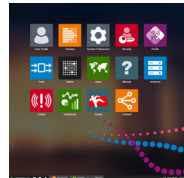


Source			Destination		
Name	Description	Tags	Name	Description	Tags
ALABAMA_ENC_1	Regional Site	Alabama	ALABAMA_DEC_1	Regional Site	Alabama
ALABAMA_ENC_2	Regional Site	Alabama	ALABAMA_DEC_2	Regional Site	Alabama
ARIZONA_ENC_1	Regional Site	Arizona	ARIZONA_DEC_1	Regional Site	Arizona
ARIZONA_ENC_2	Regional Site	Arizona	ARIZONA_DEC_2	Regional Site	Arizona
ARKANSAS_ENC_1	Regional Site	Arkansas	ARKANSAS_DEC_1	Regional Site	Arkansas
CALIFORNIA_ENC_1	Regional Site	California	CALIFORNIA_DEC_1	Regional Site	California
CALIFORNIA_ENC_2	Regional Site	California	CALIFORNIA_DEC_2	Regional Site	California
CALIFORNIA_ENC_3	Regional Site	California	CALIFORNIA_DEC_3	Regional Site	California
CALIFORNIA_ENC_4	Regional Site	California	CALIFORNIA_DEC_4	Regional Site	California
CALIFORNIA_ENC_5	Regional Site	California	CALIFORNIA_DEC_5	Regional Site	California
CALIFORNIA_ENC_6	Regional Site	California	CALIFORNIA_DEC_6	Regional Site	California
CALIFORNIA_ENC_7	Regional Site	California	CALIFORNIA_DEC_7	Regional Site	California
CALIFORNIA_ENC_8	Regional Site	California	CALIFORNIA_DEC_8	Regional Site	California
COLORADO_ENC_1	Regional Site	Colorado	COLORADO_DEC_1	Regional Site	Colorado
COLORADO_ENC_2	Regional Site	Colorado	COLORADO_DEC_2	Regional Site	Colorado



## VideolPath 6.0

### Management System

# Making media service management easy

**Organizations that work with professional quality content want to manage the way this content is transported and processed without having to worry about the intricacies of network management and monitoring of traditional and IP networks.**

Nevion's VideolPath is designed precisely to make it easy to manage traditional and IP-based media networks; enabling users to achieve their objectives (such as setting up a connection with a remote location) in a quick and simple way.

VideolPath is software that allows:

- The creation of connections (provisioning of services) on a wide area, metro or in-campus networks
- The recording (inventory) of all network resources detected by the system
- The monitoring of network resources and correlation with on-going services

VideolPath provides features designed to make it possible for service providers to let their broadcast customers manage their network requirements. This includes support for multi-tenanting with associated security, which enables service providers to offer walled access to multiple broadcasters.

### Applications

- Scheduling of services in contribution networks
- Managing occasional use live sports and event feeds
- Operation and maintenance of wide-area, metro or in-campus broadcast networks
- Distributed routing of content for broadcast production

### Key features

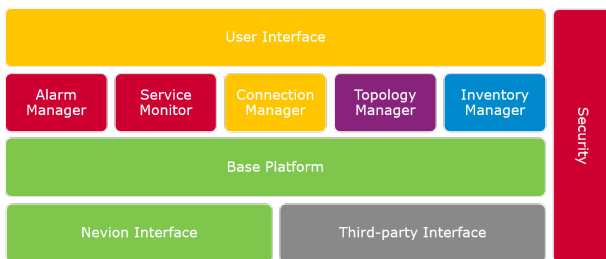
VideolPath greatly simplifies the inventory, provisioning and monitoring of media networks, resulting in:

- Faster time-to-set-up for those needing new connections (self-provisioning via a web-interface), allowing a rapid response to evolving needs
- Faster time-to-resolution of problems (in many cases before they occur)
- Reduced OPEX through automation of processes
- Increased revenue through more efficient use of network resources

## System overview

VideolPath provides service provisioning, connection management, monitoring, inventory, fault management and configuration management functions. VideolPath supports both Nevision and a variety of third-party devices. New third-party devices are integrated on a per project basis.

The system is based on a common software platform that includes modules to support various functionalities (see diagram below) to make the management of media networks as easy as possible. These modules may be licensed separately and combined to form a deployment for a specific purpose.



## Connection Manager

The VideolPath Connection Manager allows users to provision services without having to consider detailed configuration settings in each network element, making the setting up and tearing down of connections much easier.

The system is also capable of performing network provisioning, and decide the optimal media transport path through the network infrastructure (topology) from source to destination(s). The path-finding algorithm is technology agnostic and allows the system to support path-finding at different layers in the network stack.

## Alarm Manager

The VideolPath Alarm Manager provides monitoring functionality for services and network elements. Network element alarms are automatically correlated to services. Status information is typically retrieved from network elements using regular polling and notification mechanisms (e.g. SNMP traps). Details concerning how status information is retrieved for a specific device is captured in the driver for the device type.

Severity	Category	Name	Source	Address	Details	Last event	Owner	Time
Critical	Device		demo1		Alarm was up...	Refresh		08:54:07 - 13/04/2016
Minor	User		demo3		Alarm was up...	Refresh		08:54:07 - 13/04/2016
Warning	Service		demo2		Alarm was up...	Refresh		08:54:07 - 13/04/2016
Critical	Service		demo2		A dynamic te...			08:54:07 - 13/04/2016
Critical	Device		demo1		A dynamic te...	On		08:54:07 - 13/04/2016
Critical	NetworkServi...		demo4		A dynamic te...	On		08:54:07 - 13/04/2016
Critical	User		demo3		A dynamic te...	On		08:54:07 - 13/04/2016
Major	Service		demo2		A dynamic te...	On		08:54:07 - 13/04/2016
Major	NetworkServi...		demo4		A dynamic te...	On		08:54:07 - 13/04/2016
Major	User		demo3		A dynamic te...	On		08:54:07 - 13/04/2016
Major	Device		demo1		A dynamic te...	On		08:54:07 - 13/04/2016
Minor	NetworkServi...		demo4		A dynamic te...	On		08:54:07 - 13/04/2016
Minor	User		demo3		A dynamic te...	On		08:54:07 - 13/04/2016
Minor	Service		demo2		A dynamic te...	On		08:54:07 - 13/04/2016
Minor	Device		demo1		A dynamic te...	On		08:54:07 - 13/04/2016
Cleared	NetworkServi...		demo4		A dynamic te...	On		08:54:07 - 13/04/2016
Cleared	Device		demo1		A dynamic te...	On		08:54:07 - 13/04/2016
Cleared	User		demo3		A dynamic te...	On		08:54:07 - 13/04/2016
Cleared	Service		demo2		A dynamic te...	On		08:54:07 - 13/04/2016
Major	Device		demo1		A sample Ma...	On		08:10:47 - 13/04/2016

## Inventory Manager

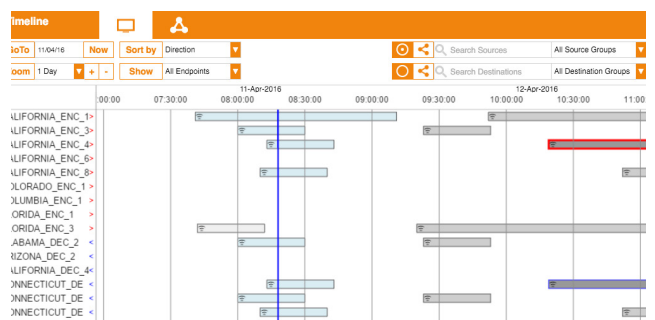
The VideolPath Inventory Manager holds a model of the networks resources, enabling users browse or search for particular network elements. The Inventory Manager detects available nodes and endpoints automatically.

VideolPath centralizes and simplifies upgrades, making it possible to plan, schedule and upgrade multiple network elements at one time, for coordinated roll-out of new firmware releases in the network.

## Customer Front-End

The VideolPath Customer Front-End provides the end-user with the interface to monitor video connections, provision new connections and modify existing connections. VideolPath supports a role-based security model, whereby different customers may be setup with access rights that match their required use of the system.

The Customer Front-End interface is typically used by broadcast users who work with planning of services for productions or contribution. The interface is also well suited for service providers that are providing occasional use contribution services to broadcast customers.



## Security

The VideolPath security model is based on associating users with roles, which define what the user can and cannot do in the system. The roles define access rights for functionality and resources within the system. VideolPath supports secure logging via HTTPS, which encrypts all data exchanged between the server and the client. In addition, LDAP may be used for authentication against Active Directory.

The security may be used to support multi-tenancing with associated security, which enables service providers to offer walled access to multiple broadcasters on the same system installation.

## User apps

VideolPath provides a web-based GUI. Security settings determines which of the apps to be made available to individual users of the system.

### Service Fulfillment



**Timeline** - Calendar based scheduling of services



**Connect** - Broadcast oriented end user control



**Matrix** - Broadcast based end user control using matrix views



**Panel** - Software based end control panel interface



**Tropology** - Manage connectivity between devices to make intelligent routing decisions



**Profile** - Manage service profiles (configurations)



**Flow** - Plan, schedule and activate production setups

## Service Assurance



**Maps** - Visual monitoring of services, network connectivity and endpoints



**Dashboard** - Create custom service and network monitoring views



**Alarms** - Manage current alarms and view history



**Service Monitor** - Monitor service status in real-time and define custom services



**Analytics** - Data logger and real-time monitoring

## Network inventory and System configuration



**Inventory** - Perform equipment maintenance (backup, restore and upgrade)



**Security** - Manage user logins and security roles



**User Profile** - Configure tailored user experience in different applications

## System architecture

The VideolPath system is based on a three-tier architecture with client, application and database layers. The client applications are running from a Web browser and communicate with the VideolPath server over HTTP(S).

The VideolPath server includes a security layer, API for communication with the clients, and core platform responsible for server-side processing and communication with the network elements within the video over IP network.

VideolPath has been built from ground up on a distributed database and distributed processing model. The system is based on multiple hardware servers to provide high-redundancy. There is no loss of functionality or performance if one of the servers in a cluster should go down.

## Key functionality

- Service monitoring: Monitoring of services and network resources including alarm management.
- Connection management: Dynamically configure endpoints for permanent or occasional use type of service.
- Network provisioning: Calculate and provision optimal network paths between endpoints.
- Customer front-end: End-user portal for booking of media services.
- Security: Advanced access control to support different user roles and multi-tenancy.
- Inventory management: Gather information about network resources and perform maintenance operations.

## Ordering options

VIP-SW-BASE	VideolPath base platform license. License fee per server. Includes 5 user licenses. Includes alarm and inventory management functions. Requires node licenses.
VIP-SW-BASE-ADV	VideolPath base platform license with advanced features. License fee per server. Includes 5 user licenses and VIP-SW-BASE. Includes Timeline, Service Monitor, Analytics applications and advanced Service Assurance functions. Require node licenses.
VIP-SW-NODE-A/B/C	VideolPath level A/B/C node license. License fee per node added to the system. Contact Nevia pre-sales for classification of third-party devices
VIP-SW-CONNECT	VideolPath connection license. License fee per active connection (source to destination). Includes alarm correlation for connections. Can be ordered ad bundles with 500, 1000 or 5000 active connections.
VIP-SW-CONNECT-PLUS	VideolPath advanced connection license with scheduling support. License fee per simultaneous active connection (source to destination).
VIP-SW-MONITOR	VideolPath service monitoring license. License fee per monitored end-to-end service. Note that monitoring of connections is covered by VIP-SW-CONNECT(-PLUS) licenses.
VIP-SW-USER-5	VideolPath user license. License fee per 5 simultaneous user sessions. Note 5 licenses is included with base platform.
VIP-SW-CUSTOM	VideolPath custom development. Covers roadmap acceleration of specific features or drivers required for a customer deployment that will be included in standard product. Price is based on an estimate of development effort.
VIP-SW-MAINT-SUPPORT	VideolPath maintenance and support agreement. Provides access to all major and minor software updates. Basic support services provided during office hours. 10% of all installed SW licenses (list price) invoiced annually in advance.

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