Integrated Network Management

Case Study

Dataduct

The Challenge-
Correlate Alarms with Configuration Change

Concert was already in use in the customer's network management environment reconciling network topology and configuration data. The customer had a need to improve the decision support functionality of their alarm monitoring and handling system. The existing alarm correlation capabilities only used the data available in the alarm feed. The customer believed that if alarms could be correlated against network change data, the alarm resolution time would be significantly reduced. Many QoS alarms, especially in Radio networks, are caused by changes in configuration parameters. If the most recent configuration changes prior to an alarm being raised could be automatically identified, the time to resolution and human effort involved would be substantially reduced.

The Solution-
Concert Network Management Suite

The Concert Solution used 3 components from the Concert Network Management Suite:

- Concert Configuration Management Database
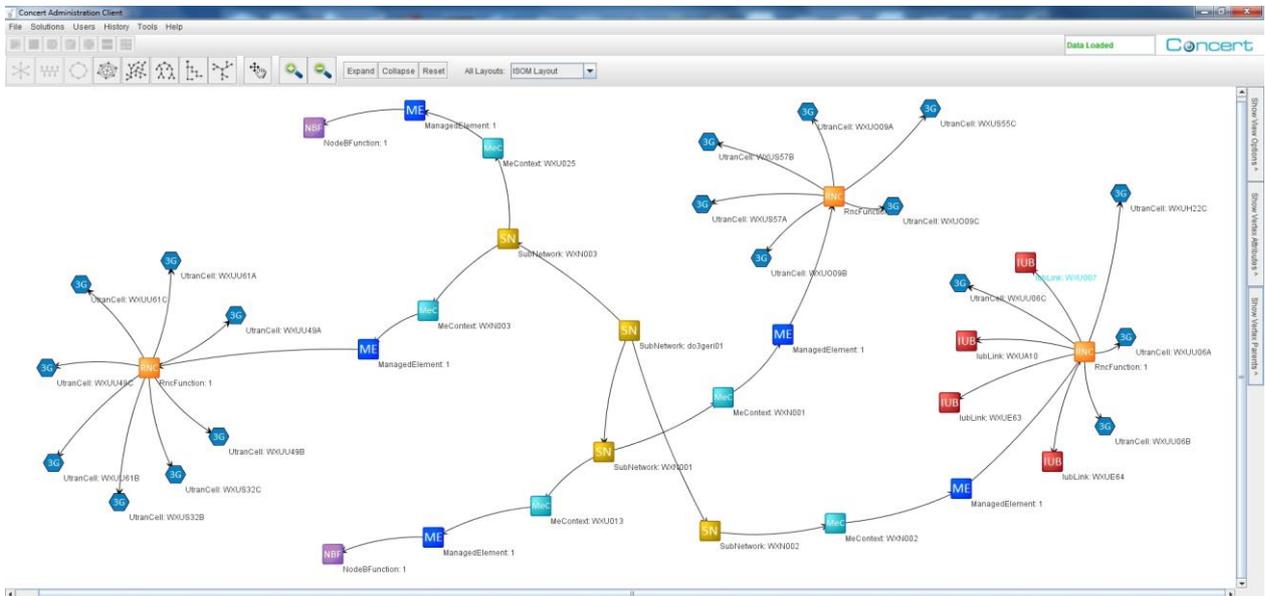- Concert Alarm Viewer
- Concert Topology Browser

Concert provides the ability to monitor an entire network by recording change of state information for each attribute of a Network Element (NE) in its Configuration Management DataBase (CMDB). Topology and Configuration files are processed in a manner to recognize the appearance of new NEs, the disappearance of redundant NEs and the changes to existing NE attributes.

This information was used in parallel with alarms displayed in the Concert Alarm Viewer. Raised alarms specify the Distinguished Name (DN) of a particular NE. The Viewer was used to display a list

of all NE attributes and a complete history of attribute value changes for the selected NE. Business logic rules were defined to refine the set of changes displayed and to further aid the operators in the decision making process.

The portion of the Concert Alarm Viewer which displays the hierarchy of NEs, NE Attributes and NE Value History was used both as a standalone application, and was integrated seamlessly into the customer's existing service assurance application. It can be integrated with most major fault management and service assurance applications. Its features include:

- NE Value History information integrated with Alarm Viewer
- Dynamic Hierarchy of all NEs
- Filtering of alarm data to pinpoint results for specific NEs
- Sorting of all alarm data according to timestamp to see most recent NE related alarms
- Integration of NE Value History with fault management applications

The Concert Topology Browser can also be used to view relationships between related NEs by means of a Network Topology Graph. This provides a graphical overview of a set of NEs and the types of relationships that connect them.

Each NE graphical node can be selected to be shown individually with its related NEs. This allows the user to navigate down through the NE hierarchy while keeping the most relevant NE in view. The user can also choose the number of levels down the hierarchy to be displayed at any time. Other capabilities are:

- Select the hierarchy depth to view NEs
- Choose from a list of graphical topology layouts
- Expand / Collapse individual NEs
- View attributes for any NE when selected
- A suite of graphical options available for NEs, connectors & labels

Benefits
- Average of 3 times faster fault resolution time across all alarm types
- Up to 12 times faster resolution for QoS alarms.
- Significant reduction in the number of trouble tickets raised. Many faults can be resolved by rolling back most recent configuration change without the need to raise a trouble ticket.