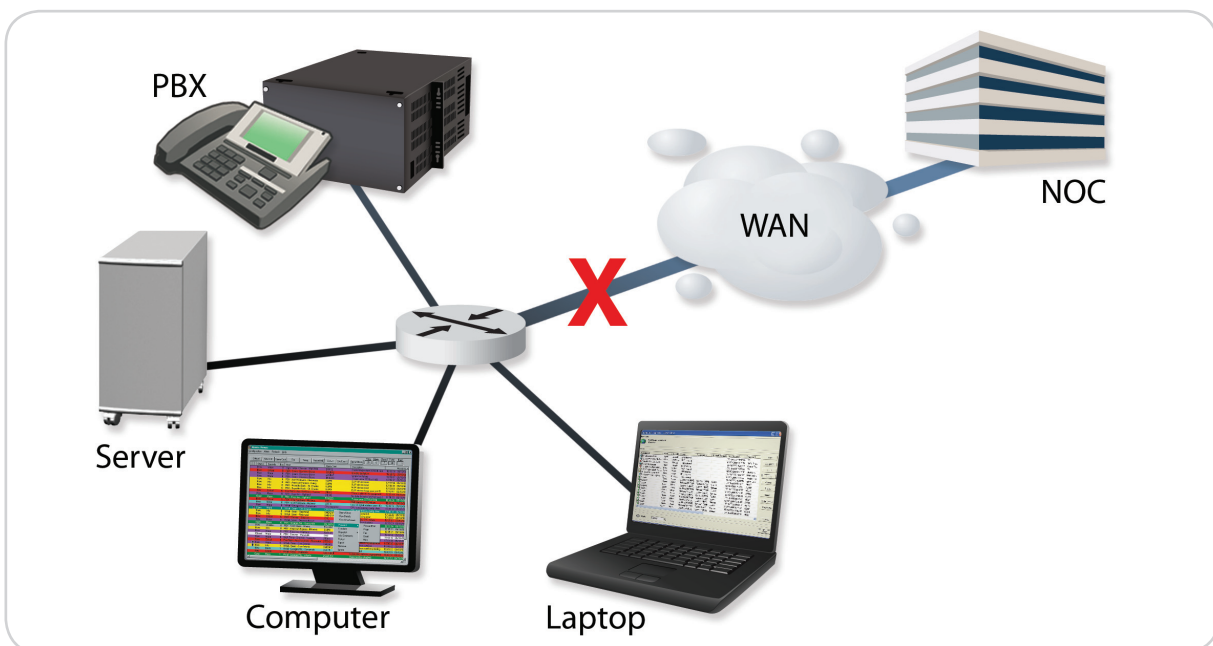# IRISnGEN
Alarm Correlation

IRISnGEN's Alarm Correlation Module Prioritizes Alarms

As networks grow in size and complexity, network management system technicians find it increasingly difficult to cope with the volume of alarm messages produced — even from a single point of failure. In many voice and data networks, failure of a key link causes a storm of alarms that inundates the Network Operations Center (NOC). This makes the task of monitoring the network and diagnosing faults more difficult. The technicians in the NOC face several problems:

- Receiving numerous alarms in a short period of time
- Losing visibility of critical alarms in a barrage of less important alarms
- Failing to identify the initial fault resulting in the inability to prioritize alarms

Stressed technicians whose reaction time to faults increases, may result in important alarms being misinterpreted or overlooked.

IRISnGEN's Alarm Correlation module plays an important role in providing critical information to identify the root cause of a large number of alarms. Whether it is an alarm storm due to a single critical failure or an annoying repetitive condition, Alarm Correlation reduces the total number of alarms presented to technicians. This means less stress, faster reaction time to critical alarms, and more efficient operation of the NOC.

Alarm Storm Example

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Types of Alarm Correlation

Event Pairs — Alarm Correlation is used to associate event pairs and determine if occurences fall inside of a pre-defined window of time. Specific actions are taken for event pairs that fall within the window and for those that do not.

Example 1

Bit or frame slippage on a T1 link is a common alarm condition that occurs, then often clears quickly. The initial alarm signaling a problem is reported, followed by an informational alarm indicating the problem has cleared. IRISnGEN Alarm Correlation can group two alarms together and process a single event rather than multiple unrelated events. Upon receiving the initial alarm, IRISnGEN will look for the clear event within a specified period. If the clear event does not occur, IRISnGEN can trigger an alarm indicating that a more serious condition may exist and route the alarm to the Viewer for the technician's attention. If the clear event occurs within the defined time frame, the condition is ignored, or IRISnGEN triggers an informational alarm. This informational alarm is directed to the Viewer or stored for historical reporting and analysis purposes.

Example 2

Multiple Events — Alarm Correlation is used to associate more than two events. These events may originate from one monitored network element or several. This powerful tool reduces the number of alarms by focusing on the root cause and not secondary events that are spawned.

Alarm Storm — Some incidents in a telecommunication network may generate large numbers of events. This is often referred to as an alarm storm. When a WAN port on a router goes down, each device "behind" the router would lose connectivity or visibility and begin reporting alarms. This results in a storm of event messages and overloads the NOC technicians with so much information that it is difficult to identify what is happening. IRISnGEN Alarm Correlation solves this problem by recognizing that a simultaneous occurrence of alarms from multiple systems could indicate that a common communications path has failed. Using rules-based event correlation, IRISnGEN reports the root cause via a single triggered alarm indicating that the router connection to the WAN fails. Superfluous alarms caused by the devices affected by the outage are not presented to the technicians but are stored for historical reporting and analysis purposes. IRISnGEN Alarm Correlation identifies the root cause of the problem and reduces the number of alarms generated by the failure so the technicians are not overwhelmed by alarms of less importance.

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