



PowerVu Network Center Product Overview

Transmit video, audio, and data more securely to a large receiver population with the Synamedia® PowerVu® Network Center. Synamedia PowerVu Network Center is the core of the Synamedia PowerVu product portfolio, which is designed to meet the digital content distribution needs of programmers, private networks, other network operators, and individual users. It's a sophisticated, highly reliable, easy-to-use system that provides network management, improved security, decoder management, and advanced revenue protection.

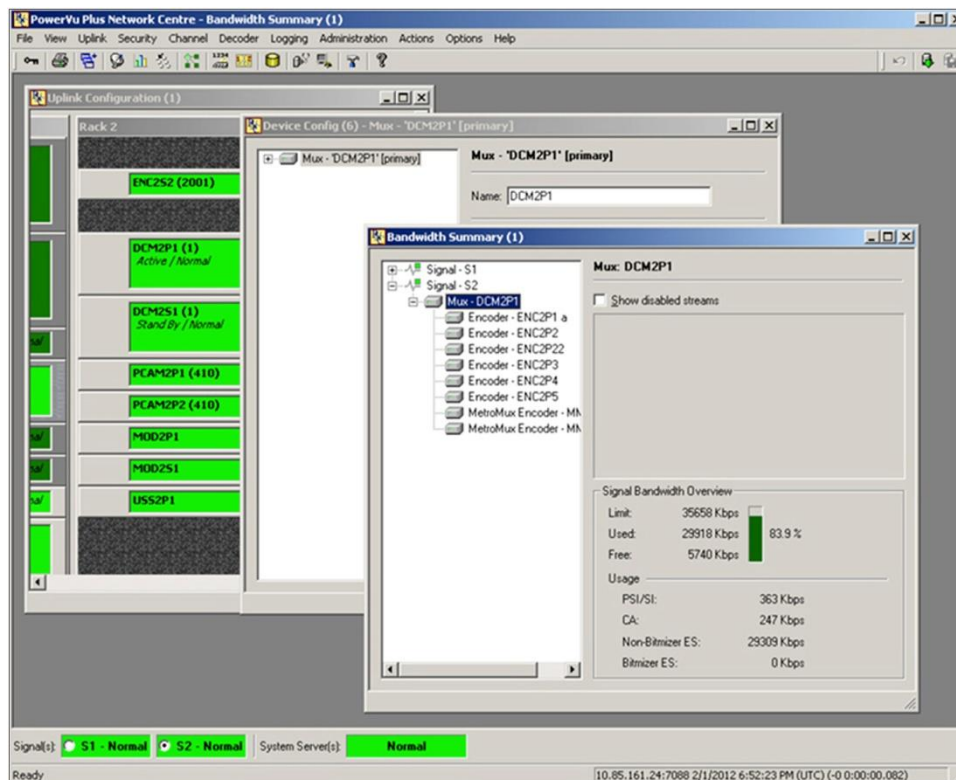
Synamedia PowerVu Network Center Release 15.5 comes with three application modules:

- An Integrated Receiver/Decoder (IRD) management focused module with a dedicated IRD database including web UI.
- A Network Management System (NMS) and Conditional Access System (CAS) focused module.
- New: PNC integrated Live Event Controller Application option.

Network Management

Synamedia PowerVu Network Center provides control of all Synamedia PowerVu video, audio, data, and other ancillary Synamedia PowerVu services of your uplink (Figure 1). It allows you to configure and control your Synamedia PowerVu network devices, including Synamedia PowerVu encoders, multiplexers, and advanced modulators.

Synamedia PowerVu Network Center NMS Sample Screen



Security

The Synamedia PowerVu Network Center system gives the content owner full control over what transmitted content the Synamedia PowerVu IRD user can access. Synamedia PowerVu Conditional Access (CA) and encryption help ensure that your transmissions are highly secure and the Synamedia PowerVu Network Center offers a reliable, commercial security system. An AES128 based encryption option is offered in combination with the PowerVu D9800 IRD.

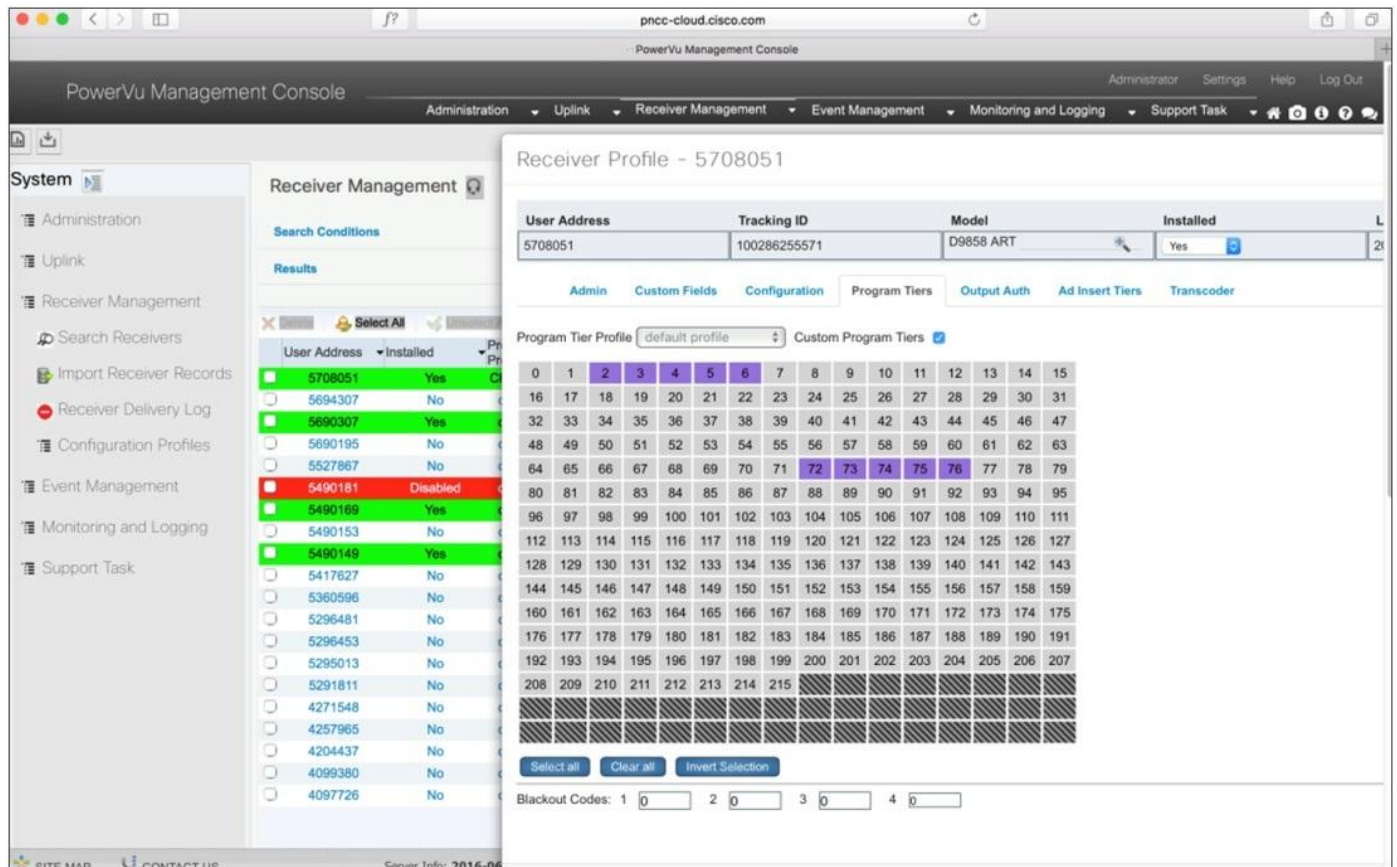
Decoder Management

With the Synamedia PowerVu Network Center Release 15.5, you can use the Synamedia PowerVu Management Console to control where your information is being received (Figure 2). The Synamedia PowerVu Network Center

addresses all Synamedia PowerVu receivers in the field. You have all of the information necessary to address Synamedia PowerVu decoders for specific service authorization.

Synamedia PowerVu Network Center 15.5 provides a PNC Event Management system which allows for centralized event management across multiple PNC systems. This for architectures with the Centralized IRD management server in place. The feature also brings a UI in the PNC Management console with enhanced views like calendar view, Event list view, Time Line view (new) with the ability to extend and change events on the fly from the UI. The system supports Multi-server IRD data management capabilities allowing the user to keep the IRD data records in sync between multiple servers in various locations. PNC 15.5 continues to bring UI usability enhancement in the PNC Management console to help with the day to day IRD operations.

Synamedia PowerVu Management Console: IRD Management Web-UI Sample Screen



Synamedia continues to target the single server deployment model, allowing for installation of both applications on a Sun Server (T4-1 only) with now the option to install all applications on x86 compute platforms.

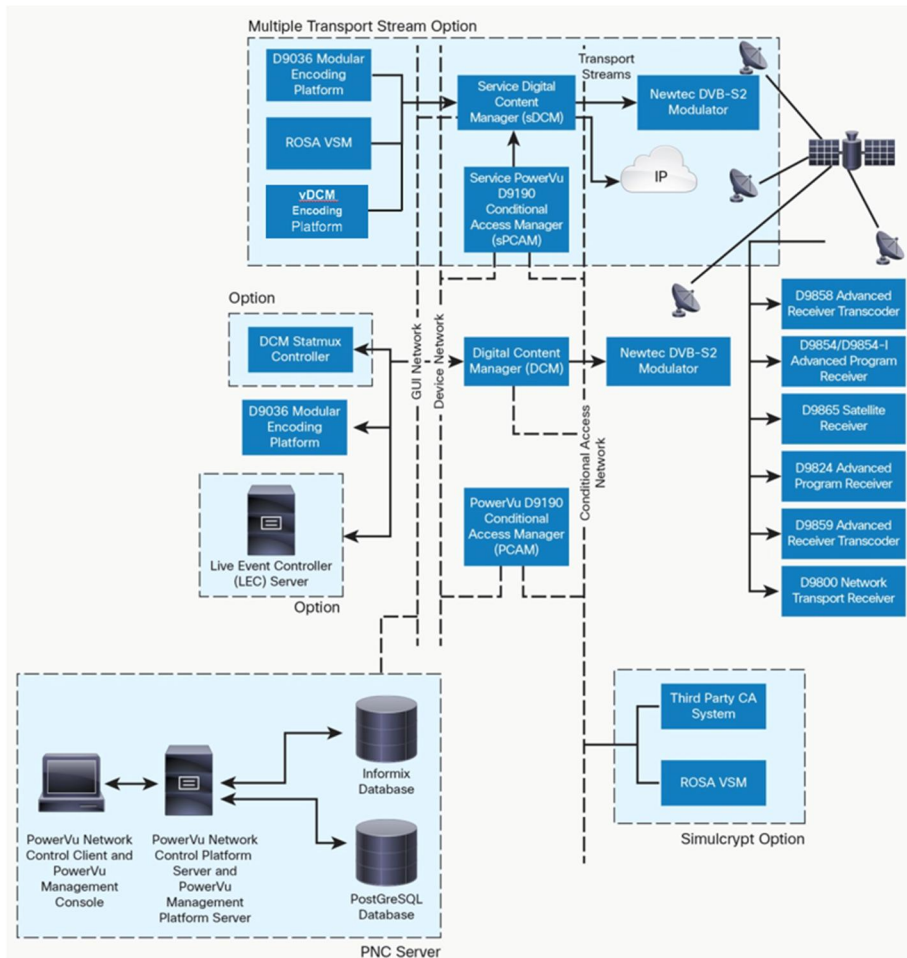
Key Features and Benefits

- Support for Synamedia DCM (Digital Content Manager) as Mux and Scrambler.
- Support for Synamedia vDCM (Virtual Digital Content Manager) as multiplexer and Scrambler.(PNC15 and up)
- Support for Synamedia PowerVu D9190 Conditional Access Manager
- Standard-Definition (SD) and High-Definition (HD) MPEG encoder support (Synamedia Modular Encoding Platform D9036)
- Advanced Video Coding (AVC) encoder support (Synamedia Modular Encoding Platform D9036)
- Support for Synamedia DCM Unified Rate Control Statmux System with D9036
- Compatible with vDCM encoding platform with optional vDCM management through VSM (Video Service Manager).
- PowerVu Encryption Support for HEVC encoded content (PNC13.5 and up).
- MPEG-2 and Digital Video Broadcasting (DVB) compatibility
- Ability to send email alerts for user-defined system alarms
- Reliable automatic redundancy switching upon failure of devices
- Support for digital program insertion SCTE-35 messages
- Optional ad insertion tier support for targeted SCTE-35 delivery
- Control over all Synamedia PowerVu decoder authorizations
- Broadcast flag to control unwanted content distribution
- Control of program receiver and Multiple Decryption Receiver (MDR) analog and digital decoder outputs
- Effective management of bandwidth allocation
- Expandable N:M encoder configuration with $N \leq 18$ and $N+M \leq 36$ (Synamedia Modular Encoding Platform D9036)
- Advanced decoder searching capabilities
- User-friendly Web GUI for the IRD management functionality
- Advanced IRD support functionality in the new IRD management Web GUI
- Enhanced IRD records import and delete functionality in the IRD management Web GUI

- Added support for Newtec M6100 DVB-S2 modulator (PNC12 and up)
- Added support for ingest and streaming of IP based content on Synamedia PowerVu Digital Content Manager (>=PNC12)
- Enhanced support to up to 12 audios per virtual channel
- Automated backup and manual restore functions on Synamedia PowerVu Network Center server with USB and Network backup media
- Synamedia PowerVu MetroMux software (for remultiplexing of HEVC, MPEG-2 and MPEG-4 part 10 H.264 video, audio, and other services)
- Network management and decoder control integrated with conditional access and encryption in an all-in-one system
- Decoder database API
- Optional Data Replication Software for local server redundancy with enhanced multi server IRD data management capabilities for Site Disaster Recovery
- Visual IRD management
- Optional Synamedia D9858, D9859 and D9800-MS Advanced Receiver Transcoder control
- Optional but newly integrated Synamedia Live Event Controller
- Optional Simulcrypt support
- Optional uplink controlled IRD On Screen Display support
- Optional Satellite Disaster Recovery support
- Integrated Event Scheduling
- Automated MSK key rotation options (PNC13.5 and up)
- Support for flexible DCM card configurations if PNC only needs to manage encryption on the created transports; includes support for multitransport stream options out of the DCM (PNC 13.5 and up)
- Integrated support for D9800 IRD productline

Figure 3 illustrates the Synamedia PowerVu distribution system.

Synamedia PowerVu Multichannel Distribution System



Product Specifications

Synamedia D9800 Network Transport Receiver General Product Specification

System management

- Industry standards: MPEG-2 DVB, AVC (H.264), and HEVC
- Commercial conditional access
- Scrambling: DES, DVB or Simulcrypt
- Automatic redundancy: N:M with $N \leq 18$ and $N+M \leq 36$
- Number of signals: 4 (with traditional DCM MUX architecture)
- Encoder control (D9036)

	<p>Multiplexer control: ASI and GbE interfaces</p> <p>Synamedia PowerVu data support: synchronous and asynchronous</p> <p>Advanced modulator control</p> <p>Synamedia PowerVu subtitling and Vertical Blanking Interval (VBI) support</p> <p>DVB subtitling and DVB WST support</p> <p>Digital Program Insertion (DPI) support</p> <p>Email alerts for alarms</p> <p>Data replication: optional</p> <p>Network Time Protocol synchronization</p>
<p>System control functions</p>	
	<p>Program and event scheduling</p> <p>Bandwidth management</p> <p>MetroMux software</p> <p>Password privilege system</p> <p>Diagnostic logs</p> <p>Transaction logs</p> <p>Automatic and manual database backups</p>
<p>Platform support</p>	
	<p>Client/server architecture</p> <p>Server: Netra T4-1 and x86 compute platforms, Client interface: Windows 7 and up</p> <ul style="list-style-type: none"> o Minimum x86 Config: Single 2.4GHz 4core CPU, 2x32Gb Mem, Dual 300Gig Hard Drive Storage, RAID, <p>2 Ethernet ports, CentOS/RedHat 7.4</p> <p>Multiuser remote access</p> <p>Remote access: LAN, satellite modem, ISDN or basic telephone service</p> <p>Simple Network Management Protocol (SNMP) interface for monitoring: optional</p>
<p>Decoder control functions</p>	

- Decoder database: 250,000
- Entitlement Control Message (ECM) and Entitlement Management Message (EMM) generation
- Tier assignment: 216
- Blackout and spotlight codes
- Fingerprint trigger
- Broadcast flag (ATSC A/65B)
- Force tuning
- Homing channel
- Remote control outputs
- Service replacement: scheduled, CA, and cue-trigger based
- Decoder output controls
- Satellite code download to decoders
- Decoder lock-out of front panel
- Decoder group and search capability
- Visual IRD management, in-band control
- Live Event Controller (optional)

Key Synamedia PowerVu Network Center Options

Synamedia Live Event Controller

The Synamedia Live Event Controller (LEC) server is used by programmers and broadcasters to perform uplink-commanded, dynamic channel tuning for receivers. It provides the capability for programmers and broadcasters to manage the access rights of services based on event groups. Users define the event groups, which can be used as decoder search criteria. Decoders can be tuned to events with dynamic start and end times through a button push. This feature provides users with an extra level of flexibility in managing services.

The Synamedia LEC option is now integrated in the PNC application and server.

The Synamedia PowerVu Network Center monitors the LEC application. Network services and event group data are automatically coordinated between the Synamedia PowerVu Network Center and LEC. Channel tuning events are imported through an easy-to-use web interface and are triggered based on time or through manual software based button triggers. Event control data can be targeted to different groups of receivers. Receivers with LEC support are tuned to a designated channel based on the event control data instructions.

Transcoder Control

The Synamedia PowerVu Network Center can be enabled to provide profiles allowing the remote configuration of the IRD transcoder models in the field. Those profiles can be applied to individual and groups of IRDs. Parameters supported are HD/SD output, bitrate, GOP, AFD conversion,...

Ad-Insertion Tiers

The Synamedia PowerVu Network Center can be enabled to provide control over the DPI processing at the IRD. This feature provides the PNC Operator the tools to selectively authorize individual or groups of PowerVu IRDs for specific SCTE-35 messages. This includes the ability to segment the population of IRDs, allowing some program insertion avails on some IRDs while excluding them from others.

Warm-Standby Server and Data Replication: Revenue Protection

For installations without duplicate uplink network sites, Synamedia PowerVu system users can choose to install a backup Synamedia PowerVu Network Center for their uplink network to guard against failure scenarios. This warm-standby server uses data replication technology to help ensure that the redundant Synamedia PowerVu Network Center servers has a duplicate image of the primary Synamedia PowerVu Network Center configuration, including all system configuration and decoder authorization information. In the event of a failure of the primary Synamedia platform, technical personnel can switch to the secondary Synamedia PowerVu Network Center and avoid reconfiguring the system or missing previously scheduled events.

Data replication allows the broadcaster or programmer to have a fully configured standby uplink network and Synamedia PowerVu Network Center control system at an alternate site. The database for all decoder configurations is replicated on the two Synamedia PowerVu Network Center systems, so that any major failure at the uplink network site can be overcome by switching to the alternate site. The replication of configuration information helps ensure database consistency and reduces delay in the restoration of services. PNC 13 series brings Multi-server IRD data management capabilities allowing the user to keep the IRD data records in sync between multiple servers in multiple alternate locations.

Ordering Information

To place an order or download software, visit the Synamedia Ordering Portal Home Page.

VPNC x86 Ordering information	Part Number
vPNC x86 based system (vPNC)	Configured as R-VPNC-APPS
vPNC Platform license (one per instance)	L-VPNC-PLATFORM

vPNC V15.x software	SW-VPNC-V15x-K9
vPNC PowerVu Base Encryption function	L-VPNC-LIC-PVU
vPNC PowerVu AES128 Encryption function	L-VPNC-LIC-AES128
vPNC PowerVu Simulcrypt Encryption function	L-VPNC-LIC-SIMUL
vPNC Feature Package 1 (Metromux, DPI, SNMP)	L-VPNC-LIC-PKG1
vPNC Feature Package 2 (DataRep/HA, Xcoder Ctrl, AdTier, OSD)	L-VPNC-LIC-PKG2
vPNC Feature Package 3 (LEC, PNC Sat Dis Rec)	L-VPNC-LIC-PKG3
Contact your Sales team for help with vPNC upgrades	
Legacy PNC ordering options for SUN Servers	Part Number
PowerVu Network Center upgrade to PNC 15 series for Sun Servers	LPNC-UPG-V15X-K9 & LPNC-UPGS-V15X-K9
PowerVu Standard CA DES option (for primary SUN server PNC)	LPNC-LICP-DES
PowerVu Standard CA DES option (for standby SUN server PNC)	LPNC-LICS-DES
PowerVu Standard CA DVB option (for primary SUN server PNC)	LPNC-LICP-DVB
PowerVu Standard CA DVB option (for standby SUN server PNC)	LPNC-LICS-DVB
PowerVu Simulcrypt CA option (for primary SUN server PNC)	LPNC-LICP-SIMUL
PowerVu Simulcrypt CA option (for standby SUN server PNC)	LPNC-LICS-SIMUL
Simple profile DPI (for primary SUN server PNC)	LPNC-LICP-DPI
Simple profile DPI (for standby SUN server PNC)	LPNC-LICS-DPI
Data replication option (for primary SUN server PNC)	LPNC-LICP-DAREP
Data replication option (for standby SUN server PNC)	LPNC-LICS-DAREP
SNMP agent option (for primary SUN server PNC)	LPNC-LICP-SNMP
SNMP agent option (for standby SUN server PNC)	LPNC-LICS-SNMP
Metromux option (for primary SUN server PNC)	LPNC-LICP-MMUX

Metromux option (for standby SUN server PNC)	LPNC-LICS-MMUX
Live Event Controller option (for primary SUN server PNC)	LPNC-LICP-LEC
Live Event Controller option (for standby SUN server PNC)	LPNC-LICS-LEC
Transcoder control option (for primary SUN server PNC)	LPNC-LICP-TRCO
Transcoder control option (for standby SUN server PNC)	LPNC-LICS-TRCO
Ad insertion tier option (for primary SUN server PNC)	LPNC-LICP-ADINS
Ad insertion tier option (for standby SUN server PNC)	LPNC-LICS-ADINS
Satellite Disaster Recovery option (for primary SUN server PNC)	LPNC-LICP-SATDR
Satellite Disaster Recover option (for standby SUN server PNC)	LPNC-LICS-SATDR


Warranty Information

Find warranty information on the PowerVu Network Center solution page on Synamedia.com.

Synamedia

Global Headquarters
Synamedia
One London Road
Staines, United Kingdom TW18 4EX

Visit us online at: www.synamedia.com.

 Synamedia and the Synamedia logo are trademarks or registered trademarks of Synamedia and/or its affiliates in the U.S. or other countries. Third party trademarks mentioned are the property of their respective owners. The use of the word partner does not imply a partnership between Synamedia and any other company.