Application Note

Product Line: Alarms Management
Product: IRISnGEN and SEB NET-PATH
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Alarms Management Solution for Avaya CM

The Avaya Communications Manager (CM) has a comprehensive collection of alarm events (maintenance objects) and associated command line tests that can be executed to diagnose and clear reported failures. The MedTel Services Alarms Management Solution for Avaya CM utilizes the SEB NET-PATH remote agent appliance and the IRISnGEN application.

Overview

As alarm events occur they are sent from the Avaya CM to the SEB NET-PATH as SNMP traps. The SEB NET-PATH accepts SNMP traps of interest. When an event match occurs in the SEB NET-PATH, the first action is to initiate an automated, interactive telnet session between the SEB NET-PATH and Avaya CM. The objective of the interactive session is to confirm that the reported alarm event is in fact active, and if it is active, execute a command line test sequence that is recommended by Avaya. The goal of the command line test sequence is to automatically clear the reported event, without human intervention. The SEB NET-PATH analyzes the test results and generates a new event that is a concise summary of the current state of the original alarm event. The summary event includes the original event detail, the command line test executed, the status as derived from the test results, a summary of tests executed and associated error codes that are grouped by failed, passed, and aborted tests. The new alarm code assigned to the event is included in the Avaya Remediation Message Library in IRISnGEN. Each IRISnGEN library entry includes specific maintenance object detail from the Avaya documentation which is linked to incoming alarms and made available to responding technicians. This coding scheme allows cleared events to be classified as lower priority items ensuring that Tier 1 and Tier 2 technicians are only working on active issues. Active alarms arrive at IRISnGEN with the first level of diagnostics complete. As noted above, the alarm detail includes everything necessary for a technician to resume troubleshooting where the SEB NET-PATH left off.

Avaya Communications Manager (CM) Management Solution Highlights

The Avaya CM Management Solution is implemented using the SEB NET-PATH appliance and the IRISnGEN Client/Server application. The following sections describe each component's role in the monitoring solution.

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SEB NET-PATH

The SEB NET-PATH supports the concept of a host, which are devices that are monitored by the SEB NET-PATH. Each monitored host is assigned a host library that contains the entire configuration details required to monitor the associated host. There are two host libraries that are made available to support the Avaya CM Management Solution. This includes basic alarm remediation or no alarm remediation. These libraries can be shared across any number of monitored hosts, minimizing the programming effort for new host definitions.

The Avaya CM can be programmed to deliver SNMP based alarm events to any number of destinations. The majority of alarm events, including some Linux server events, are generated from the primary CM application and delivered using SNMP V1 protocol. The Linux server may generate SNMP V2c trap events, depending on how SNMP is programmed. The Avaya CM Host Libraries include over 500 maintenance object definitions that support all of the maintenance objects and their defined event severity for both SNMP V1 and SNMP V2c trap formats. One function of the Avaya Host Library as installed in IRISnGEN is to deliver concise event messages to the operations staff. Each maintenance object definition includes a brief translation of the alarm, plus it reformats the SNMP-based event detail into a single event record which has a uniform look when it is received by IRISnGEN.

Basic alarm remediation is an automated process where selected maintenance object events are passed to the Python script engine of the SEB NET-PATH and a defined sequence of alarm remediation commands are attempted between the SEB NET-PATH and Avaya CM. The Avaya Host Libraries organize the Avaya maintenance objects by groups based on the remediation commands that need to be executed from the Avaya Command Line Interface (CLI). The management solution also includes the flexibility to control, for example, how many times to repeat a defined test or how long to wait between each test.

The basic remediation operation is initiated from the SEB NET-PATH by using user credentials and an IP address contained in the host detail of the SEB NET-PATH database. This process supports multi-level login sequences on port 5023. Once logged in, the SEB NET-PATH executes the requested commands and analyzes the command results returned by Avaya CM. The commands that are executed have the potential of clearing the reported maintenance objects, so the resulting detail that is reported to IRISnGEN includes a new status of "active" or "cleared "based on the results of the remediation. Also included in the event detail are the exact tests that were performed and the resulting status of *passed*, *failed*, or *aborted* and the error code, when available.

The host library covers cases where there are access problems between the SEB NET-PATH and the Avaya CM Command Line Interface (CLI) or if the access credentials are incorrect. There are also cases where specific commands cannot be executed because the system is already running the requested command.

The events delivered to IRISnGEN include an exact account of the originating maintenance object and what happened during the remediation process.

The Avaya Host Library installed in IRISnGEN includes the ability to detect new maintenance objects that are not in the Avaya CM host library. The resulting events contain a breakdown of the trap content that can be used as a basis for new entries into the existing host libraries.

The second host library that is included with the Avaya CM installed on IRISnGEN supports the same level of event monitoring but does *not* include the basic remediation. Maintenance objects are detected and re-formatted identically to events that have passed through basic remediation and include a status message indicating that no remediation was performed.

IRISnGEN

IRISnGEN includes a new Alarm Message Library that complements the events reported by the SEB NET-PATH. Reported events include a preamble comprised of the Avaya maintenance object, the maintenance object severity, and the current state of the event (active or cleared). The balance of the reported event text includes detail from the maintenance object plus a statement of what additional actions were performed by the SEB NET-PATH.

The purpose of the IRISnGEN Avaya Remediation Message Library is to enhance the message content that is displayed for technicians who respond to reported events. Each maintenance object entry in the IRISnGEN Message Library contains excerpts from the Avaya technical documentation that describes the maintenance object and possible corrective actions.

Sample IRISnGEN Viewer Alarm Display

The following graphic is an actual Avaya maintenance object that has been processed by SEB NET-PATH and delivered to IRISnGEN. The Alarm Console display includes two main components for the reported event color coded in red and blue. The box outlined in red is detail contained in the IRISnGEN Message Library. The text in bold is the event preamble that is formulated by the SEB NET-PATH and serves as the IRISnGEN keyword. The supporting technical detail that follows is from Avaya publications for the associated maintenance object.

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The box that is outlined in blue is the maintenance object event as formatted and reported by the SEB NET-PATH. This event detail includes the preamble that is utilized by the IRISnGEN Message Library. Following the preamble is the maintenance object detail that was extracted from the actual alarm.

The last section is the current status of the alarm and a summary of the alarm remediation.

The reported event remained active after the SEB NET-PATH logged in and executed a "test alarm clear" command followed by a "test board 01A05 long" command. The last command attempt returned the "Board not Inserted" message, which is included in the event detail.

END OF APPLICATION NOTE

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