

KZN Economic Regulatory Authority

Terms of Reference

Request to appoint an accredited, **COMMSCOPE** Certified networking service provider to test, repair and reconfigure the fibre network switching technology in our Pietermaritzburg Redlands office at 1 George MacFarlane Lane, Redlands Estate, Wembley, Pietermaritzburg.

The original network cabling installed in 2018 was done by a Krone certified installer. **Compulsory returnable: Accredited COMMSCOPE certified networking service provider.** Failure to submit a valid accreditation will result in a disqualification.

Problem:

1. The fibre configuration from the core switches on the Ground floor to each of the network cabling cabinets of the 1st and 2nd floors appear to be lost/corrupted.
2. The fibre connections from the core switches to the SAN fibre switch is also lost or corrupted.
3. One of the 2930F switches on the 2nd floor appears to have faulty Ethernet ports.

Current workaround:

1. The core switches have been disconnected from the networking infrastructure.
2. The fibre ports from the 2930F switch that is used to connect the SAN & Servers, is used to link to each of the other THREE 2930F switches (LAN) in the networking cabinet in the main server room on the ground floor.
3. These fibre ports are connected with 10Gb SFP transceivers (SIX)
4. There is a spare redundant Ethernet cable that has been used to connect the cabinets between the main server room and the network cabinet on the 1st floor.
5. There is another spare redundant Ethernet cable in the 1st floor network cabinet that has been used to connect to the 2nd floor network cabinet.
6. 10Gb SFP Transceivers (J9151D) have been disconnected from the core switches as we are not sure what has caused the fibre configuration to fail.
7. Connected the fibre ports from the 2930F switch that is used to connect the SAN & Servers to link to each of the other THREE 2930F switches (LAN) in the networking cabinet in the main server room.

Network Performance:

The throughput performance to the servers and the SAN has been impacted as a result of this issue.

1. Current Network Switch Infrastructure

1.1. Main Server room

TWO 3810M 16SFP+ 2-slot Switch (JL075A) – configured with:-
16 SFP+ fixed 1000/10000 SFP+ ports; Duplex: 100BASE-TX: half or full;
1000BASE-T: full only; Ports 1 – 16 support MACSec

FOUR 2930F 24G PoE+ 4SFP+ Switch (JL255A) - configured with:-24 RJ-45
autosensing 10/100/1000 PoE+ ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u
Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3at PoE+);
Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only **AND** 4 SFP+
1/10GbE ports; PHY-less

1.2. 1st Floor Mini Network Cabinet

TWO 2930F 24G PoE+ 4SFP+ Switch (JL255A) - configured with:-24 RJ-45
autosensing 10/100/1000 PoE+ ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u
Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3at PoE+);
Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only **AND** 4 SFP+
1/10GbE ports; PHY-less

1.3. 2nd Floor Mini Networking Cabinet

THREE 2930F 24G PoE+ 4SFP+ Switch (JL255A) - configured with:-24 RJ-45
autosensing 10/100/1000 PoE+ ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u
Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3at PoE+);
Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only **AND** 4 SFP+
1/10GbE ports; PHY-less

2. Firewalls

Redlands : Fortigate 100F (Configured with VPN & WAN Inter-office link)

3. Scope of Work

- 3.1. Test and repair CAT6 network points (end-to-end from patch to network endpoint) – approximately 30
- 3.2. Test ALL ports on the Aruba switches
- 3.3. Test ALL SFP Transceivers and replace any faulty ones
- 3.4. Test and repair ALL Fibre cabling between switches and between cabinets on each floor
- 3.5. Test and Reconfigure the Fibre Channel network Configurations (with appropriate VLANs) for the following THREE domains/ ranges:
 - 3.5.1. kzngbb.org.za and IP Range – 10.2.3.0
 - 3.5.2. kznlqa.co.za and IP Ranges – 10.9.10.0 (Desktops) & 10.9.11.0 (Servers)
 - 3.5.3. kznera.org.za and IP Ranges – on the 10.2.10.0 (Servers) & 10.2.11.0 (Desktops)
- 3.6. Supply TEN (10) SFP Transceivers : ProLabs 10BASE-SR SFP+, 850nm, 300m (J9150D-C)



HP® J9150D Compatible 10GBase-SR SFP+ Transceiver (MMF, 850nm, 300m, LC, DOM)

J9150D-C

Qty 1

Add to Quote

This HP® J9150D compatible SFP+ transceiver provides 10GBase-SR throughput up to 300m over multi-mode fiber (MMF) using a wavelength of 850nm via an LC connector. It is guaranteed to be 100% compatible with the equivalent HP® transceiver. This easy to install, hot swappable transceiver has been programmed, uniquely serialized and data-traffic and application tested to ensure that it will initialize and perform identically. Digital optical monitoring (DOM) support is also present to allow access to real-time operating parameters. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

Prepared By


S A Charles

Diagrammatic Representation of FC Configuration:

S1 – Switch used to connect SAN, FC Switches and Servers HBAs



FC CORE SWITCHES

C1



C2



MAIN SERVER ROOM – GROUND FLOOR

GF1



GF2



GF3



MINI NETWORK CABINET – 1ST FLOOR

1F1



1F2



MINI NETWORK CABINET - 2ND FLOOR

2F1



2F2



2F3



Workaround

Fibre Cabling Mapping:

S1(A) – GF1(A)

S1(C) – GF2(A)

S1(D) – GF3(A)

Ethernet Cabling Between Floors:

GF3(E24) – 1F2(E24)

1F2(E23) – 1F1(E24)

1F2(E22) – 2F3(E24)

2F3(E23) – 2F2(E24)

2F3(E22) – 2F1(E24)

Reinstated Fibre Cabling Mapping:

Ground Floor – Server Room:

S1(A) – C1(A1)

S1(B) – C2(A1)

C1(A2) – GF1(A)

C2(A2) – GF2(A)

C1(A3) – GF3(A)

1st Floor:

C1(B1) – 1F1(A)

C2(B2) – 1F2(A)

2nd Floor:

C1(C1) – 2F1(A)

C2(C1) – 2F2(A)

C1(C2) – 2F3(A)