Cisco PowerVu Network Centre (Release 11.6)

The Cisco PowerVu® Network Centre (PNC) is the core of the PowerVu product family. The highly reliable Cisco® PNC is a sophisticated, yet easy-to-use system that provides network management, security, decoder management, and advanced revenue protection.

The PNC is designed to meet the analog and digital content distribution needs of programmers, private networks, other network operators, and users who need to automatically control multiple encoders in a redundant system to securely transmit video, audio, and data to a large receiver population.

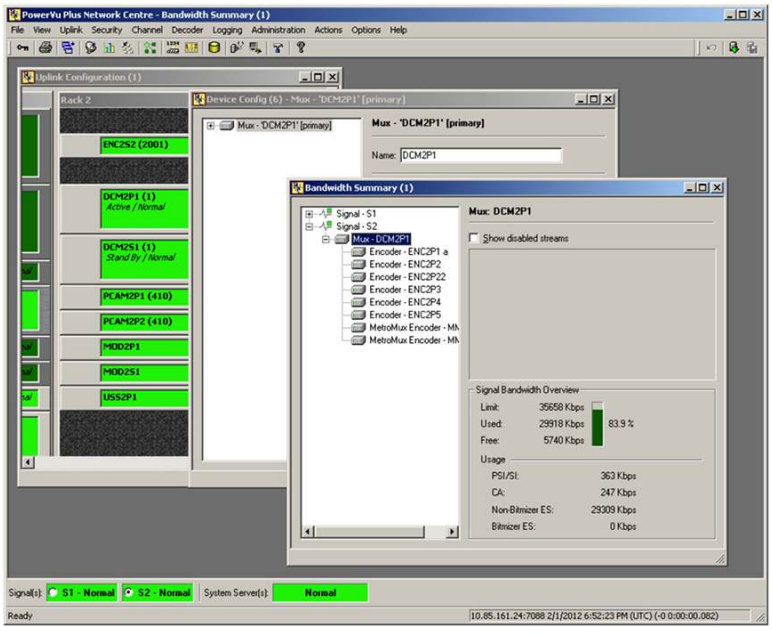
Cisco PNC 11.5 and up supports the Cisco Digital Content Manager (DCM) statistical time-division multiplexing (statmux) controller, along with the Cisco D9036 URC (Unified Rate Controller) Statmux System. This series also supports additional backup encoders, allowing up to 18 backup encoders per PNC signal.

With PNC 11.6, Cisco introduces full support for the D9859 including over the air downloads of firmware and licensing. For future D9865 On Screen Messaging, PNC 11.6 introduces the optional functionality to enable the messaging through the PNC IRD output controls.

Network Management

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

Figure 1. Cisco PowerVu Network Centre Sample Screen



Security

You can use Cisco PNC to control who is authorized for your programs. Conditional access (CA) and encryption help ensure that your transmissions are secure. The PNC offers a reliable, commercial security system.

Decoder Management

You can use Cisco PNC to control where your information is being received. The PNC addresses all PowerVu receivers in the field. You will have all of the information necessary to address PowerVu decoders for specific service authorization.

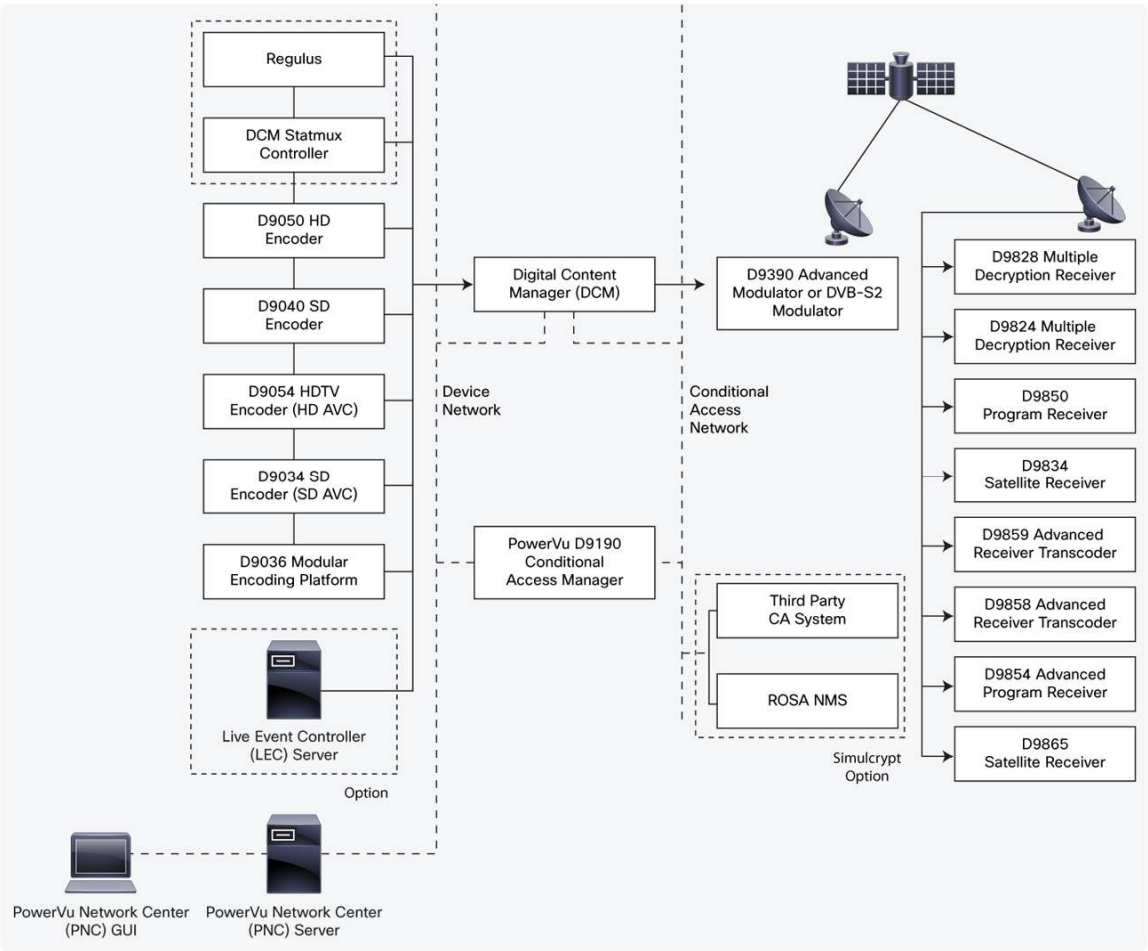
Key Features and Benefits

- Standard-definition (SD) and high-definition (HD) encoder support
- Advanced Video Coding (AVC) encoder (for example, Cisco D9034, D9054, or D9036) web GUI device launch and configuration
- Support for Cisco D9036 URC Statmux System
- Support for Cisco Digital Content Manager, including statmux controller
- Support for Cisco PowerVu 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 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 <= 18 and N+M <= 36
- Advanced decoder grouping and searching capabilities
- Available interface to the PowerVu Connect system, which supports automatic PowerVu decoder deployment and authorization
- User-friendly GUI
- MetroMux software (for remultiplexing of 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 disaster recovery and/or data replication software
- Optional programmer segmentation, allowing service providers to provide PNC access for programmers

- Visual integrated receiver/decoder (IRD) management
- Optional Cisco D9858 and D9859 Advanced Receiver Transcoder control
- Optional Cisco Live Event Controller support
- Optional Simulcrypt support

Figure 2 illustrates the PowerVu distribution system.

Figure 2. Cisco PowerVu Multichannel Distribution System



Product Specifications

Table 1 lists specifications for the Cisco PowerVu Network Centre 11.5.

Table 1. Product Specifications

Functions	Features
System and network management	Industry standards: MPEG-2 and DVB, AVC (H.264) Commercial conditional access Scrambling: DES, DVB or Simulcrypt Automatic redundancy: N:M with N<=18 and N+M<=36 Number of signals: 4 Encoder control 4:2:0/4:2:2 video encoding: SD and HD Closed-loop statistical multiplexing: SD and HD Dual-pass encoding MPEG-1, Dolby, MPEG-2 digital audio encoding: SD and HD Dolby E passthrough: HD Multiplexer control PowerVu data support: synchronous and asynchronous Advanced modulator control PowerVu subtitling and vertical blanking interval (VBI) support DVB subtitling and DVB WST support Digital Program Insertion (DPI) support Email alerts for alarms Disaster recovery: optional Data replication: optional Network Time Protocol synchronization
System control functions	Program and event scheduling Bandwidth management MetroMux software Password privilege system Diagnostic logs Transaction logs Automatic and manual database backups
Computer and remote access	Client/server architecture Server: Netra T5220/T4-1, Client interface: Windows 7 Multiuser remote access: 5 users Remote access: satellite modem, ISDN, LAN, or basic telephone service Simple Network Management Protocol (SNMP) interface for monitoring: optional PowerVu Connect interface for automatic decoder deployment and fulfillment (optional)
Decoder control functions	Decoder database: 250,000 Entitlement control message (ECM) and entitlement management message (EMM) generation Tier assignment: 256 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

Key PNC 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 PNC and a General Purpose Input (GPI) module through Ethernet connections.

The PNC monitors the LEC application. Network services and event group data are automatically coordinated between the PNC 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 PNC control system at an alternate site. The database for all decoder configurations is replicated on the two PNC 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 minimum delay in the restoration of services.

SNMP Agent: Alarm and Status Monitoring

The PNC can be monitored in third-party Network Monitoring Systems (NMS) through the SNMP protocol. This allows broadcasters and programmers to add the PowerVu system to their existing NMS installation, simplifying fault discovery and resolution procedures. (Note: The SNMP Agent requires a Sun Blade, Sun Fire, or Netra 5220 server.)

Warm-Standby Server: Backup PNC That Is Always Up to Date

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

Ordering Information

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

Table 2. Ordering Information

Description	Part Number
PNC rack-mount server hardware platform: Sun NetraT4-1	PNC-SRV-SUNT4
PNC server software: PNC 11.6	SWPNC-REL-V116-K9
PNC external tape drive	PNC-TAPEDR=
PNC RS-232 concentrator	4037889
Keyboard, rack-mount, 1RU with touchpad, PS/2	4025212
PNC GUI PC client with ENET network card (Reqs 4030035)	PNC-GUI-PC
PNC GUI software CD: PNC 11.6	LPNC-GUI-116
PNC programmer GUI software CD: PNC 11.6 Options	LPNC-GUIPROG-116
Enhanced software with DES scrambling (for primary PNC) for use with D9140	LPNC-LICP-DESD9140
Enhanced software with DES scrambling (for standby PNC) for use with D9140	LPNC-LICS-DESD9140
Enhanced software with DVB scrambling (for primary PNC) for use with D9140	LPNC-LICP-DVBD9140
Enhanced software with DVB scrambling (for standby PNC) for use with D9140	LPNC-LICS-DVBD9140
Field/Factory: PowerVu Standard CA DES option (for primary PNC)	LPNC-LICP-DES
Field/Factory: PowerVu Standard CA DES option (for standby PNC)	LPNC-LICS-DES
Field/Factory: PowerVu Standard CA DVB option (for primary PNC)	LPNC-LICP-DVB
Field/Factory: PowerVu Standard CA DVB option (for standby PNC)	LPNC-LICS-DVB
Field/Factory: PowerVu Simulcrypt CA option (for primary PNC)	LPNC-LICP-SIMUL
Field/Factory: PowerVu Simulcrypt CA option (for standby PNC)	LPNC-LICS-SIM
Cue trigger option (for primary PNC)	LPNC-LICP-CUE
Cue trigger option (for standby PNC)	LPNC-LICS-CUE
Simple profile DPI (for primary PNC)	LPNC-LICP-DPI
Simple profile DPI (for standby PNC)	LPNC-LICS-DPI
PNC statmux software option (for primary PNC)	LPNC-LICP-SMX
PNC statmux software option (for standby PNC)	LPNC-LICS-SMX
Disaster recovery option (for primary PNC)	LPNC-LICP-DISREC
Disaster recovery option (for standby PNC)	LPNC-LICS-DISREC
Data replication option (for primary PNC)	LPNC-LICP-DAREP
Data replication option (for standby PNC)	LPNC-LICS-DAREP
SNMP agent option (for primary PNC)	LPNC-LICP-SNMP
SNMP agent option (for standby PNC)	LPNC-LICS-SNMP
Metromux option (for primary PNC)	LPNC-LICP-MMUX
Metromux option (for standby PNC)	LPNC-LICS-MMUX
Live Event Controller option (for primary PNC)	LPNC-LICP-LEC
Live Event Controller option (for standby PNC)	LPNC-LICS-LEC
Transcoder control option (for primary PNC)	LPNC-LICP-TRCO
Transcoder control option (for standby PNC)	LPNC-LICS-TRCO
Ad insertion tier option (for primary PNC)	LPNC-LICP-ADINS
Ad insertion tier option (for standby PNC)	LPNC-LICS-ADINS
PNC standby server Upgrades	Configured through PNC-STBY-SUITE

Description	Part Number
PowerVu Network Centre upgrade to PNC 11 series	LPNC-UPG-V11X-K9
PNC hardware upgrade	Configured through PNC-PRIM-SUITE or PNC-STBY-SUITE

When configuring for the warm-standby server through the PNC-STBY-SUITE, include the data replication option during the software configuration. Warm-standby servers must be installed and configured by Cisco customer support.

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.

For More Information

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