

The Science of IT Management

SMARTS™ Command and Control Centre (S3c)



Features

- EMC Smarts™ access to BGP, OSPF and IS-IS Routing topology and events from Packet Design's Route Explorer™ platform.
- Real-time, accurate discovery of routing topology and changes
- Leverages the power and sophistication of Packet Design's deep root cause analysis and other advanced features
- Supports large scale routed networks (No SNMP discovery delays or polling overhead)
- Out of the box integration with EMC Smarts™

Business Benefits

- Maximizes network availability and customer satisfaction by rapidly identifying difficult to diagnose routing problems
- Boosts network performance by detecting and isolating the root cause of Layer 3 network instabilities and anomalies
- Reduces total operating cost by improving productivity of both network resources and network engineering staff
- Verifies and alerts on changes to routing redundancy.

Supported Platforms

- EMC Smarts™ Service Assurance Manager (SAM) and Availability and Performance Managers (AM/PM)
- OSPF, BGP, IS-IS routing protocols

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Packet Design Integration Module (S3c-PIM)

The Challenge

Intelligent monitoring of the IP route plane provides network operators with visibility of data flows, changes in application flows and the reachability of subnets.

Traditional fault management solutions rely heavily on SNMP and telnet-based discovery and polling mechanisms to monitor routing protocols. These solutions are slow to react to dynamic routing changes and in some cases are incapable of capturing or diagnosing routing service outages.

The solution lies with the implementation of advanced route analytics solutions which significantly reduce the number of routing alarms exposed to network operators.

Solution Overview

The S3c Packet Design Integration Module (S3c PIM) enables users of EMC Smarts™ solutions to leverage the power of Packet Design's Route Explorer to discover, visualise and fault find OSPF, BGP and IS-IS routing protocols.

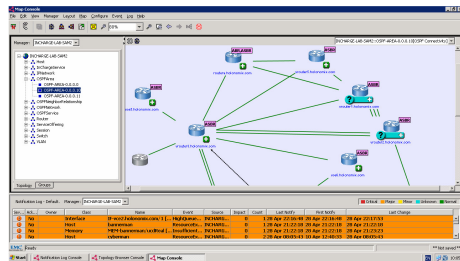


Fig 1: S3c-PIM generated routing topology as viewed from the EMC Smarts™ Global Operators Console

The Packet Design Route Explorer (REX) solution differs from traditional network monitoring tools in that it provides a passive 'route listener' capability that participates in the exchange of link state advertisements (LSA's) with routing devices. Route Explorer reacts in real-time to changes in routing topology or events - without recourse to SNMP and telnet-based discovery and polling mechanisms, employed by first generation monitoring solutions.

Deep API-level Integration

Leveraging the Java API of EMC Smarts™ and the XML RPC-based API of Packet Design's Route Explorer™ platform, the S3c-PIM solution provides instantaneous access to BGP, OSPF and IS-IS routing topology and event updates, as well as 'one click' access to the advanced analysis capabilities of Route Explorer.

The Holonomix Packet S3c Packet Design Integration module (S3c-PIM) also provides a much deeper level of insight into critical routing events such as BGP prefix changes, and routing flaps.

Example S3c-PIM Routing Alarms

- Adjacency - Lost, Established, Flap
- Prefix - Change, Origination Change, Flap
- Route Change
- Routing Event
- Excess Churn
- Peer Change
- BGP Prefix Drought, Flood
- BGP Route Flap
- BGP Lost Peer, Established Peer
- BGP Acquired/Lost Redundancy
- BGP Down to one path, Down To Zero Paths
- Customer Reachability, New Customer PE

Leverage Packet Design's Advanced Routing Analysis

Traditional SNMP-based monitoring solutions are limited to performing rudimentary tasks such as identifying misconfiguration of routing protocols or inferring impacts of routing issues. In contrast, Packet Design Route Explorer is able to provide a much deeper understanding of routing protocol behaviour and react dynamically to routing changes.

Once the integration module has exported accurate, real-time routing topology and event information, the EMC Smarts™ Service Assurance Manager (SAM) solution can do what it does best - Presenting the data intuitively in the form of topology maps and notification event consoles/views in its Global Operations console.

S3c-PIM - Feature Summary

1. Discovers BGP, OSPF, IS-IS neighbours and adjacencies.
2. Exports discovered BGP, OSPF and IS-IS routing topology into EMC|smarts™ Service Assurance Manager - one-off upload and real-time updates based on dynamic changes (does not rely on SNMP/telnet discovery)
3. Forwards routing fault and informational notifications dynamically into EMC Smarts™ Service Assurance Manager for visualisation within the Global Operators console
4. Invocation of the Packet Design user console from with EMC Smarts™ Global Operators console - allowing 'deep drill down' into advanced routing analytics information

Supported Routing Entities

Full 'out of the box' integration with EMC Smarts™ Service Assurance Manager (SAM) and Availability Manager (AM) solutions allows network operators to immediately discover and visualise OSPF, BGP and IS-IS routing topological entities including:

OSPF Area	IS-IS Area
OSPF Service	IS-IS Service
OSPF Network	IS-IS Network
OSPF Neighbour Relationship	IS-IS Neighbour Endpoint
OSPFVirtualLink	IS-IS Interface
AutonomousSystem	IS-IS Adjacency
BGP Service	
BGP Session	