RCN Disaster Recovery Backup

Bandwidth Usage Proposal
Prepared by the City of Surprise

Proposal : Use the Regional Community network as a transport for the City of Surprise Disaster Recovery Plan for offsite backup of live data.

Summary : This outline will specifically detail the network, or transport, bandwidth requirements for the City of Surprise Disaster Recovery, and impact on the RCN.

Overview :

Nightly Backup Option

The City of Surprise has determined that current backups of all live systems accounts for approximately 200 - 400Megabit per second over a 10 hour backup window. This estimation covers Bursting up to 400Megabit per second (Mbps). Over the weekends for full backups the backup window takes on average 12 to 24 hours for full backups. There are a few systems which require longer time for backups up to 36 hours. The window for backups starts at approximately 6:00p.m. nightly and most of the day Saturday. During the backup window the RCN would potentially see large amounts of traffic between the City of Surprise and whichever neighboring city that is on the RCN and has an IGA for space for use. Total estimated impact of RCN 10Gbs ring is a max of 0.4 Gigabits per second(Gbps).

Live Copy Backup / Hot Standby Option

The live copy Disaster Recovery option would allow all changes to be immediately be reflected on another server, which would be a clone of the production server, which could potentially take over transactions if needed. Normal day to day operations would be approximately 50-100Mbs worth of traffic copying over bit level changes. This could potentially be increased to 100-200Mbs if transactional data is sent from the City of Surprise to the neighboring Disaster Recovery site in case of a production server failure at the City of Surprise. Total estimated impact on the RCN is 0.2 Gigabits per second.

Overall RCN configuration (total available Bandwidth)

The overall network configuration of the RCN is three distinct main Rings all connected via 10Gigabit per second links. The impact proposed by the nightly backup option is 0.4 Gigabits per second of overall total bandwidth available to the RCN. The live copy / hot standby disaster recover option is approximately 0.1 Gbps to 0.2 Gbps of total available bandwidth on the RCN. This impact would be minimal to the total overall 10Gbps transport ring. Additional hardware considerations from the City of Surprise is that our firewall only permits a transport of 1Gbps through to the RCN and could not impact the RCN higher than we are able to connect. Each edge connection should be 1Gbps per interface and we have a single interface for the RCN to connect to the City of Surprise Traffic Management and the firewall also has a DMZ interface for the City Network.

Based on a scenario for Avondale or the City of Scottsdale being the Disaster Recovery Site for the City of Surprise each neighboring connection would have the same amount of impact to the ring connection. The impact that they would see from the City of Surprise would still be no more than 0.4Gbps, which again should be minimal. The maximum impact, based upon hardware limitations for the Cisco ASA firewall the maximum impact from the City of Surprise would be no more than 1Gbps. Figure 1 is the proposal for the RCN hub connectivity proposal.

Figure 1: