

# Cisco PowerVu Network Centre Release 9.0

## Product Overview

The PowerVu® Network Centre (PNC) is the heart of the PowerVu product family. The highly reliable 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 and other network operators – users who need to automatically control multiple encoders in a redundant system to securely transmit video, audio and data to a large receiver population.

## Network Management

Control all the PowerVu video, audio, data and other ancillary PowerVu services of your uplink. The PNC enables you to configure and control your PowerVu network devices, including PowerVu Encoders, Multiplexers and Advanced Modulators.

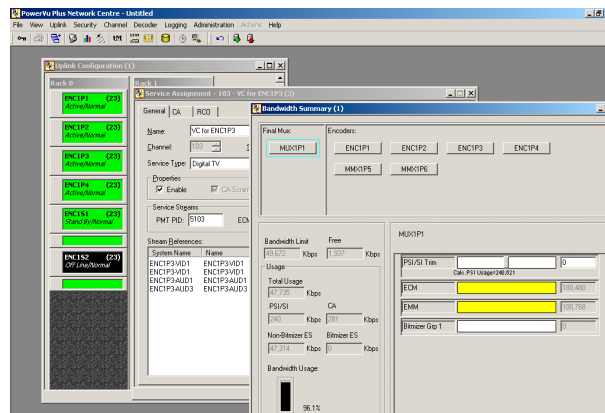
## Security

Control who is authorized for your programs. Conditional access and encryption help ensure that your transmissions are secure. The PNC offers a reliable, commercial security system.

## Decoder Management

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

Figure 1. Sample Screen of the Cisco PowerVu Network Centre



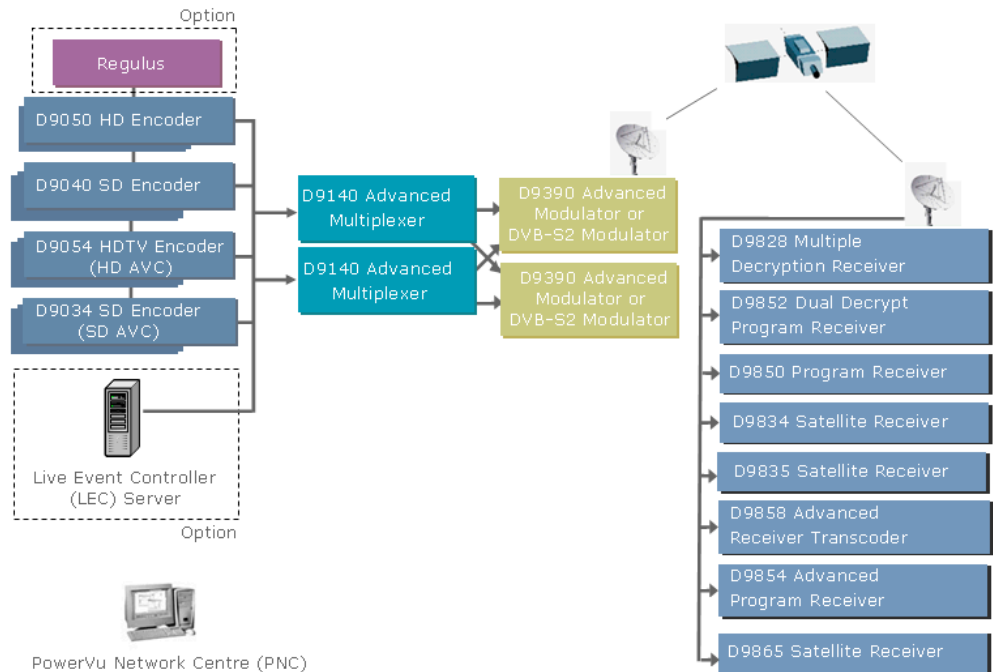
## Features

- Standard Definition (SD) and High Definition (HD) Encoder support
- AVC Encoder (i.e., Model D9034 and D9054) Web GUI device launch and configuration
- MPEG-2/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
- Control over all PowerVu decoder authorizations
- Broadcast flag to control unwanted content distribution
- Control of Program Receiver and Multiple Decryption Receiver (MDR) analog/digital decoder outputs
- Effective management of bandwidth allocation
- Expandable encoder configuration from 0:1 to 4:32
- Advanced decoder grouping and searching capabilities
- Available interface to the PowerVu Connect system, which allows for automatic PowerVu decoder deployment and authorization
- User-friendly Graphical User Interface (GUI)
- MetroMux software (for re-multiplexing of MPEG-2 and MPEG-4 part 10 (H.264) video, audio and a variety of additional services)
- Network Management & Decoder Control integrated with Conditional Access & Encryption all-in-one system
- Decoder database Application Programming Interface (API)
- Optional Disaster Recovery and/or Data Replication software
- Optional Programmer Segmentation, enabling service providers to provide PNC access for programmers
- Visual IRD Management
- D9858 Advanced Receiver Transcoder support

## Specifications

**Table 1.** Product Specifications, Release Version 9.0

Functions	Features	
<b>System/Network Management</b>	Industry Standards: MPEG-2 and DVB, AVC (H.264) Commercial Conditional Access Scrambling: DES or DVB Automatic Redundancy: up to 4:36 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 Audio Encoding: SD and HD Dolby® Digital Audio Encoding: SD and HD MPEG-2 Advanced Audio Encoding: SD Dolby E Passthrough: HD	Programmer Segmentation: 8 segments (optional) Multiplexer Control PowerVu Data support: Synchronous and Asynchronous Advanced Modulator Control PowerVu Subtitling and VBI support DVB Subtitling and DVB WST support Digital Program Insertion support Email Alerts for Alarms Disaster Recovery: Optional Data Replication: Optional Network Time Protocol Synchronization Encoder Pre-filters: Spatial, temporal
<b>System Control Functions</b>	Program/Event scheduling Bandwidth Management MetroMux software Password Privilege system	Diagnostic Logs Transaction Logs Automatic/Manual Database Backups
<b>Decoder Control Functions</b>	Decoder Database: 250,000 ECM and EMM generation Tier Assignment: 256 Blackout/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/search capability Visual IRD Management, In-band control
<b>Computer and Remote Access</b>	Client/Server Architecture <u>Server</u> Sun Fire 215 rack-mount server (PNC 8.5 and 8.5.1) Netra 210 (PNC 9.0) Client Interface: Windows XP	Multi-user remote access: 5 users Remote Access: Satellite Modem, ISDN, LAN or POTS SNMP interface for monitoring: Optional PowerVu Connect interface: For automatic decoder deployment and fulfillment (optional)

**Figure 2.** PowerVu Multi-Channel Distribution System

## Key PNC Options

### 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/end time via a button push. This feature provides users with an extra level of flexibility in managing services.

The LEC computer option is a server with an ASI card that interfaces with the MUX ASI card to pass through the event control data. It also interfaces with the PNC and a General Purpose Input (GPI) module via 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 via an easy-to-use web interface, and are triggered based on time or GPI triggers (button). 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.

## **Disaster Recovery and Data Replication – Revenue protection**

Disaster Recovery is an advanced PowerVu system option that facilitates automatic service recovery in the event of unforeseen, critical failures in the transmission link that may occur at the satellite, transponder, uplink site, or downlink site. Optionally, the network can be configured to recover from periodic sun outages. Disaster Recovery facilitates the resumption of normal operation on a pre-defined alternate signal source should a disaster occur. This is done by allowing the operator to pre-define potential recovery locations, criteria for disaster and which receivers will participate in disaster recovery.

Data replication allows the broadcaster/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, ensuring 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 all services.

## **SNMP Agent – Alarm and status monitoring**

The PNC can be monitored in third party Network Monitoring Systems (NMS) via 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 or Sun Fire server.)

## **Warm Standby Server – Backup PNC that's 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 ensure that the co-located 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.

## **Programmer Segmentation**

Service providers can provide programmers with PNC access, restricted to their own virtual channels and IRDs. This enables independent IRD management, blackout event creation and conditional access control for programmers wishing to administer their own network. Service providers maintain control over uplink component management and have authority over all programmer segments to help resolve customer issues.

## Ordering Information

**Table 2.** Ordering Information

Description	Part Number
PNC Statmux Software	368-020
Cue Trigger	368-024
Enhanced Software with DES Scrambling	368-509
Enhanced Software with DVB Scrambling	368-510
Simple Profile DPI	4004862
Disaster Recovery	4006902
Data Replication	4006903
SNMP Agent	4008841
Warm Standby Server	4009351
Cold Standby Server	4009630
MetroMux	368-018
Programmer Segmentation	4013431
Programmer GUI CD	4035941
Primary Live Event Controller	4033385
Backup (Cold Spare) Event Controller	4033386



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