

iSTAR Ultra Ethernet Link Drop Issue and Resolution

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Note: This TAB supersedes TAB SWH-TAB-000010277

BACKGROUND

iSTAR Ultra may experience intermittent network connectivity with certain Ethernet PoE capable switches.

PoE and PoE+ switches constantly inject signature voltage pulses into the Ethernet line--even if the device itself does not support PoE such as the iSTAR Ultra. The signature pulses can interfere with the iSTAR Ultra controller's link negotiation. Various switches behave differently relative to the amount of time an Ethernet link is established before the link drops.

In addition, certain switches can couple differential noise on the Ethernet pairs. This condition has a similar effect to line attenuation. Furthermore, there can be compounding effects with long cable runs, patch panel connections, and cable types.

After testing multiple PoE switches we learned that, even with the PoE option disabled (for managed switches), there can be enough differential noise generated by these switches to cause intermittent network communication problems. In order to resolve these issues, SWH will be updating the GCM boards (resulting in a higher tolerance when used in noisy network environments).

SOLUTION

Most managed PoE and PoE+ switches have the ability to disable PoE either per port, per bank, or for the entire switch. In order to address this network connectivity issue, **we recommend disabling PoE on the ports connected to the iSTAR Ultra controllers.** This configuration will prevent the PoE signature voltage pulse from being sent to the iSTAR Ultra controller.

Connectivity issues are possible even with PoE disabled due to differential noise generated by the switch. The differential noise acts as an Ethernet signal attenuator. Lab data shows that conditions can worsen with the length and quality of the cable run and number of patch panel terminations. The further the switch is away from the iSTAR, the greater the attenuation / signal integrity loss.

In the cases above where there are limited options to change infrastructure, and if the iSTAR still experiences an occasional connectivity issue, configure ports connected to the iSTAR Ultra to 10 or 100Mbps. This will provide more robust connectivity with minimal disruption to the site installation.

If a GigE link is required, then please contact Technical Support for site specific troubleshooting, switch and cable configurations, or possible board replacement.

If you have any questions regarding this **Technical Advisory Bulletin**, please contact Software House Technical Support.

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