

High-Definition Digital Video Processor

- > The first multi-window video presentation processor available that supports HD video with HDCP!
- > Displays up to 8 fully-scalable video windows
- > Features VXP® high-definition scaling and de-interlacing
- > Modular design accepts the choice of up to 8 simultaneous inputs^[1]
- > Handles HDMI®, DVI, DisplayPort Multimode, and HD-SDI digital video sources^[2]
- > Handles analog RGB, component, S-Video, and composite video sources^[2]
- > QuickSwitch HD® achieves ultra-fast switching with transition effects
- > Advanced HDCP compliance manages DRM for 8 digital sources^[10]
- > Includes integrated Crestron® graphics engine and touch screen interface
- > Enables real-time, interactive annotation over high-definition video and computer images
- > Supports DVI, HDMI, and RGB display devices and touch screen monitors^[2]
- > Compatible with a vast range of third-party touch screens^[4]
- > Compatible with Crestron V-Panel™ HD Touch Screen Displays^[5]
- > Supports resolutions up to WUXGA 1920 x 1200 and HD 1080p60^[6]
- > Configures itself automatically using sync-detection and EDID^[8]
- > Allows easy setup via LCD front panel, on-screen display, or Web browser
- > Features built-in test patterns
- > Includes high-speed Ethernet and Cresnet® communications
- > Affords native Crestron control system integration
- > Available QuickMedia® inputs and output^[7,8,9,10]
- > Integrates seamlessly with Crestron DigitalMedia™ systems



Envision a world class multimedia presentation system for your boardroom, auditorium, command center, home theater or house of worship. Picture all your video and computer resources displayed in perfect harmony and clarity within a dramatic graphical environment all on one high-definition screen. Imagine the ability to seamlessly control the presentation and annotate your ideas with a stroke of your finger.

Now you've imagined the DVPHD High-Definition Digital Video Processor from Crestron® — the world's only multi-window video processor that displays high-res computer and high-definition video signals with HDCP, provides a fully-customizable HD graphics environment, and enables real-time annotation and touch screen control — all in a modular, scalable hardware platform that's easy to install!

The DVPHD is configurable to handle up to eight different inputs of virtually any type, including HDMI®, DVI, DisplayPort (Multimode), HD-SDI, and analog signals.^[1,2] Industry-leading support for HDCP ensures compatibility with content-protected DVD, Blu-ray Disc®, digital HDTV, and multimedia computer sources. Advanced high-definition image processing achieves astounding realism and detail for every input signal, with the ability to display up to eight separate video images at once, or switch fluently between them using alluring digital transition effects and customizable graphics.

Multi-Window Video Processor

The DVPHD displays up to 8 simultaneous, full-motion video windows^[3] on any high-resolution monitor, projector, or flat panel display. The video windows can be displayed on screen in any combination, with enhanced dynamic text capabilities for labeling each window. Video images can even fade or fly in and out over your own personalized background using digital transition effects and customizable graphics, lending enhanced flow and vibe to the total presentation. Each window is fully-scalable and independently controllable, allowing for display at any position, size, or aspect ratio.



Simulated screen.
Display not included.

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DVPHD-8 – Rear View



Other available input cards

QuickSwitch HD®

Crestron exclusive QuickSwitch HD technology eliminates the annoying latency and blanking that plagues other digital switchers and video processors. Switching between inputs of any type is fast and fluid on the DVPHD.

What is QuickSwitch HD?

Viewing HDCP encrypted content involves a complicated process of handshaking and authentication between all the sources, displays, and other devices in the system before an output signal can be delivered. This process normally occurs every time a signal is switched, causing a complete loss of signal for up to 15 seconds whenever a new source is selected. QuickSwitch HD technology alleviates this issue by maintaining a constant HDCP connection with each device in the system, eliminating the need to re-authenticate each time a different source is selected, providing smooth, uninterrupted transitions between all sources.

Advanced Image Processing

On any sized display, whether viewing a full-screen image or multiple windows with graphics, the DVPHD scales its output perfectly to match your display's native resolution and aspect ratio. VXP® video processing with fully adaptive deinterlacing achieves exceptional realism and rich detail from standard-definition, high-definition and computer sources.

Customizable Graphics

Besides displaying video and computer images, the DVPHD includes our 24-bit graphics engine with alpha channel transparency for creating dramatic visual effects and conveying all kinds of useful data. Use your choice of background textures, full color images, logos, and other design elements to create the perfect look and feel for your application. Use dynamic graphics and text, crawling text, pop-up windows, animations, and multimode objects to deliver your message with clarity and style.

HDCP Management

The DVPHD is the first multi-window video processor of its kind that handles HDCP (High-bandwidth Digital Content Protection) to work with a complete range of digital video players, cable and satellite receivers, multimedia computers, displays, and projectors — now and into the future. While other manufacturers ignore HDCP completely, the DVPHD actually performs advanced HDCP signal management, allowing up to eight HDCP encrypted sources to be combined on one high-definition screen.

Why does HDCP matter?

As the move to digital takes hold, more and more content providers are using HDCP to protect their DVDs, Blu-ray Discs, broadcast signals, and online content against unauthorized copying. Analog connectivity, which can't support HDCP, is being eliminated from the computers and AV equipment being sold today, and soon content providers will be taking full advantage of the new digital technology to ensure only authorized users may view their content in all its high-definition glory. Systems that don't support HDCP simply won't let you display all this HD content.

Touch Screen Interface

The DVPHD can transform a third-party touch screen monitor, pen display, whiteboard, or touch-enabled flat panel display into a full-featured, large-scale Crestron touch screen.^[4] This opens a host of possibilities for special control and presentation applications such as interactive kiosks, museum and tradeshow exhibits, training rooms, and command centers. Employing Crestron DNav technology, the DVPHD lets users scroll effortlessly through menus and toolbars with a natural sweep of the finger to select from lists of touch screen apps, media titles, and more.

As an alternative to touch screen, the graphical interface can also be navigated using an onscreen cursor driven by a wired or wireless mouse, or by discrete commands from a separate touch screen, computer, keypad, or handheld remote.

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Vast Touch Screen Support

The DVPHD is compatible with more touch screen displays than any other touch screen interface on the market. Many dozens of models are supported from numerous manufacturers, with more being added all the time. With a vast array of sizes available in a variety of tabletop, flush mount, and other specialized configurations, there's sure to be a solution that's perfect for your custom application.^[4]

V-Panel™ Integration

A Crestron [V-Panel](#) display works impeccably with the DVPHD to deliver a very stylish and flexible high-definition touch screen solution for a range of uses. The V-Panel display connects to the output of the DVPHD via a DigitalMedia™ transmitter or switcher, affording a very streamlined single-wire interface to the V-Panel up to 450 feet (137 m) away.^[5]

HD Annotation

Only Crestron lets you annotate in real-time over *any* high-definition video image. Whether conducting a boardroom meeting, training seminar, or classroom lecture, annotation helps put the fine point on any presentation. In combination with a touch screen display, the DVPHD provides the essential annotation tools to make your point with maximum impact, letting you illustrate your thoughts over video and computer sources, and sketch out ideas on a whiteboard screen — easily and intuitively. Brush sizes and colors are selectable on the fly for ultimate clarity. Moving images can be frozen on screen to allow pinpoint annotation over a still picture. You can even annotate over two or more different sources at once for easy side-by-side comparison of multiple related images.

Guidebar® Technology

For the ultimate HD annotation solution, Crestron offers the [DVPHD-GB](#), a version of the DVPHD optimized for annotation with dual outputs for separate presenter's touch screen and audience display. The DVPHD-GB features "Guidebar" controls on the presenter's touch screen to enable command over annotation, AV, lighting, and other functions. The Guidebar resides conveniently at the top, bottom, or sides of the presenter's screen without obscuring the video image, and is only visible to the presenter, so the audience sees just the full-screen video image with annotations. Please refer to the [DVPHD-GB](#) spec sheet for complete information.

Interactive Annotation

Crestron exclusive Remote Annotation capability lets up to 90 individual touch screen users "mass annotate" over the same image, supporting efficient and effective interaction between participants in a classroom, courtroom, council chamber, operating room, or command center.

Multi-Format Support

The DVPHD is custom-configurable to accommodate a full range of input signal types.^[1] Any resolution up to 1920 x 1200^[6] can be supported, with an incredible 125 pre-defined "standard" resolutions, and the ability to define any custom resolution. Available inputs include:

- **HDMI** - Supports high-definition digital video with HDCP and Deep Color. Handles resolutions up to HD 1080p60 or 1080i30, and WUXGA 1920x1200. Each HDMI input includes a complementary HDMI output to pass the incoming video and audio signals through to another HDMI device. HDMI inputs are also compatible with DVI and DisplayPort

Multimode sources. The DVPHD can be configured with up to four HDMI inputs.^[2,7]

- **DVI-I** - Supports DVI digital video signals, as well as RGB/VGA or component analog signals. Handles HDCP and Deep Color at resolutions up to 1080p60 and WUXGA. Also handles 1080i interlaced signals via analog. DVI is also compatible with HDMI and DisplayPort Multimode sources. The DVPHD can be configured with up to four DVI-I inputs.^[2,7]
- **Multi-format BNC video** - Supports analog component, S-Video, and composite video sources. Handles NTSC, PAL, and HD 1080i interlaced signals, as well as progressive signals up to 720p. The DVPHD can be configured with up to eight multi-format BNC video inputs.
- **SDI** - Supports SDI and HD-SDI digital video signals up to 1080i30 or 1080p30. The DVPHD can be configured with up to four SDI inputs.
- **QuickMedia®** - Allows for direct connection to a Crestron QuickMedia system.^[7,8]

HD Display Output

Through its DVI-I output, the DVPHD can handle virtually any display device, providing a DVI, HDMI, or analog RGB signal at any resolution up to 1920 x 1200. Interlaced 1080i output is also supported via DVI or HDMI only. A QM output is included, allowing easy extension of the RGB output signal to feed a display device up to 450 feet away.^[2,6,7,9,10]

Auto-Configuration

The DVPHD is easy to install, configuring itself automatically to match all the different sources and displays as you connect them. Input sync-detection sets the optimum format, resolution, and scan rate for each source^[9], while EDID (Extended Display Identification Data) adapts the output to match the connected display device. Manual adjustments and built-in test patterns are also available to allow fine adjustment of every input and output when desired.

Installer-Friendly Setup

Whether testing a new install or setting up for final operation, the DVPHD provides several easy methods for accessing all the essential controls and settings. On-screen setup is available right from the main output, navigable using a touch screen or mouse. The onboard Web server affords an alternate setup option, allowing for secure configuration and operation from any location using an ordinary Web browser on a networked computer. Setup can even be attained right from the front panel using the large LCD display.

Right out of the box, the DVPHD provides several display scenarios to choose from, with the ability to define a fully-working setup in minutes. Built-in test patterns even eliminate the need for an external pattern generator for proper display calibration. Advanced functionality and appearance is afforded through custom programming using the Crestron suite of software solutions.

Unparalleled System Integration

Both Cresnet® and high-speed Ethernet are standard on the DVPHD, providing full connectivity and seamless communication with one or more Crestron control systems to deliver the ultimate in system integration and advanced presentation control. The DVPHD is also well-suited for

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integration with [DigitalMedia](#) systems, allowing for even greater input expansion and distribution to multiple displays.

SPECIFICATIONS

Video

Scaling/Windowing Processor: VXP® video processing, eight channel image processing, resolution management, QuickSwitch HD® technology

Input Signal Types^[1]: HDMI®, DVI, DisplayPort Multimode^[2], SDI, RGB, component (YPbPr), S-Video (Y/C), composite, QuickMedia®

Input Formats: HDMI w/Deep Color, DVI, HDCP content protection support, SDI, HD-SDI, computer up to UXGA/WUXGA, HD up to 1080i and 1080p60, NTSC or PAL

Input Resolutions, Progressive: 640x400 to 1920x1200, 480p, 576p, 720p, 1080p^[6]

Input Resolutions, Interlaced: 480i, 487i (SDI), 576i, 1080i

Output Signal Types: DVI, HDMI, RGB, QuickMedia^[2,9,10]

Output Formats: DVI, HDMI w/Deep Color, HDCP content protection support, computer up to UXGA/WUXGA, HD progressive up to 1080p60, HD interlaced @ 1080i only

Output Resolutions, Progressive: 640x400 to 1920x1200, 480p, 576p, 720p, 1080p^[6]

Output Resolution, Interlaced: 1080i via DVI or HDMI only

Color Depth: 24-bit, 16.7M colors

Analog Gain: 0dB (75 ohms terminated)

Analog Bandwidth: 400MHz

Graphics Engine

24-bit color depth (non-palette), 8-bit alpha channel transparency, 16.7 million colors, Synapse™ image rendering algorithm, multi-mode objects, DNav dynamic menu objects, dynamic graphics, crawling text, PNG translucency, full-motion (60 fps) animation, transition effects, color key video windowing, real-time and remote annotation

Memory

DDR RAM: 256 MB

Flash: 64 MB

Memory Card: Accepts up to 4 GB (1 GB CompactFlash® card included)

Maximum Project Size: 200 MB

Touch/Mouse Device Support

In addition to Crestron V-Panel, compatible touch screen products are offered by (but not limited to) the following manufacturers:

3M® Touch Systems*

AU Optronics® (AUO)*

Bi-Search International*

Canvys®*

Comprel (Italy)*

CyberTouch®

DCD Display Solutions (Italy)*

Dialectica (Russia)*

Digital Systems Engineering

DisplayLite (UK)*

Display Werks*

Elo Touch Solutions™

Equipements Scientifiques (France)*

Hatteland® Display*

Horizon Display*

HP® Compaq®

Hyundai

IQ Automation (Germany)*

Kristel® Displays*

LG®*

NEC®*

NextWindow®

One World Touch*

Planar®

Power Products (Czech Republic)*

Samsung®

SMART

Telac Elektronik (Sweden)*

TouchTable®

TouchSystems*

ViewSonic®*

VTS Medical Systems

Wacom®

*Utilizes 3M MicroTouch® technology

Please contact the respective manufacturer for further details. For latest touchscreen and mouse device support information, refer to Crestron True Blue Online Help Answer ID 4666, or contact Crestron True Blue Support.

Communications

Ethernet: 10/100 Mbps, auto-switching, auto-negotiating, auto-discovery, full/half duplex, DHCP, for control and console

Cresnet®: Cresnet slave port for control and console

USB: Rear panel host ports for mouse/touch screen input, front panel client port for console

RS-232: Bidirectional, up to 115.2k baud, hardware and software handshaking, for console and mouse/touch screen input

Connectors

INPUT – HDMI IN: Up to (4) 19-pin Type A HDMI female^[1];

HDMI digital video/audio inputs^[7];

Signal Types: HDMI, DVI, or DisplayPort Multimode^[2];

Input Resolution, Progressive: 640x400 to 1920x1200, 480p, 576p, 720p, 1080p^[6];

Input Resolution, Interlaced: 480i, 576i, 1080i

INPUT – HDMI OUT: Up to (4) 19-pin Type A HDMI female;

HDMI digital video/audio outputs (pass-thru from corresponding HDMI IN)^[2];

Signal Types: HDMI, DVI^[2]

INPUT – DVI/RGB/YPBPR: Up to (4) DVI-I female (or DB15HD female via adapter included)^[1];

DVI, RGB, or component video inputs;

Signal Types: DVI, HDMI, DisplayPort Multimode, RGB (VGA), or component^[2];

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Digital Formats: DVI, HDMI w/Deep Color, HDCP content protection support;

Analog Formats: RGBHV, RGBS, RGsB, YPbPr;

Input Resolution, Progressive: 640x400 to 1920x1200, 480p, 576p, 720p, 1080p^[6];

Input Resolution, Interlaced: 1080i (analog only);

Horizontal Frequency: 15 to 112 kHz;

Vertical Frequency: 25 to 85 Hz;

Analog Input Levels: 0.5 to 1.5 Vp-p with built-in DC restoration;

Analog Input Impedance: 75 Ohms nominal;

Analog Sync Detection: RGBHV, RGBS, RGsB, YPbPr;

Analog Sync Input Level: 3 to 5 Vp-p;

Analog Sync Input Impedance: 1k Ohms

INPUT – VIDEO: Up to (8) sets of (3) BNC female, each set comprising (1) auto-detecting multi-format analog video input^[1];

Signal Types: Component, S-Video, or composite;

Formats: YPbPr, Y/C, NTSC or PAL;

Input Resolution: 480i, 576i, 480p, 576p, 720p, 1080i;

Horizontal Frequency: 15 to 67.5 kHz;

Vertical Frequency: 25 to 60 Hz;

Input Levels: 0.5 to 1.5 Vp-p with built-in DC restoration;

Input Impedance: 75 Ohms nominal

INPUT – SDI/HD-SDI: Up to (4) BNC female, SDI video inputs^[1];

Signal Types: SDI (SMPTE 125M), HD-SDI (SMPTE 274M, 295M, 296M);

Formats: SDI and HD-SDI interlaced 487i, 576i, 1080i25, 1080i30;

HD-SDI progressive 720p24, 720p25, 720p30, 720p50, 720p60, 1080p24, 1080p25, 1080p30

INPUT – QM: Up to (4) 8-wire RJ45 female, QuickMedia input ports^[1,8];

Input Resolution, Progressive: 640x400 to 1920x1200, 480p, 576p, 720p, 1080p^[6];

Input resolution, interlaced: 480i, 576i, 1080i;

Horizontal Frequency: 15 to 91 kHz;

Vertical Frequency: 25 to 85 Hz;

Delay Skew Compensation: 0 to 22 ns;

Connect to QM output ports of any QuickMedia devices via CRESCAT-QM or CRESCAT-IM cable;

Maximum Cable Length: 450 ft (aggregate distance from QM origination)

OUTPUT – DVI/RGBHV: (1) DVI-I female (or DB15HD female via adapter included);

DVI or RGB video output^[10];

Signal Types: DVI, HDMI, or RGB (VGA)^[2];

Digital Formats: DVI, HDMI w/Deep Color, HDCP content protection support, EDID;

Analog Formats: RGBHV;

Output Resolution, Progressive: 640x400 to 1920x1200, 480p, 576p, 720p, 1080p^[6];

Output Resolution, Interlaced: 1080i (digital only);

Horizontal Frequency: 30 to 91 kHz;

Vertical Frequency: 50 to 85 Hz;

Analog Sync Output Type: RGBHV;

Analog Sync Output Level: TTL, 5Vp-p

OUTPUT – QM: (1) 8-wire RJ45 female, QuickMedia output port^[9,10];

Format: RGBHV;

Output Resolution: Same as RGBHV OUTPUT;

Connects to QM input port of any QuickMedia device via CRESCAT-QM or CRESCAT-IM cable

RS-232: (1) DB9 female, bidirectional RS-232 port;

Computer console and mouse/touch screen input;

Up to 115.2k baud; hardware and software handshaking support

LAN: (1) 8-wire RJ45 female;

10Base-T/100Base-TX Ethernet port for console and control

USB A – B: (2) USB Type A female host ports for mouse or touch screen input

MEMORY CARD: (1) CompactFlash Type II card slot;

For memory expansion up to 4GB, 1GB included

NET: (1) 4-pin 5mm detachable terminal block;

Cresnet Slave Port, connects to Cresnet control network

G: (1) 6-32 screw, chassis ground lug

100-250V~4.0A 50/60Hz: (1) IEC 60320 C14 main power inlet;

Mates with removable power cord (included)

COMPUTER (front): (1) USB Type B female client port for computer console

LCD Display

Green LCD alphanumeric, adjustable backlight;

4 lines x 40 characters per line

Controls & Indicators

PWR: (1) green LED, indicates connection to AC power source

NET: (1) yellow LED, indicates Cresnet bus activity

HW-R: (1) recessed miniature pushbutton for hardware reset, reboots the processor

SOFTKEYS: (6) pushbuttons for activation of LCD driven functions and passcode entry

MENU: (1) pushbutton, steps menu back one level

▲, ▼: (2) pushbuttons, scroll up or down through menu and adjust menu parameters

ENTER: (1) pushbutton, executes highlighted menu or value

DISPLAY 1 – 4: (4) pushbuttons and red LEDs, used to configure Out-Of-The-Box-Functionality (OOTBF) or select output

INPUTS 1 – 8: (8) pushbuttons and red LEDs, select input source

LAN (rear): (2) LEDs, green indicates Ethernet link status, yellow indicates Ethernet activity

SETUP (rear): (1) miniature pushbutton and (1) red LED, used for TSID and Ethernet autodiscovery

Power Requirements

Main Power: 4 Amps @ 100-250 Volts AC, 50/60 Hz

Cresnet Power Usage: Does not draw power from Cresnet

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Environmental

Temperature: 32° to 104°F (0° to 40°C)

Humidity: 10% to 90% RH (non-condensing)

Heat Dissipation: 342 BTU/hr

Enclosure

Chassis: Metal, black finish, side-vented variable-speed fan cooling

Faceplate: Metal, black finish with polycarbonate label overlay

Mounting: Freestanding or 3U 19-inch rack-mountable (adhesive feet and rack ears included)

Dimensions

Height: 5.32 in (136 mm);
5.20 (133 mm) without feet

Width: 17.29 in (439 mm);
19.0 in (483 mm) with ears

Depth: 14.44 in (367 mm)

Weight

15.32 lb (6.95 kg)

MODELS & ACCESSORIES

Available Models

DVPHD-8: 8-Window High-Definition Digital Video Processor - 4 DVI-I & 4 HDMI® video inputs

DVPHD-4: Quad-Window High-Definition Digital Video Processor - 2 DVI-I & 2 HDMI® video inputs

DVPHD-PRO-R: 8-Window High-Definition Digital Video Processor - 4 DVI-I & 4 multi-format BNC video inputs

DVPHD-QUAD-R: Quad-Window High-Definition Digital Video Processor - 2 DVI-I & 2 multi-format BNC video inputs

DVPHD-DUAL-R: Dual-Window High-Definition Digital Video Processor - 1 DVI-I & 1 multi-format BNC video inputs

DVPHD-CUSTOM*: High-Definition Digital Video Processor w/Custom Input Configuration *see online DVPHD Configuration Tool

Available Accessories

CBL Series: Crestron® Certified Interface Cables

Notes:

1. Actual signal types and quantities are dependent on the selected input/output card configuration. To configure a DVPHD with input and output cards, please select one of the pre-configured models or use the online [DVPHD Configuration Tool](#) to configure a custom model. All input and output cards must be factory-installed.
2. HDMI inputs require an appropriate adapter or interface cable to support DVI or DisplayPort Multimode signals. DVI-I inputs require an appropriate adapter or interface cable to support HDMI, DisplayPort Multimode, RGB/VGA, or component signals. DVI-I output requires an appropriate adapter or interface cable to support HDMI or RGB/VGA signals. A VGA to DVI-A adapter is included for use with each DVI-I input and output. [CBL-HD-DVI](#) interface cables are available separately.

3. Each video window is fed by a dedicated input, and the quantity of windows is limited to the quantity of inputs. While it is possible to dynamically select which input appears in a single window, it is not possible to view a single input in more than one window at a time.
4. For latest touch screen device support information, refer to Crestron True Blue Online Help [Answer ID 4666](#), or contact [Crestron True Blue Support](#).
5. A LAN connection and Ethernet-enabled control system are required for use with a V-Panel display. Refer to the [Crestron DigitalMedia Design Guide, Doc. #4546](#) for complete DM wiring guidelines.
6. Refresh rate is limited to 60Hz or lower for resolutions of 1600 x 1200 or higher. Support for 1920 x 1200 via analog RGB or QM requires a source or display device that supports reduced blanking.
7. The DVPHD does not process or pass audio signals, except each HDMI INPUT passes video with audio to its corresponding HDMI OUTPUT only. The DVI-I, SDI, and QM inputs and outputs do not support audio.
8. The QM inputs do not support input sync-detection. QM inputs require a QM transmitter or other QM device to accommodate conventional video sources.
9. The QM output supports RGBHV format only. QM output requires a QM receiver or other QM device.
10. The analog RGB and QM outputs are disabled if HDCP is utilized.

This product may be purchased from an authorized Crestron dealer. To find a dealer, please contact the Crestron sales representative for your area. A list of sales representatives is available online at www.crestron.com/salesreps or by calling 800-237-2041.

The specific patents that cover Crestron products are listed online at: patents.crestron.com.

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