

# Device Provisioning Manager

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## Flexible, dynamic device provisioning for an all-IP future

As communications service providers evolve into next-generation operators (NGOs), the need to perform automated provisioning of customer premise equipment (CPE) that accesses the IP network is required. NGOs need to rapidly provision multiple subscriber services in a multi-vendor, multi-device type environment, by assigning different classes of services, per service and per subscriber. This provisioning activity needs to be performed by dynamically generating device configuration files which are automatically delivered to the CPE device, regardless of access protocol.

### Complete CPE Device Management

Sigma Systems' Device Provisioning Manager provides NGOs with device firmware management capabilities and CPE service/device troubleshooting. The solution provisions modems, MTAs, Set-Top Boxes, Gateways and SIP Devices, such as ATAs and IP Phones, for High-Speed Data, Internet, Telephony, Video, and Home Networking services.

### Comprehensive Provisioning Support

The Device Provisioning Manager streamlines many customer service representative and field technician operations through its supports for a number of provisioning methods including pre-provisioning, off-line, tech-install and self-install. The solution also provides in-depth monitoring and troubleshooting of the service-related network topology.

### High Performance Device Provisioning Platform

The Device Provisioning Manager's activation server can be centrally located with configuration and control over multiple distributed provisioning servers, which are located closer to the customer premise for optimal performance and latency requirements. The centralized activation server provides GUI based configuration and deployment tools, firmware management functionality, troubleshooting and a BSS Integration API. In addition, the server interfaces to an external Oracle database to centrally store all service topology, subscription and configuration information (including IP address history). Provisioning operations can be performed through simplified role-specific Web consoles while processes are implemented through customizable business work flows. The Device Provisioning Manager uses a standards-based XML API, allowing integration into external OSS or BSS systems and can also be deployed as a standalone product with (optional) backup servers for carrier class operation.

The Device Provisioning Manager is unique in its ability to perform device provisioning 'out-of-the-box' and with the appropriate platform and adapter licenses. The DPM environment can also be integrated into Sigma Systems' award winning Service Management Platform (SMP) for the fulfillment of individual, converged, and bundled advanced IP services to any device, anywhere, at any time.

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## IPv4 and IPv6 Address Management

The Device Provisioning Manager supports geographical/network topology requirements with carrier class DHCP IPv4 & IPv6 address management that includes the creation of IP address blocks, pools and scopes; option sets, and more based on different device types and vendors, package/QoS, etc.

The Device Provisioning Manager supports a number of IPv4 address conservation strategies such as dual stack-lite for simplified IPv4 encapsulated in an IPv6 packet transport and 6RD (Rapid Deployment) for the streamlined transfer of IPv6 packets over the IPv4 network. For IPv6 networks, the Device Provisioning Manager supports dual stack for concurrent IPv4 and IPv6 and 6PD (Prefix Delegation) to assign a network address prefix to a subscribers network/site.

## How it Works

A Device Provisioning Manager installation consists of one or more servers running service activation core, Web server operations, assurance monitoring and provisioning components (DHCP, TFTP/HTTP, DNS redirector, ToD, SNMP, & SIP functions). The Device Provisioning Manager can be deployed as a standalone product operating on a single server with a redundant server for failover purposes for a small subscriber base. For larger subscriber bases, the Device Provisioning Manager can be distributed among several servers, where the core installed platform functionality and provisioning servers are in separate servers, while still maintaining centralized definition and control from the core activation server.

## Hardware Requirements

The Device Provisioning Manager’s system requirements vary by the type of deployed environment; some deployment scenarios include standalone, where integrated servers for smaller subscriber-base installations; failsafe, which is redundancy mode for automated backup operation, and distributed deployment, which supports a main activation server with distributed provisioning servers and database server. A separate database server is recommended regardless of installation scenario.

<b>Operating System:</b>	Sun Solaris 10 or RedHat Linux
<b>Processor:</b>	Solaris Sun Opteron Dual Core Processor with 4 MB L2 cache or Intel X86/32 & 64-based hardware
<b>Memory:</b>	8 GB RAM (minimum)
<b>Hard Disk:</b>	Two 36-GB drives (preferably SCSI running with hardware mirroring & redundancy)
<b>Browser:</b>	Windows Microsoft Internet Explorer 8.0 or Firefox 2.0 (or higher)

## About Sigma Systems?

Sigma Systems is the proven global leader in delivering advanced IP service fulfillment solutions. Cable service providers around the world use our solutions to deliver a rich consumer experience through communications and entertainment services—over any access technology to any device. Our award-winning solutions include order management, provisioning and activation, and active mediation of residential and business VoIP, broadband, video, and triple and quad-play services. Sigma Systems is entrusted for service transformation and innovative solutions with market-leading expertise for the delivery of today’s and tomorrow’s new services.