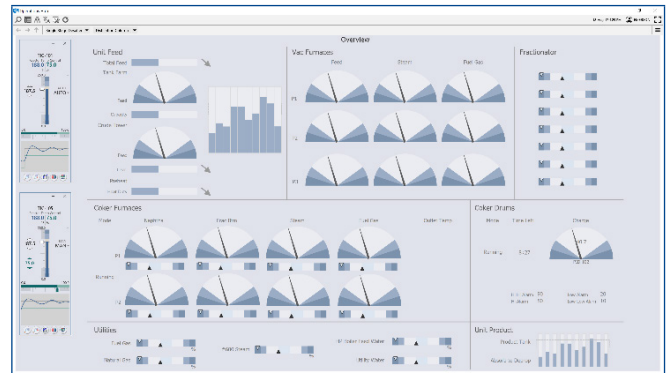# DeltaV™ Live

- Modern, built-for-purpose operations experience

- Easily create intuitive displays, with minimal to no scripting required

- Robust, secure, and intuitive user experience for operators and engineers

- Integrated historical trending and constant visibility and access to most important alarms

Manage your process with a modern, robust, secure and intuitive interface.

Introduction

Would you like to easily operate your process control system with a modern, intuitive, user friendly interface that has full-function, scalable graphics? Would you also benefit from built-in display hierarchy navigation, real-time and historical trending capabilities, alarms prioritized by the user, and system-wide, built-in security?

DeltaV™ Live provides a world-class operations experience, designed for today's high performance operator requirements. DeltaV Live is a highly customizable Operator Interface that will help you achieve operational excellence with state-of-the-art graphics development and operations platforms.

DeltaV Live has direct access to all operating information. With the DeltaV system, there is no additional server PC or other intermediary required to be able to operate your plant.

Use the standard operating desktop or modify it to fit your specific operational philosophies and work preferences.

Take advantage of single-click access to graphics, built-in hierarchical navigation, directories, and other applications.

Using Graphics Studio, you can easily configure displays, operator station layouts and even display hierarchies - all without requiring complex scripting.

Benefits

Modern, built-for-purpose operations experience.
DeltaV Live is the first distributed control system operator interface to natively support HTML5 graphics. HTML5 is one of the most adaptive and advanced graphics platforms available today, is dominant in consumer spaces, and sets the foundation for DeltaV Live to provide ubiquitous, multi-platform graphics.

DeltaV Live supports industry standards like ISA 101.01 and industrial best practices like those defined by the Center for Operator Performance (COP) right out-of-the-box. DeltaV Live allows users to design high performance graphics without relying on scripting. Important factors like display levels, screen real estate distribution and assignment, coordinated display navigation ("yoking"), areas of responsibility per operator, etc. are all available without the need for scripting, for an enhanced operations experience.

Also, provided out-of-the-box, DeltaV Live allows users to easily create different navigation experiences. Based on the display hierarchy configured, you have the option to select up to three rows of navigation buttons at configuration time. These buttons are automatically associated to displays that correspond to the assigned hierarchy level.

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Easily create intuitive displays, with minimal to no scripting required. By applying Human Centered Design (HCD) principles from the ground up, Graphics Studio eliminates unnecessary work processes, removes complexities out of routine tasks and embeds specialized knowledge right where the user needs it. Graphics Studio makes graphics design easy!

Graphic engineers no longer need to be software developers to complete tasks that range from basic to high complexity. However, if custom scripting is required, you can benefit from the power of TypeScript to develop your desired experience.

DeltaV Live Provides a Single, Cohesive View Into your Operations.

Robust, secure, and intuitive user experience. Every DeltaV workstation has direct access to all operating information, from current process values and operating displays to alarms with the proper alarm priority and timestamp. Even Alarm Help is maintained locally to ensure availability to operators.

DeltaV provides security based on Microsoft user credentials. User-specific security ensures that only authorized operators can make process changes or access specific information.

DeltaV Live provides an intuitive operational environment that presents relevant information when needed. DeltaV Live makes it even easier to expand operator visibility and awareness within the HMI by providing the flexibility to easily and securely integrate data and information beyond DeltaV to the operator console.

Instead of operators navigating away to other screens or popups that could detract from situational awareness, DeltaV Live allows you to embed web content directly in the HMI itself in a couple of different mechanisms.

Integrated historical trending and constant visibility and access to most important alarms. Improve operator effectiveness by incorporating historical trend information for key process variables within the operator's display.

These embedded trends access any DeltaV Historian or OSI PI historian and provide the same chart view experience as Process History View.

Alarm prioritization, presentation and management focus the operator on the most important alarms.

DeltaV Live provides built-in alarm summaries, providing complete alarm information, organized by priority or time. Operators can view all alarms or alarms for a specific unit or area, and can select the Alarm Help for a particular alarm. The alarm banner provides constant visibility and one-click access to alarms. This allows operators to easily access the most important alarms and quickly determine the proper response.

Product Description

DeltaV Live provides a complete set of high performance tools: operator graphics, sophisticated alarm management and presentation, embedded historical trending and system-wide security. It also includes fully independent display configuration capability with Graphics Studio, allowing graphics design while the runtime engine is still active.

Each workstation independently manages alarms and data access to and from different controllers. This includes alarm information such as when the alarm occurred, whether the alarm is suppressed and even access to the specific help for that alarm.

Individual users can have specific privileges defined that determine which functions (e.g., operate or tune) they are allowed to perform. These user privileges can be defined for a section of process, and even for individual parameters, enabling the privileges to be easily tailored to meet your plant operating philosophy.

DeltaV's exclusive Flexlock ensures that operators remain dedicated to monitoring, troubleshooting, and maintaining the process according to plant operating philosophies. Operators are locked in to their system responsibilities so that nothing can preempt their duties.

High-resolution graphics allow extensive detail and flexibility in the way information is displayed. This easy-to-use system enables you to creatively present your important process control information. DeltaV Live's scalable graphics don't depend on a specific display resolution. You are free to design your graphics based on one aspect ratio and present them on any monitor size and resolution.

DeltaV Live includes powerful graphics capability. Based on process conditions, virtually any graphic element can have visually dynamic characteristics, including color, size, and movement. You can compare values and perform math functions as part of the animation of a graphic element.

DeltaV Live also includes predefined functionality such as full-size and small faceplates, trends, alarm summaries, and detail displays. This allows you to focus on building the right displays instead of creating custom operator interface designs and layouts.

Operators can intuitively operate the process with built-in capabilities such as viewing integrated historical trending, dragging a slider to change a setpoint on a loop faceplate, selecting from a list of valid selections to start or stop a pump, or entering a SIS value using the patented DeltaV SIS secure write.
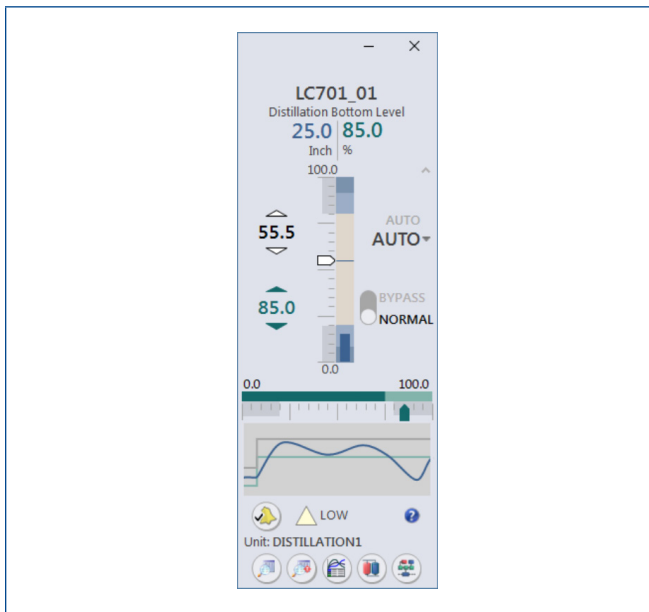
Sample loop faceplate.

Operators can access context-sensitive DeltaV information in other applications such as Control Studio and online Alarm Help with a single click from a faceplate, when these related DeltaV products are on the workstation.

DeltaV Live provides electronic signature verification for your critical parameters, addressing the requirements of 21 CFR Part 11. The parameters that require electronic signatures are defined with the control module, thus consistent electronic signature policies are applied to the parameter, regardless of the operator display being used.

Predefined functionality also includes Human Centered Design (HCD) display components, which follow recommendations and guidelines from the Center for Operator Performance (COP) and ISA 101.01 standards. These components provide

integrated alarm, status and operating information, predefined based on industry best practices and display human factors. The display components incorporate HCD considerations such as shape and color to provide easy process monitoring when the process is normal, along with clear indication of alarms and abnormal statuses, without having to limit displays to a few shades of grey.

These display components are configured to function with five different color themes, allowing you to easily select the theme that is most appropriate for your control room. The operators can be allowed to change the themes at runtime. You can, of course, also change the colors to match your requirements.

With the appropriate system licenses, operators can add and operate batches using the standard DeltaV Live batch displays, as well as view batch status. Operators can also enter comments and answer prompts related to active batches.

Integrated batch operation.

Standard Operating Layouts. The DeltaV operating desktop is specifically designed for the critical needs of process automation. DeltaV Live provides users with several standard monitor layouts. In addition, you can create your own layouts and combine different monitor sizes to fit your operational strategy by just dragging and dropping screens onto your layout canvas.

These standard layouts include operator navigation for alarms, graphics, faceplates and other applications. Monitors are divided into four pre-designed sections when using traditional (16:9) monitors:

- **Menu Bar.** The top of the screen is dedicated to the toolbar. It provides single-click access to important graphic displays, directories, and other applications. The toolbar offers several predefined buttons that you can add, delete, or modify.

- **Navigation Bar.** Single row of navigation buttons that will automatically reflect the display hierarchy.

- **Main Display.** The center of the screen is the main display, the primary working area featuring the process graphics. These correspond to Level 1, Level 2 or Level 3 displays when using hierarchical displays, and they can range from typical process line displays to highly sophisticated graphics.

- **Alarm Banner.** The bottom of the screen is dedicated to the alarm banner. The alarm banner displays the five highest priority alarms based on the currently logged on operator. By simply selecting an alarm, the operator goes directly to the process graphic and the faceplate is automatically displayed.

You can choose to use the full width for the main display, or choose to use this space for additional operator navigation. Additional optional sections include:

- **Faceplates.** Optionally dedicate an area of the main display to show faceplates, which will guarantee that faceplates don't cover process graphics. They can also be shown outside of that dedicated area when several faceplates are needed open at the same time.

- **Watch Area.** Operators can customize this area to show the important preconfigured control tags they want to observe, perhaps due to current process conditions. The parameters remain visible even while navigating through different displays. Using this area is as simple as dragging and dropping those control tags on it, and important information will show up in the watch area.

- **Critical Alarms.** Critical alarms are displayed separately to ensure that operators don't lose sight of these important alarms.

You can use one of the default DeltaV operating layouts, or easily modify them. In addition, with DeltaV Live scalable graphics, you won't need to reconfigure your displays if you change your monitors or layouts later.
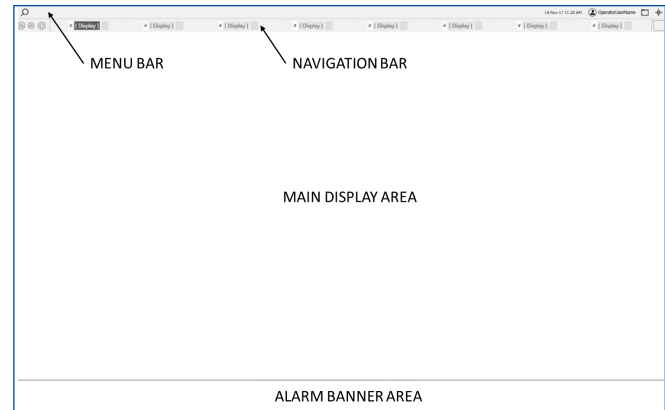
Alarms. With DeltaV Live, operators do not have to waste time searching amongst multiple alarms to find the ones that are most important. The DeltaV system uses a sophisticated algorithm that analyzes the alarm priority, whether the alarm has been acknowledged, if the alarm is still active, and the operator's scope of responsibility to provide the alarms in order of their importance.

Although many alarms may be present in your system, only the alarms within an operator's area of responsibility are shown. This means that the operator is not distracted by alarms from other areas of the plant. If an operator with different responsibilities logs on, the alarm banner automatically adjusts to his/her span of responsibility.

The alarm banner displays the most important alarms, always presenting the alarm of highest importance on the left. Operators can view the faceplate and process graphic associated with the tag in alarm by simply clicking on the alarm in the alarm banner.

The alarm banner's auto eclipsing can reduce multiple alarms from a control tag or even from process unit down to the one most important alarm. You can choose to have all critical priority alarms individually shown while lower priority alarms are consolidated. Low priority alarms can be auto-acknowledged when coming into or going out of the active alarm condition.

Alarms are also displayed on faceplates, process graphics and alarm summaries. The alarm summaries show all active alarms for the operator, all alarms for an area, or all alarms for a unit. The navigation bar can show a count and an indication of the highest priority alarm for either the portion of the equipment hierarchy that the display represents or just for the control modules that reference that display as their Primary Control Display.

Alarms are prioritized, managed, and timestamped at the source (e.g., a controller). This ensures that an alarm is displayed with the same priority, acknowledgment status, and timestamp across multiple workstations.

Operators with the right privileges can suppress alarms such that they no longer are shown in the alarm lists. Operators can view the suppressed alarms on the standard suppressed alarm display.

With additional privileges, you can change individual alarm priorities, limits, or conditional alarm settings your process requires.

Alarm presentation is consistent across all Operator Stations. All alarms of the same priority are displayed identically throughout the system. Alarm priority characteristics are defined globally for the system with DeltaV Explorer.

Horn acknowledgment is managed for all workstations. When the horn is silenced at one workstation, all other workstations sounding the horn for the same reason are also silenced.

Trending. Historical information is important for day to day operation. Historical charts can be embedded into the operator displays, improving operator productivity by placing the information right where it is needed and eliminating the need to launch separate trend charts.

Faceplates include a trend of their control tags, and, when the operator needs a larger trend, pressing the trend button on the faceplate will open Process History View. Operators can also easily create their own historical charts on-the-fly by simply right clicking on the DeltaV HCD display components.

Easily and Securely Integrate Web Content in DeltaV Live. Since its release in v14.LTS, the DeltaV Live library has included a web object that allows users to securely view content embedded within operator graphics, this content can include allowlisted web applications, CCTV camera feed, or websites that have content available in an iFrame. Users can easily manage allowlisted web content in Graphics Studio.

Starting in v15.FP1, web content can also be viewed in DeltaV Live as a unique, dedicated Web Display. Instead of the web content being embedded within another display, this Web Display behaves as any other operator graphic: it can be included in display sets, participate in hierarchical display navigation, and has its own dedicated display frame. It also features a dedicated toolbar that includes buttons for navigation, home, and zoom settings, as well as the option to autohide.

Example Web Display in DeltaV Live.

Display Configuration. DeltaV Live graphics are configured using Graphics Studio. On a single workstation, you can configure graphics while still operating your plant with DeltaV Live. Display configuration debugging is easily accomplished by testing displays locally or choosing a single workstation to validate changes before deploying graphics system-wide.

Graphics design is assisted by a true WYSIWYG (What You See Is What You Get) interface. All control system information is readily available for display configuration simply by browsing. Display configuration is designed for process control, including standard functionality such as faceplates, trends, alarm summaries and display directories. Display configuration is loaded with predefined functionality so that you can focus on building displays.
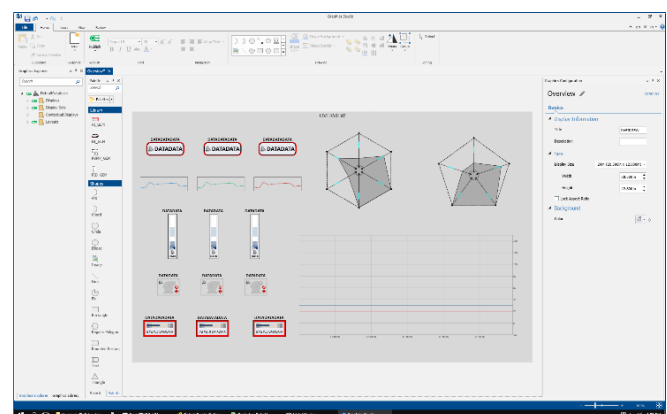
You can use this functionality out-of-the-box or modify it to fit your requirements. For example, perhaps you would like to have alarm summary information for a specific unit as part of your unit process graphic. Simply place a new alarm summary on your display and define it based on what alarm information you would like to show.

Class-based GEMs. Graphics Studio includes patented support for Class-based GEMs. A Class-based GEM is a Graphical Element that can be reused throughout your graphics while maintaining a link to the class. This functionality allows you to update all of the GEMs in your graphics at once by simply changing the class. In addition, GEMs allow individual overrides from the class, so that you can modify a GEM on one display – perhaps to move a portion of the GEM that is covering up another item on that display without needing to break the GEM from the GEM Class. These changes are tracked individually per GEM and can be easily reverted back to the class configuration, if needed.

If custom scripting is required, you can use the fully integrated TypeScript programming language to create even more flexible and powerful display capabilities.

DeltaV Remote Client Support with DeltaV Live.
The Standard tier of DeltaV Live is included with all DeltaV systems beginning in version 14.LTS; no additional licenses are required for remote clients using the Standard tier. For the Premium tier of DeltaV Live, each remote session will require a DeltaV Live Operations Premium Performance Pack license (VE2104P01).

When the Remote Desktop Server is an Operator or Base station, support for DeltaV Live in v14.LTS is provided for the following.

- A total of 12,000 datalinks across all sessions

- Up to 5 concurrent runtime sessions (not exceeding the 12,000 datalink limit). Up to 8 concurrent runtime sessions can be achieved by:

  - Increasing the allocated virtual CPUs to 16 for a VRTXvenvironment, or

  - Using a dual-processor RAID 10 physical machine

- Up to 10 concurrent engineering sessions. Up to 15 concurrent engineering sessions can be achieved for a machine with 32GB of RAM by:

  - Temporarily increasing the allocated virtual CPUs to 16 for a VRTX environment, or

  - Using a dual-processor RAID 10 physical machine

When the Remote Desktop Server is a ProfessionalPLUS, support for DeltaV Live in 14.LTS is provided for:

- A total of 12,000 datalinks across all sessions

- Up to 4 concurrent runtime sessions (not exceeding the 12,000 datalink limit)

- Up to 4 concurrent engineering sessions

- Up to 7 concurrent engineering sessions can be achieved for a machine with 32GB of RAM by:

  - Temporarily increasing the allocated virtual CPUs to 16 for a VRTX environment, or

  - Using a dual-processor RAID 10 physical machine

Concurrent sessions can also be a combination of engineering and operator sessions. When the Remote Desktop Server is part of a virtual DeltaV Virtual Studio environment where high numbers concurrent of engineering and runtime sessions (e.g. >5) are desired, default settings for virtual processors and memory should be temporarily increased for optimal performance; virtual Remote Desktop Servers should have the number of virtual processors (CPUs) allocated increased to 16 and should be assigned 32GB of RAM. A dual-processor server such as those in RAID 10 machines is recommended for physical machines.

If normal use will require more than four (4) concurrent runtime sessions in constant use, we strongly recommend a dedicated server for engineering sessions and another for operator sessions instead of a single shared server.

All concurrent sessions can be open at the same time as long as the total of all datalinks on all open displays does not exceed 12000 links. Full operator, display development and "view only" sessions all count against the active link limit.

Live Video Integration

With DeltaV Live, operators can easily pan, tilt, and zoom the camera view from within the operator's display. It is also possible to switch cameras or stream several feeds simultaneously.

The benefits of having a live video feed embedded within an operator display are many and include:

Safety. Enables an additional "all-clear" visual before the execution of a process start-up, shut-down, or turn-around. Allows operators to monitor hazardous areas.

Security. Additional eyes on the process area, remote plant areas, or site perimeter.

Productivity. Live visual of the process being controlled (e.g. boiler) alongside the process measurements.

Emissions Monitoring. With video monitoring for plant emissions, fines can be reduced to the minimum by demonstrating exact start and stop times to regulatory officials.

All of the plant's video information can be recorded and stored on a central server that can store months of video data depending on your needs or to comply with emissions regulations.

Ordering Information

DeltaV Live is offered in two tiers that deliver customized features, tailored to the needs of your project. The Standard tier of DeltaV Live (included out of the box beginning with v14.LTS) has all of the functionality of DeltaV Operate Runtime and Configure, with some additional features associated with the HTML5-based engine and interface. Existing DeltaV system-wide and operator workstation licenses will include the Standard tier of DeltaV Live when upgraded to v14.LTS. This tier does not require any additional licenses to be added to the DeltaV Operator Workstation licenses (full span, view only) or the ProfessionalPLUS workstation.

The Premium tier of DeltaV Live has additional features for both the Runtime and Configuration environments, highlighted in the table below.

Functionality	Standard	Premium
Runtime Environment		
Display Hierarchy Navigation	X	✔
Watch Areas	X	✔
Alarm Rollups	X	✔
Drag and Drop from DeltaV Live GEMs to PHV*	X	✔
Configuration Environment		
Class-based GEM Creation and Modifications	X	✔
SQL Data Sources	X	✔
Runtime Languages	2	8
SFC Visualization**	X	✔
OOB Table Object	X	✔

*Available with v14.FP2 and later releases.
**Available with v15.LTS and later releases.

To take advantage of DeltaV Live Premium features, the overall system must be at the "ProfessionalPlus Premium Workstation Software" level, either purchased as a new Premium system (VE2101PS) or upgraded with the "Standard-to-Premium ProfessionalPlus Workstation Software" license (VE21USPS). The DST size for the Standard-to-Premium ProfessionalPlus license must exactly match the existing ProfessionalPlus DST total (base + any scaleups). Future scaleups to the ProfessionalPLUS require a VE21PUPS ProfessionalPLUS Premium Station DST Scaleup license.

In addition to the ProfessionalPLUS license, each workstation that requires Premium features will need a "DeltaV Live Operations Premium Performance Pack" VE2104P add-on license, in addition to the conventional DeltaV Operator Workstation span of control license (full span, zero span, or view only).

Description	Model Number
ProfessionalPLUS Premium Workstation Software, xxxx DST	VE2101PSxxxx*
Standard-to-Premium ProfessionalPLUS Workstation Software, xxxx DST	VE21USPSxxxx*
DeltaV Live Operations Premium Performance Pack license	VE2104P01

*Where xxxx represents the DeltaV system DST size. The DST size varies from 25 to 30,000 DSTs.

Please contact your local sales office if you have any questions.

The DeltaV Live licenses provide flexibility for your project. You may choose to have the ProfessionalPlus Premium Workstation software license, but not license any operator workstations with the Premium Performance Packs, or vice versa. This allows you to select the system capabilities that best match your project requirements. For example, you could take advantage of a Premium configuration feature (e.g., Class-based GEMs) but not the runtime features (e.g. display hierarchies, alarm rollups).

Related Products

For detailed information about the following applications, refer to the appropriate product data sheet:

Alarm Help. Provides Operators with in-context access to alarm response information from DeltaV Operate.

Alarm Mosaic. Provides dynamic visualization of current active alarms for a highly comprehensible view of alarm floods. Operator actions are integrated into Alarm Mosaic views for efficient operator evaluation of actions that may have contributed to the alarms. A history view in Alarm Mosaic enables comprehensive shift transition discussions of alarms and actions occurring in previous shifts.

AMS Device Manager Client SC for Device Status. Provides the ability to view the status of HART and FOUNDATION Fieldbus devices (license from AMS Suite: Intelligent Device Manager required for configuration capability).

Campaign Manager Operator Interface. The interface used by the operator to create and control campaign execution.

Control Studio On-line. Graphically monitor and troubleshoot running control strategies.

DeltaV Mobile. Securely monitor your process remotely by viewing data on iOS or Android mobile devices. Convert DeltaV Operate displays and view them from a web browser on a Windows PC or tablet.

DeltaV InSight. Control performance monitoring and loop tuning application embedded in DeltaV. Identifies control problems and improves control performance with automatic process learning, loop diagnostics, tuning, and automatic report generation.

DeltaV Predict and PredictPro. Model Predictive Control (MPC) which runs in DeltaV to provide multivariable control and optimization for small and large applications. Includes off-line model identification and simulation, plus on-line MPC with operator interface.

Diagnostics. Facilitates checking the overall health of your system and quickly resolving system hardware, software, and configuration issues.

History View Suite. Monitor your plant's continuous, batch and event data—historically and in real time.

Wireless Video Service. Complete wireless services solution to integrate video into DeltaV Operate Displays.

Prerequisites

DeltaV Live must be loaded onto a workstation. A variety of hardware is available to meet your specific requirements. Refer to the DeltaV Workstation Hardware Product Data Sheet.

One ProfessionalPLUS Station is required for each DeltaV system. Refer to the ProfessionalPLUS Station Software Suite Product Data Sheet.

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