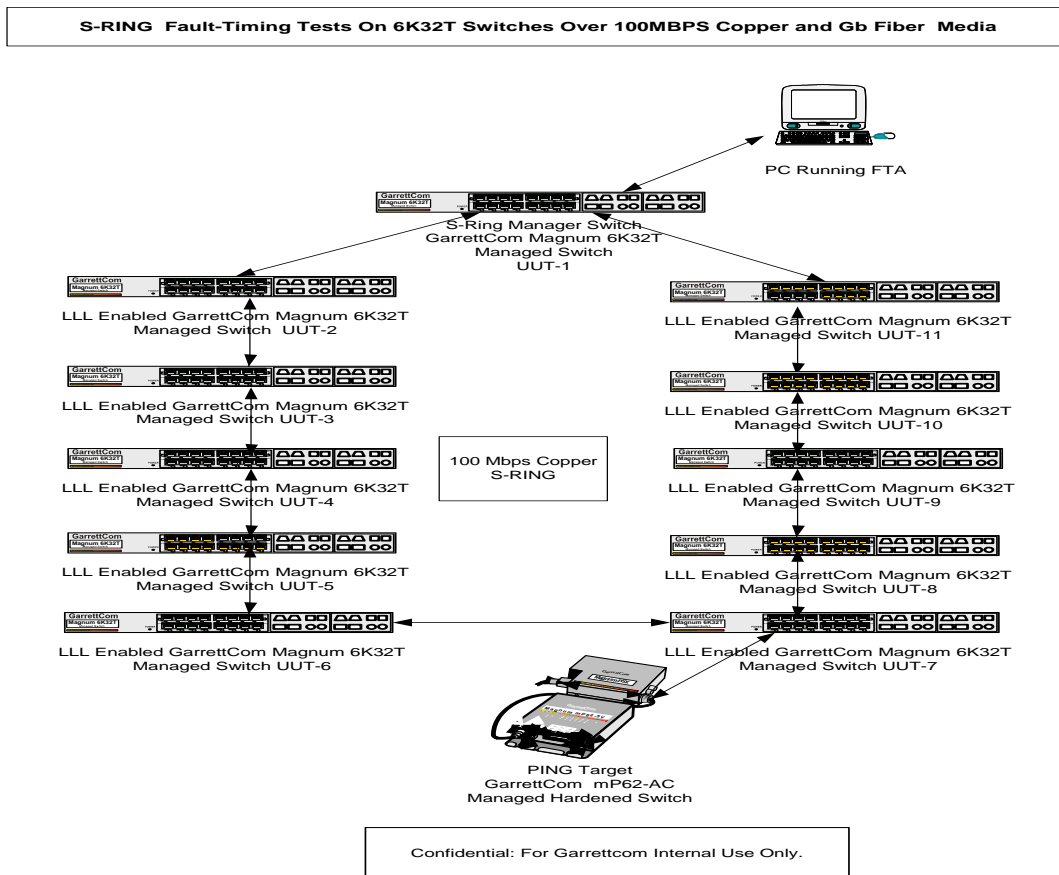


**Objective:** Test S-Ring fault recovery timings in a self-healing LAN using Magnum 6K- Series Ethernet switches in ring topologies of varying sizes and loads. Emphasis was placed on testing for large rings.

**Magnum 6K Switches, S-Ring test setup:**

S-Ring provides major improvements in recovery times over standard STP or RSTP. This S-Ring test set-up was comprised of Magnum 6K32T Managed Ethernet switches configured with the base set of 16 10/100 copper ports and two Gb single-mode fiber GBIC ports. The switches were all running MNS-6K 3.5. See photo at [http://garrettcom.com/images/76\\_switches\\_sring.jpg](http://garrettcom.com/images/76_switches_sring.jpg). All of the self-healing network rings used in these tests were measured for fault times by the Fault Timing Analysis (FTA) tool (\*available free from GarrettCom).

The Magnum 6K32T units under test (UUT) were labeled UUT-1 to UUT-max, and were connected in a ring topology as shown in **Figure 1** below. UUT-1 was the S-Ring manager switch with forwarding and blocking ports. All of the remaining switches were enabled for Link-Loss-Learn (LLL) on the ring-member ports. FTA software was running on a Windows 2000 PC, and an mP62 Switch was used as the ping target.



(Figure-1)

**Results and Conclusions:**

FTA measurements were taken as the ring-break-point was moved around the ring, as the number of attached nodes was increased to 500, and as the network load was varied. The break points specifically included the forwarding port of the Ring Manager. Ten break points around the ring were measured, and an average taken of several breaks. Tests included copper media on 10/100 ports as well as Gb fiber single-mode media. Fault timing numbers are in milliseconds.

<u>Switches in the ring</u>	<u>10/100 copper</u>	<u>Gb fiber</u>
11	335	340
22	350	360
44	410	420
66	490	690

\*Note: for information on FTA, see [http://www.garrettcom.com/techsupport/software/fta\\_instructions.pdf](http://www.garrettcom.com/techsupport/software/fta_instructions.pdf)