for device management. Enrolling all teacher devices to the InTune service will allow for a single management console to ensure compliance. Through InTune, devices will be given a schedule to run Windows Updates and will also ensure all other Microsoft products and software and kept up to date and secure. InTune also includes Windows Defender which will protect the devices from viruses and malicious attacks. Virus definitions and updates are also handled through the same management console. All Mac devices can also be enrolled with InTune to be managed and controlled through the same console. This benefit through the Office 365 licensing can be a substantial cost saving for the school when considering the price of the current Apple device MDM (Meraki).

## Future Steps

Scadco has identified that a number of pain points currently experienced at Carlswald House Preparatory school could be addressed with an overseas model that has recently been brought to South Africa, Hardware as a Service (HaaS). This will streamline standardization of teacher devices, unlock swap out devices to eliminate downtime, and fully cover devices for insurance including breakage and theft. All of the above is covered in an easy to absorb, monthly cost. A further breakdown of HaaS is addressed in Appendix B.

## Appendix A: Costing

---

### Wired, Wireless Network & Power

Description	Once-off Cost	Recurring Cost	Recurring Type
Phase 1.1: Fibre, LAN, WLAN	R 256 635	-	-
Phase 1.2: Cabinet UPS: 1VA Online Managed UPS	R 62 751	-	-
Phase 2: WLAN Expansion (1-to-1 Environment)	R 74 192	-	-

### Security

Description	Once-off Cost	Recurring Cost	Recurring Type
Enterprise Firewall: FortiGate 60E	R 3 500	R 2 150	Monthly

### Microsoft 365 Licensing

Description	Once-off Cost	Recurring Cost	Recurring Type
Microsoft 365 Education A3 (45 Faculty)	-	R 3 645	Monthly

### Microsoft 365 Implementation

Project	
Windows 10 Education Upgrade	Covered in SLA & MS Licensing
Office 365 with Teams	Covered in SLA & MS Licensing
InTune & Azure MFA	Covered in SLA & MS Licensing

# Appendix B: Hardware-as-a-Service

## Overview

The Scadco HAAS solution provides customers with hardware-as-a-service, a scalable service offering to address efficiency and competitive operations. Modern IT environments are complex which increase overheads.



# Features and benefits

---

## Tier 1 Hardware

- Re-purposed generation 3-6 Tier 1 hardware units from Dell, HP and Lenovo

## Full asset lifecycle management

- All company software pre-installed (custom image)
- End-user training and support
- Flexible refresh and upgrades
- Completely scalable
- Support and warranty management
- Transparent and predictable monthly fees

## Latest OS options

- Our rentals include the latest Microsoft Windows Operating System or older if specified.

## Hardware Care

A unique and exclusive product that incorporates asset management and logistical services under one banner – providing you peace of mind rental cover:

- Initial Setup and Delivery – Included  
Initial delivery and setup is included in all major centers – additional charges may apply for advanced installation and outlying areas.
- 3 business days repair and replace – included  
Should a machine become faulty, we will either repair that device or replace it the next business day.
- Replacement of damaged devices – included  
In the event of user device misplacement or damage we will replace the device with a similar unit within our agreed SLA
- Swap-out logistics – included  
Units that become faulty will be swapped-out within our agreed SLA
- Asset Tagging – included  
We offer a free asset tagging service on all our rentals
- Imaging – included  
We can customize, deploy and test your custom images on your machines prior to delivery.

## Simplified high-tech hardware environment

Keep pace with the latest technology and avoid capital outlay on depreciating equipment while ensuring maximum productivity and efficiency.

## Intelligent and Lean Financial Operations

Predictable and transparent per user monthly pricing. Tax deductible – pure rental OPEX structure. No recurring costs of hardware refreshes.

## Decreased Risk

The risk of ownership is removed, included costs of disposal (including sale at a loss) if the equipment becomes obsolete.

A single IT provider manages the lifecycle, maximize your IT update time – support costs are reduced across the board.

## No hassle, fast deployments

Unlike major capital expenditures which may need to be planned months in advance, rental arrangements can be implemented immediately.

## Managed Services

Outsource the day to day management of your desktop environment

## Hardware & Software Flexibility

Hardware can be upgraded/downgraded during the rental agreement or at the end.

Flexible software upgrades and latest OS

## Certified Data Compliance and Accountability

Our consistent storage decommissioning process ensures anonymity, certified data protection and environmental compliance.

## Managed Backup for HAAS

Leverage the knowledge and expertise to manage and host your workstation backups, allowing you to focus on more strategic IT projects.

Delivering continuity for workstations and remote work forces is a challenge for any organization. With workstation backup, you receive complete protection with daily backups. Select file-level or full image backups.

## Pricing

Pricing is shown per user per month in the table below.

Business Desktop R 197 per user	Business Laptop R 323 per user	Business Pro Desktop R 304 per user	Business Pro Laptop R 379 per user
✓ Intel Core i3 CPU	✓ Intel Core i3 CPU	✓ Intel Core i5 CPU	✓ Intel Core i5 CPU
✓ 4GB RAM	✓ 4GB RAM	✓ 4GB RAM	✓ 4GB RAM
✓ 500GB HDD	✓ 500GB HDD	✓ 500GB HDD	✓ 500GB HDD
✓ Windows Pro	✓ Windows Pro	✓ Windows Pro	✓ Windows Pro
✓ Keyboard & Mouse	✓ Keyboard & Mouse	✓ Keyboard & Mouse	✓ Keyboard & Mouse
✓ Hardware Care	✓ Hardware Care	✓ Hardware Care	✓ Hardware Care
✓ Delivery	✓ Delivery	✓ Delivery	✓ Delivery
Period: 36 Months	Period: 36 Months	Period: 36 Months	Period: 36 Months

Hardware Care | Delivery Includes:

- Initial delivery to major centers | Delivery and collection of faulty units | Secure Logistics | Asset Tagging | Next Business Day Replacement - Major centers reported before 12pm. Theft and Damage Cover (not inclusive of malicious damage) | Loan Unit Program
- \*\*No penalties fees apply on changes <20% change to 36-month contract.
- \*Pricing Excludes Vat

## Addons

Desktop & Laptop Replacement fee (once-off)	R 1 150
Monitor 18.5"-19"	R 57 per month
Monitor 22"-24"	R 67 per month
Data Projector (3500 Lumens)	R 398 per month
Luidia Ebeam Wireless	R 288 per month