

## Cisco PowerVu Network Center (Release 15.0)

Transmit analog and digital video, audio, and data more securely to a large receiver population with the Cisco® PowerVu® Network Center. Cisco PowerVu Network Center is the core of the Cisco 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.

Cisco PowerVu Network Center Release 15.0 comes with two application modules:

- An Integrated Receiver/Decoder (IRD) management focused module with a dedicated new IRD database including web UI.
- A Network Management System (NMS) and Conditional Access System (CAS) focused module.

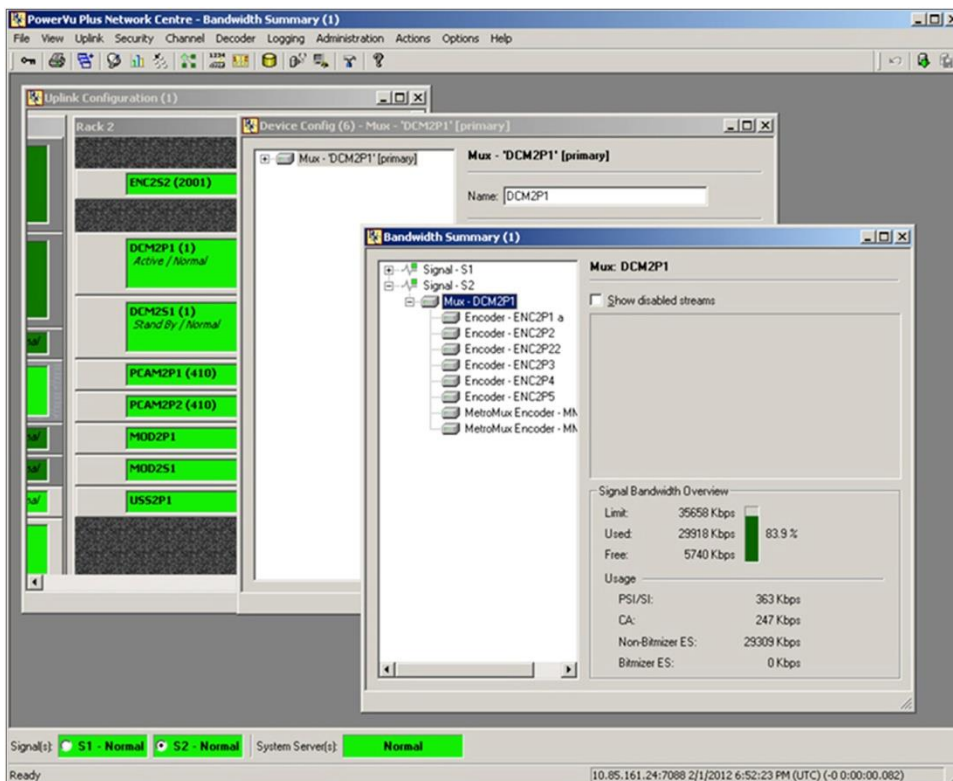
Cisco continues to target the single server deployment model, allowing for installation of both applications on a Sun Server (T4-1 only) with now the option to install both applications on x86 platforms like the Cisco Unified Computing System™ (Cisco UCS®) server.

The new application split does allow for an extra deployment model that targets customers with many Cisco PVC systems who are looking for a Cisco supported centralized IRD management model. In that deployment model, the Cisco Unified Computing System™ (Cisco UCS®) server is introduced as the central server for the centralized IRD management software module. Please contact your Sales contact for extra information if you are interested in the new deployment model.

### Network Management

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

Figure 1. Cisco PowerVu Network Center Sample Screen



## Security

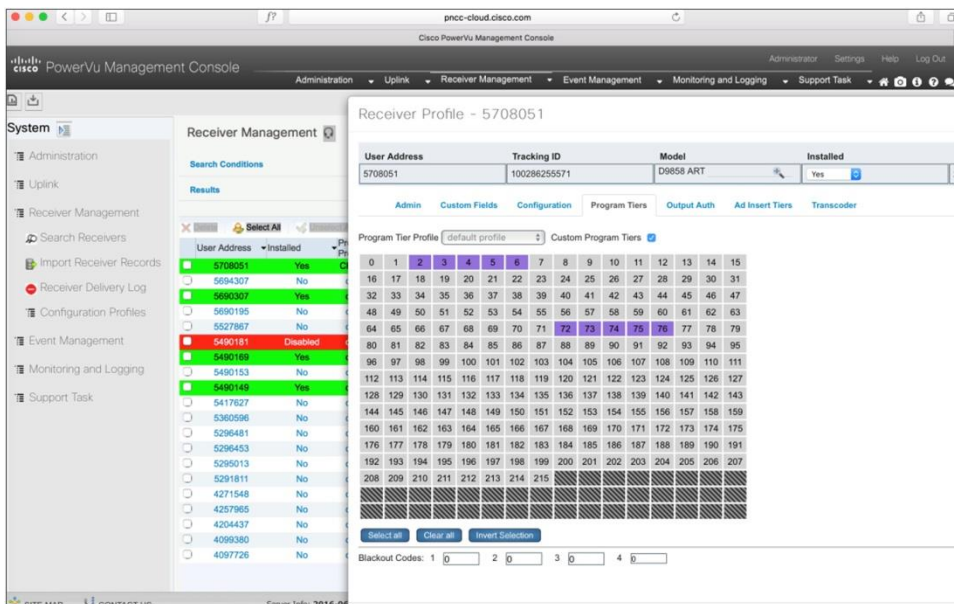
The Cisco PowerVu Network Center system gives the content owner full control over what transmitted content the Cisco PowerVu IRD user can access. Cisco PowerVu Conditional Access (CA) and encryption help ensure that your transmissions are highly secure and the Cisco PowerVu Network Center offers a reliable,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

## Decoder Management

With the Cisco PowerVu Network Center Release 15.0, you can use the Cisco PowerVu Management Console to control where your information is being received (Figure 2). The Cisco PowerVu Network Center addresses all Cisco PowerVu receivers in the field. You have all of the information necessary to address Cisco PowerVu decoders for specific service authorization.

Cisco PowerVu Network Center 15 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 continues to bring UI usability enhancement in the PNC Management console to help with the day to day IRD operations.

**Figure 2.** Cisco PowerVu Management Console: IRD Management Web-UI Sample Screen



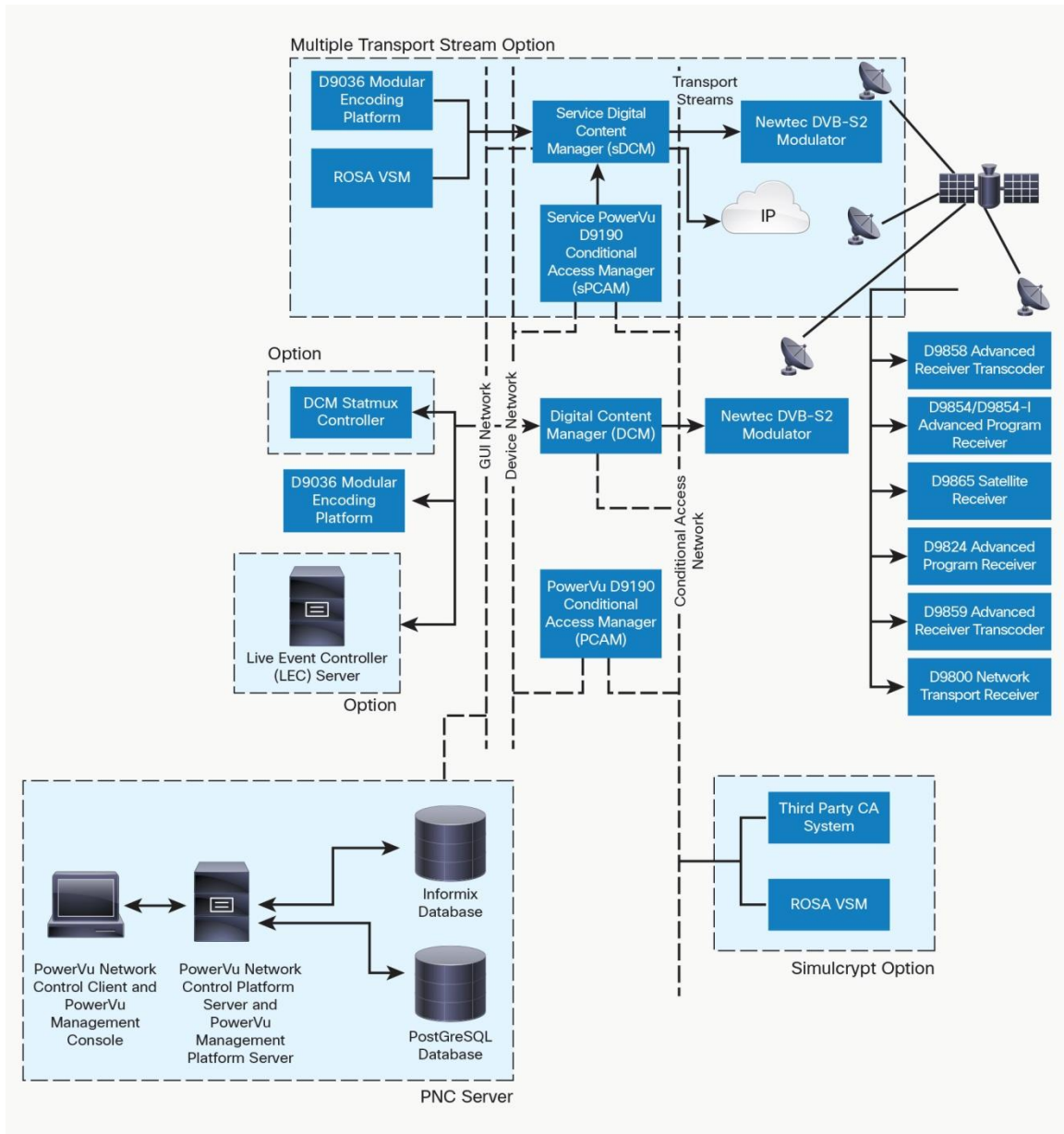
## Key Features and Benefits

- Standard-Definition (SD) and High-Definition (HD) MPEG encoder support (Cisco Modular Encoding Platform D9036)
- Advanced Video Coding (AVC) encoder support (Cisco Modular Encoding Platform D9036)
- PowerVu Encryption Support for HEVC encoded content (PNC13.5 and up)
- Support for Cisco DCM Unified Rate Control Statmux System
- Support for Cisco Digital Content Manager, including statmux controller
- Support for Cisco Virtual Digital Content Manager as multiplexer and scrambler.(PNC15 and up)
- Support for Cisco PowerVu D9190 Conditional Access Manager
- 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 Cisco 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  $N+M \leq 36$  (Cisco Modular Encoding Platform D9036)
- Advanced decoder searching capabilities
- User-friendly Web GUI for the IRD management functionality

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- 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 Cisco PowerVu Digital Content Manager (PNC12 and up)
  - Enhanced support to up to 12 audios per virtual channel
  - Automated backup and manual restore functions on Cisco PowerVu Network Center server with USB and Network backup media
  - Cisco 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 Cisco D9858, D9859 and D9800-MS Advanced Receiver Transcoder control
  - Optional Cisco Live Event Controller support
  - 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 Cisco PowerVu distribution system.

**Figure 3.** Cisco PowerVu Multichannel Distribution System



## Product Specifications

Table 1 lists specifications for the Cisco PowerVu Network Center Release 15.0.

**Table 1.** Product Specifications

Functions	Features
<b>System and network management</b>	<ul style="list-style-type: none"> <li>• Industry standards: MPEG-2 DVB, AVC (H.264), and HEVC</li> <li>• Commercial conditional access</li> <li>• Scrambling: DES, DVB or Simulcrypt</li> <li>• Automatic redundancy: N:M with <math>N \leq 18</math> and <math>N+M \leq 36</math></li> <li>• Number of signals: 4 (with traditional DCM MUX architecture)</li> <li>• Encoder control (D9036)</li> <li>• Multiplexer control: ASI and GbE interfaces</li> <li>• Cisco PowerVu data support: synchronous and asynchronous</li> <li>• Advanced modulator control</li> <li>• Cisco PowerVu subtitling and Vertical Blanking Interval (VBI) support</li> <li>• DVB subtitling and DVB WST support</li> <li>• Digital Program Insertion (DPI) support</li> <li>• Email alerts for alarms</li> <li>• Data replication: optional</li> <li>• Network Time Protocol synchronization</li> </ul>
<b>System control functions</b>	<ul style="list-style-type: none"> <li>• Program and event scheduling</li> <li>• Bandwidth management</li> <li>• MetroMux software</li> <li>• Password privilege system</li> <li>• Diagnostic logs</li> <li>• Transaction logs</li> <li>• Automatic and manual database backups</li> </ul>
<b>Computer and remote access</b>	<ul style="list-style-type: none"> <li>• Client/server architecture</li> <li>• Server: Netra T4-1 and x86 compute platforms, Client interface: Windows 7 and up</li> <li>• Multiuser remote access</li> <li>• Remote access: LAN, satellite modem, ISDN or basic telephone service</li> <li>• Simple Network Management Protocol (SNMP) interface for monitoring: optional</li> </ul>
<b>Decoder control functions</b>	<ul style="list-style-type: none"> <li>• Decoder database: 250,000</li> <li>• Entitlement Control Message (ECM) and Entitlement Management Message (EMM) generation</li> <li>• Tier assignment: 216</li> <li>• Blackout and spotlight codes</li> <li>• Fingerprint trigger</li> <li>• Broadcast flag (ATSC A/65B)</li> <li>• Force tuning</li> <li>• Homing channel</li> <li>• Remote control outputs</li> <li>• Service replacement: scheduled, CA, and cue-trigger based</li> <li>• Decoder output controls</li> <li>• Satellite code download to decoders</li> <li>• Decoder lock-out of front panel</li> <li>• Decoder group and search capability</li> <li>• Visual IRD management, in-band control</li> <li>• Live Event Controller (optional)</li> </ul>

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## Key Cisco PowerVu Network Center Options

### **Cisco Live Event Controller**

The Cisco 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 Cisco LEC option is a server with an ASI card that interfaces with the multiplexer ASI card to pass through the event control data. It also interfaces with the Cisco PowerVu Network Center and a General Purpose Input (GPI) module through Ethernet connections.

The Cisco PowerVu Network Center monitors the LEC application. Network services and event group data are automatically coordinated between the Cisco PowerVu Network Center and LEC. Channel tuning events are imported through an easy-to-use web interface, and are triggered based on time or GPI triggers (button pushes). 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.

### **Data Replication: Revenue Protection**

Data replication allows the broadcaster or programmer to have a fully configured standby uplink network and Cisco PowerVu Network Center control system at an alternate site. The database for all decoder configurations is replicated on the two Cisco 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.

### **SNMP Agent: Alarm and Status Monitoring**

The Cisco PowerVu Network Center can be monitored in third-party NMSs through the SNMP protocol. This allows broadcasters and programmers to add the Cisco PowerVu system to their existing NMS installation, simplifying fault discovery and resolution procedures.

### **Warm-Standby Server: Backup Cisco PowerVu Network Center That Stays Up to Date**

For installations without duplicate uplink network sites, Cisco PowerVu system users can choose to install a backup Cisco 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 collocated secondary Cisco PowerVu Network Center has a duplicate image of the primary Cisco PowerVu Network Center configuration, including all system configuration and decoder authorization information. In the event of a failure of the primary Cisco platform, technical personnel can switch to the secondary Cisco PowerVu Network Center and avoid reconfiguring the system or missing previously scheduled events.



## Ordering Information

Table 2 provides ordering information for the Cisco PowerVu Network Center.

**Table 2.** Ordering Information

Description	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
vPNC x86 based system (vPNC)	Configured through R-VPNC-APPS
vPNC Platform license (one per instance)	L-VPNC-PLATFORM
vPNC V15 software	SW-VPNC-V150-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	

PNC-vPNC based servers must be installed and configured by Cisco customer support.



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## Service and Support

Using the Cisco lifecycle services approach, Cisco and its partners provide a broad portfolio of end-to-end services and support that can help increase your network's business value and return on investment. This approach defines the minimum set of activities needed by technology and by network complexity to help you successfully deploy and operate Cisco technologies and optimize their performance throughout the lifecycle of your network.

## Cisco Capital

### Financing to Help You Achieve Your Objectives

Cisco Capital<sup>®</sup> financing can help you acquire the technology you need to achieve your objectives and stay competitive. We can help you reduce CapEx. Accelerate your growth. Optimize your investment dollars and ROI. Cisco Capital financing gives you flexibility in acquiring hardware, software, services, and complementary third-party equipment. And there's just one predictable payment. Cisco Capital is available in more than 100 countries.

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## For More Information

To learn more about the Cisco PowerVu Network Center, contact your local account representative.

To subscribe to receive end-of-life/end-of-sale information, go to

<https://www.cisco.com/cisco/support/notifications.html>.



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