NMX Digital Service Manager™

Product Description

Harmonic’s NMX Digital Service Manager™ (NMX) is a definitive video network management solution. NMX encompasses a powerful set of tools for monitoring and managing compressed digital video and audio services as well as the systems through which these services flow. As a result, operators can run their technical infrastructure in a way that parallels their business – as a series of revenue-generating services, rather than as a set of discrete hardware components.

NMX offers a simple and intuitive interface for creating and modifying channel lineups in addition to setting their parameters, whether encoding or rate-shaping. The underlying equipment is automatically reconfigured to accommodate the new operating parameters. Status for both services and hardware, including alarms, is passed through to the top level ensuring that problems are quickly detected and resolved. Redundancy is automated.

Adding, reconfiguring, or removing services and/or equipment is fast, easy, and error-free with NMX. Templating, wizards, consolidated data views and powerful cut-and-paste functions are available for both service and system modifications.

NMX is designed for 24x7 operation and can run on a single computer or be distributed across multiple servers for maximum availability. Service and configuration data are stored in a reliable, industrial-strength database. NMX provides multi-level security, ensuring full control of operational privileges. In addition, a comprehensive audit trail and consolidated alarm log pinpoint hardware or operational problems.

NMX is highly scalable and extensible, enabling it to grow in tandem with the environment it supports. NMX’s client/server architecture supports both the centralized management of even the most geographically distributed environments, as well as the remote management of a centralized environment, all using standard TCP/IP LAN/WAN technologies. The use of standards-based interfaces enables NMX to interconnect with other subsystems, including Conditional Access, Automation and Scheduling. As the managed environment grows in scope and scale, NMX can distribute its processes across multiple PC platforms, as necessary, providing inexpensive raw processing power.

Moreover, through historical analysis, NMX offers detailed analysis of bandwidth usage and alarm behaviors used to identify system-wide trends and improve overall stability.

Features

- Service-oriented to work the way operators work
- “Input to output” GUI and functionality
- Template and wizard-based system setup
- Scalable to any size system
- Centralized management of geographically distributed systems
- Distributed processing for high availability
- Flexible redundancy
- Powerful automation interface
- Internal EIS
- Internal DPI server supports SCTE standard digital program insertion cue message injection
- User administration/security/audit trail tools
- Extensible third-party device monitoring using GPI closures and SNMP
- Historical and statistical analysis of bandwidth and alarm behaviors
- Advanced automation and scheduling engine
NMX is available in three different editions:

- **NMX Desktop**: Basic package for a single client
- **NMX Standard**: Standard feature set included
- **NMX Enterprise**: Comprehensive package with additional features available

### NMX Edition Comparison

<table>
<thead>
<tr>
<th>Feature</th>
<th>NMX Edition</th>
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<tbody>
<tr>
<td></td>
<td>Enterprise</td>
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<tr>
<td>Network Control &amp; Provisioning</td>
<td>√</td>
</tr>
<tr>
<td>Redundancy Support (1:1, N:1, N:M)</td>
<td>√</td>
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<tr>
<td>Basic Alarm Package</td>
<td>√</td>
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<tr>
<td>(Pending alarms, history alarms, status colors on icons)</td>
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<tr>
<td>PSI/SI Package (PSI/SI table support, private descriptors)</td>
<td>√</td>
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<tr>
<td>CAS Package (Conditional Access support)</td>
<td>√</td>
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<tr>
<td>Advanced Alarm Package (Advanced alarm configuration, alarm forwarding, consolidated alarm viewer)</td>
<td>√</td>
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<tr>
<td>Security Management Package (Full user administration tools, audit trail)</td>
<td>√</td>
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<td>Automation Server Package (Access the automation server and scheduling engine)</td>
<td>√</td>
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<tr>
<td>NMX Third-Party Package (Monitoring of third-party platforms using GPI contacts or SNMP)</td>
<td>√</td>
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<tr>
<td>Statistics Package (VOD utilization statistics, alarm statistics, inventory reports)</td>
<td>√</td>
</tr>
<tr>
<td>Distributed Management Package (Monitoring and control of geographically distributed systems)</td>
<td>√</td>
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<tr>
<td>NMX PC Fail-Safe Package (NMX 1:1 redundancy, auto-restart)</td>
<td>√</td>
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<tr>
<td>Maximum number of clients</td>
<td>25</td>
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</tbody>
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### Applications

- Satellite
- Centralized or distributed cable
- VOD
- Terrestrial
- Telco
- Network distribution
- Backhaul
- Network PVR

### User-friendly

- Templates at device and system level
- Cut, copy, and paste functions
- Wizard-based setup
- Batch driven automation tools
- Spreadsheet tool

### Service Management

- Simple template-based service setup
- Extraction of service information
- Service level or PID level manipulation
- Service tracking across topology
- Dynamic PSI/SI table generation
- Completely flexible private descriptor generation
- Virtual service management
- Service-oriented alarms and analysis
- Program suspend/resume

### Topology Management

- Graphical view of network and devices
- Geographical background maps
- Multi-level maps
- Component backplane views
- Cut, copy and paste replication
- Template-based topologies
- Online and offline operation
**Configuration Management**
- Device, module and port level configuration
- Consolidated views for easy setup
- Template-based configuration

**Fault Management**
- Manual or automatic redundancy switching
- Router-based, path-based, or IP-based redundancy mechanisms
- GPI (contact closure) device monitoring tool
- SNMP-based monitoring of third-party hardware
- Alarm configuration
- Monitoring and alarm logging, highlights affected services and hardware
- Standard PERL scripting tool for automatic emails, pages or SMS messaging on fault conditions
- SNMP-based alarm forwarding agent with alarm filtering

**Security Management**
- Full user administration tools for multi-user environments
- Multi-level access privilege
- Access can be geographically limited
- Lockouts to manage secure modifications in multi-user operations
- Comprehensive audit trail

**Table Support**
- MPEG-2, DVB, ATSC compliant
- PSI/SI generation
- Flexible descriptor generation
- Accepts PSI/SI from external sources

**Conditional Access Support**
- DVB Simulcrypt V3
- OpenCAS
- Full CAS redundancy support
- Internal EIS

**Traffic/Automation/EIS Interfaces**
- Advanced scheduler with time line user interface
- Easy external triggering of user-defined service/configuration states
- DVB EIS-Muxconfig support
- DVB SIMPCOMP-MUXNOTIFY support
- Internal EIS
- Full XML-based service API
- Internal DPI server supports SCTE standard DPI cue message injection

**Software Management**
- Storage and distribution of software for easy update across distributed networks
- Background download

**NMX Fail-Safe Management**
- Automatic 1:1 NMX server redundancy
- Auto-Restart capability

**Monitoring Solutions**
- Integrated with multiple monitoring solution vendors for an integrated headend
- Real-time correlation with multiple MPEG-2 analyzers
- Control and integration with a wide array of decoders

**Statistical Analysis**
- Statistical analysis of bandwidth utilization for VOD systems
- Statistical analysis of alarm behavior
- Inventory and device status reports

**Standards-Based**
- SNMP
- XML
- TCP/IP
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