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Challenges faced in e-infrastructure at the Ministry of Mines and Energy, Namibia

Monica Maletzky and Kombada Mhopjeni
Ministry of Mines and Energy Namibia (kkmhopjeni@mme.gov.na)

The e-infrastructure at the Ministry of Mines is undergoing considerable restructuring with most of it in the planning phase. One of the main challenges faced is the Local Area Network that is outdated and not capable to handling the volume of data that is transferred in the network. Most of the Network Interface Cards (NIC) on the servers and all related LAN equipment have a capability of 10/100Mb/s and cannot support the volume of data transported over the network. This is not adequate for the need of high end users such as geoscientists who work with large geological, remote sensing and geophysical datasets. Taking the above into consideration the Ministry has embarked on implementing changes to the network. The initiative involves the acquisition of Cisco Layer3 switches that have the capability of transferring large volumes of data, up to 10Gb/s. Subsequent upgrades of the NICs and small form-factor pluggable (SFP) are planned in the near future.
Apart from the internal network, the Ministry's present internet connection is insufficient as the Ministry shares the outbound link with all other Ministries in the Namibian government. The internet provided by the Office of the Prime Minister (OPM), which serves as the government's internet service provider (ISP), to our institution is currently 2Mb/s. OPM has embarked on the upgrade of the network infrastructure. The first phase of the involved the upgrade of the national point of presence (POP) to operate at a capacity of 300Mb/s. This would be followed by the expansion of a fibre network to all the government institutions. Upon completion, the internet performance will be improved as it is envisaged that the Ministry of Mines and Energy's bandwidth will be upgraded to 10Mb/s and hopefully alleviate the current strain on the system. This project is expected to be completed by June 2014. However, due to the challenges that our office is faced with, we have acquired a 4Mb/s internet link for the interim period.
Storage also poses one of our main challenges. The institution lacks sufficient storage and at present some data are stored externally. Similarly, the back-up storage is limited and outdated, as in some instances storage tapes are used. The Ministry plans to acquire a new storage capacity to enable it to locally host all the data. Subsequently this new storage facility will include back-up storage hosted off-site. The acquisition is in progress and the implementation of the new system is envisaged within the near future. The Ministry is trying its utmost to upgrade its e-infrastructure to support the business of the organisation.