

# EMC Ionix Network Protocol Manager

## Part of the Ionix IT Operations Insight Family

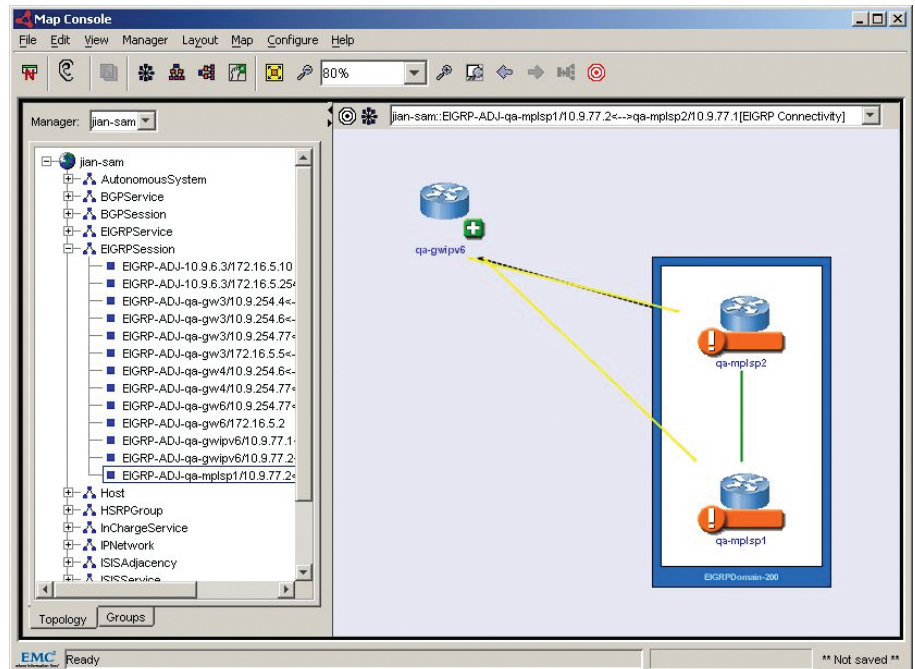
### The Big Picture

- Enhances availability of IP networks through deep discovery of the logical routing topology, monitoring of routing adjacencies, and explanation of their failures
- Provides a unique visualization tool for protocol entities and their relationships
- Goes beyond passive monitoring to pinpoint root-cause problems in routing protocol domains
- Detects configuration problems in routing infrastructures more easily due to improved identification of configuration problems
- Speeds mean-time-to-repair by correlating alarms in the routing protocol infrastructure with problems in the IP network
- Supports the following routing protocols: Open Shortest Path First (OSPF), Border Gateway Protocol (BGP), Cisco's Enhanced Interior Gateway Routing Protocol (EIGRP), and the Intermediate System-to-Intermediate System (IS-IS) Protocol
- Extends management of the MPLS control plane by managing the routing protocols that support MPLS-based services
- Enhances OSPF and BGP support for virtual routers (including Juniper ERX)
- Enhances security by encrypting and authenticating network-device communication using the Secure Shell (SSH) protocol
- Simplifies management through new capabilities that can differentiate duplicate or overlapping IP addresses

Routing protocols provide the foundation of operation of today's complex IT environments. The sheer number of events generated by routing protocol installations makes intelligent management a high priority.

EMC<sup>®</sup> Ionix<sup>™</sup> Network Protocol Manager (formerly Smarts<sup>®</sup> Network Protocol Manager) works with EMC Ionix IP Availability Manager and EMC Ionix Service Assurance Manager to deliver the actionable information you need to quickly resolve routing issues caused by misconfigurations, software problems, and connectivity issues. Although some tools passively monitor routing protocols to construct end-to-end paths, Network Protocol Manager provides insight into routing process and adjacency failures, pinpointing root-cause problems in routing protocol domains and correlating these events with problems in the underlying IP network.

Network Protocol Manager provides a unique visualization tool for understanding the configuration of routing protocols in a network. Users can view the membership and structure of entities, such as OSPF areas and BGP autonomous systems, and easily locate routers providing critical functionality, such as BGP speakers.



Like all Ionix (formerly Smarts) solutions, Network Protocol Manager leverages the EMC Common Information Model<sup>™</sup> to model the routing protocol domain, and EMC Codebook Correlation Technology<sup>™</sup> to pinpoint the root cause of the alarms it generates. The unique cross-domain correlation capability enables Ionix to correlate routing protocol domain events with network connectivity failures, diagnosing the physical network failure as the root cause, and routing protocol failures as impacts of that root-cause problem. For example, Network Protocol Manager detects failed routing sessions, identifies them as symptoms—not underlying physical failures—and correlates them to the true root-cause problem that caused the failed routing sessions.

## Network Protocol Manager features

Working with IP Availability Manager and Service Assurance Manager, Network Protocol Manager performs the following functions:

- Uses IP Availability Manager to populate initial Network Protocol Manager topology and forward relevant IP Availability Manager events to Network Protocol Manager
- Discovers devices running an instance of the BGP, OSPF, EIGRP, or IS-IS routing protocols and the interfaces participating in routing updates
- Discovers BGP, OSPF, EIGRP, and IS-IS neighbors and adjacencies
  - For OSPF, discovers OSPF networks, areas, device memberships, and any virtual links—ABRs, ASBRs, DRs, and BDRs
  - For BGP, discovers autonomous systems, their memberships, and IBGP and EBGP links
  - For IS-IS, discovers Level 1 and Level 2 routers, IS-IS areas, and adjacencies
  - For EIGRP, discovers the EIGRP logical domains and routing adjacencies
- Analyzes the router configurations for errors (for example, neighbors on the same OSPF network with different MTU values configured on their OSPF interfaces)
- Reports adjacency failures for routing protocol neighbors
- Reports “soft” failures when a routing protocol process is down
- Processes traps and syslogs for alarms and to trigger rediscovery
- Correlates failures in IP Availability Manager (Layers 1 and 2) to the appropriate impact in Network Protocol Manager (For example, a cable failure between two OSPF peers would generate an impact of “OSPF\_adjacency>disconnected.”)

## Technical specifications

**System requirements:** EMC Ionix Service Assurance Manager 7.1, and IP Availability Manager 7.0

**Operating systems supported:** Solaris 9 and 10; HP-UX 11i; Windows 2003 Server; Red Hat Linux AS 3.0 and 4.0; and VMware® ESX Server™ 3.0 and 3.5

## About EMC

EMC Corporation is the world’s leading developer and provider of information infrastructure technology and solutions that enable organizations of all sizes to transform the way they compete and create value from their information. Information about EMC’s products and services can be found at [www.EMC.com](http://www.EMC.com).



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### Take the next step

To learn more about Network Protocol Manager and how EMC Ionix (formerly Smarts) solutions can positively impact your business and IT operations, contact your local EMC sales representative, or visit our website at [www.EMC.com](http://www.EMC.com).