Root Cause Analysis

**Event:** Banner Prod Outage, 22 October, 2010.

**Summary:** On Friday October 22, 2010, at approximately 6:00 PM, all instances of ELMO as well as UA Online were unavailable. Technical Services worked with the vendor and identified the problem as a memory utilization issue. A complete reboot of the cluster was accomplished and service was restored at approximately 9:30 PM. Technical Services continues to roll out long term fix.

**Detail:** On Friday October 22, 2010, at approximately 6:00 PM, the Technical Services on-call technician was contacted concerning the availability of ELMO and UA Online. The technician, working with vendor technical support, attempted to restore service by rebooting one of the cluster nodes but services remained unavailable. A complete reboot of the cluster resolved the immediate outage at approximately 9:30 PM.

Technical Services continue to work with the vendor and eventually determined the issue was caused when there was insufficient memory allocated to one of the Unix file system caches. The amount allocated had been recommended as part of a previous operating system tuning analysis performed by the vendor. As a result of this issue, Technical Services is reverting back to the original default setting of "auto" which allows the OS to grow/shrink the size of the cache as necessary as opposed to allocating a specific amount of memory to the cache.

**Action Items and Future Prevention:** As of October 29th, the change has been implemented on 4 of the 5 nodes. Technical Services will continue to roll out change as opportunity allows. The system will continue to be monitored for further problems.