

# Degraded Service Event

**Event Period:** 6/22/2010 17:30 EDT - 24:00 EDT  
**System(s) Affected:** Operations/Partner Test/Testbed  
**Product(s) Affected:** WIST/ECHO/Ingest/Website

## Executive Summary:

Access to all externally visible ECHO systems was lost resulting from a configuration change made to the network load balancers. A new host entry was added to the ECHO load balancers to support ECHO development activities. An initially unperceived error existed in one of the critical configuration files on one of the redundant load balancers. This caused a cascading set of issues which forced a loss of external accessibility. The ECHO system administrators initially resolved the issue to restore system access. However, the initial resolution ultimately resulted in an increasingly degraded level of availability. When this was noted by the ECHO team, action was taken to apply a permanent fix to restore access to the ECHO systems.

## Detailed Summary:

Access to all externally visible ECHO systems was lost resulting from a configuration change made to the network load balancers. At 16:30 EDT, a new host entry was added to the ECHO load balancers to support ECHO development activities. An initially unperceived error existed in one of the critical configuration files on one of the redundant load balancers. The ECHO system administrators initially noted that a failover occurred, at which point a manual failback was performed. An hour later (17:30), the configuration inconsistency caused a similar failover, but with increased ramifications. The two load balancers were in contest for the designation of "master" which caused a loss of access to the ECHO system. To remedy this situation, one of the redundant load balancers was disabled with the intention of fully resolving the issue the following morning.

The mediation previously performed did initially resolve the access issues. However, this resolution lead to a subsequent problem where the network spanning tree began to block several critical legs of the network, slowly cascading into a number of other communication and service issues. Around 11:15pm, it was again noted that access to the ECHO system was sporadic. The ECHO system administrators again diagnosed the problem, verified that the configuration files were correct, and restarted both load balancers. At this point, all system issues were resolved.

## Timeline:

- 6/22/2010 16:30 EDT – SLB Configuration change made to include non-operational host.
- 6/22/2010 17:30 EDT – ECHO system became unavailable
- 6/22/2010 18:00 EDT – "System Unavailable" Status Message sent
- 6/22/2010 18:55 EDT – "System Available" Status Message sent
- 6/22/2010 23:15 EDT – ECHO system availability noted as sporadic
- 6/22/2010 24:00 EDT – ECHO system fully available

**Associated Tickets/NCRs:**

- ECHO\_SA\_TTs – None
- ECHO\_TTs – 12001177 – ECHO and WIST are unavailable to users
- ECHO\_NCRs – None

**Future Mitigation:**

The ECHO team has identified some early warning indicators that there are issues with the server load balancers and is configuring alerts to react to these indicators. This would have allowed the ECHO team to identify the primary and secondary system issues in a more timely fashion. Additionally, the ECHO team is developing a plan for a physical separation between Operational and Development resources. This will reduce the number of changes made to system components which may affect access to the Operational system.