5N-IDF / 6S-IDF Ethernet Stack Issues
Status 2017-03-20

Overview

This document summarizes the Ethernet Stack issue which has been troubling 5N-IDF (now 6S-IDF).

Description

	Err-Disable	**Stack Instability**
Symptom	- Individual ports shut down for ~2-60 minutes - All ports disrupted for ~10s per incident	Multi-hour Stack degradation – many ports *err-disabled,* increasing number of ports quit functioning, entire modules ejected from the Stack (all 48-ports isolated), typically requires cold boot to recover
Count	1500 incidents	(3) multi-day incidents
Date Range	July 2016 -- February 2017	December 2016 -- February 2017: (3) multi-day incidents
Proximate Cause	Traffic floods (which causes the 'all ports disrupted' symptom)	Unknown
Root Cause	Unknown	Unknown

Hypotheses

	Failing Hardware	**Firmware Bug**
Description	Degrading chip in one or more of the Members	Defect in Motherboard firmware specific to one or more of the Member Switches, triggered by specific work-flow common in our environment but not common in Cisco's larger customer base
Pro	Problem followed Stack when it moved to 6S-IDF	Fits the symptoms & analysis to-date
Con	Per TAC, the symptoms do not fit the usual profile for hardware failure	Complex explanation

Costs

- 565 hours (~195 off-hour: evenings, weekends, middle-of-the-night)[1]
- 1.8K in contractor labor
- ~1 week cumulative downtime, mostly during the Friday – Monday window
- 5+ GB data & analysis on *aibsfileprint*
- (7) Cisco TAC cases, Escalation support from Field, contributions from local Cisco account team

Status

- TAC has detailed the next Data Capture Plan, should the issue resurface. I have documented this plan and am prepared to execute it.
- Last incident was 2017-02-22 @ 6:30am
- I closed the (2) long-running TAC cases today

Next Steps

- If & when the issue re-surfaces, I will re-open the (2) primary TAC cases (*Err-Disable* and *Stack Instability*), in an effort to capture the same two TAC techs.
- Produce a sketch for mgmt of what it would take to migrate off this platform and onto something less staff-intensive to maintain.

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[1] Stuart 520 / 175 hours & Cameron 45 / 20 hours