DeltaV™ Mobile

- Make faster and better decisions with secure, read-only access to your critical operational data, whenever and wherever you need it
- Stay connected to your operations by monitoring real-time data, trends, and alarms
- Improve situational awareness by receiving proactive alarm notifications
- Streamline workflows by easily combining data from multiple sources into consolidated views
- Facilitate information sharing and leverage subject matter experts, wherever they may be located

Introduction

Would you like to monitor the performance and health of your operations in real time by securely accessing your critical data, on-demand? Do you want to be aware of relevant alarms and events, even when you don’t have easy access to a PC? Would you like to improve productivity and decision-making by having an easy way to securely and efficiently share data and collaborate with experts across your enterprise?

With DeltaV™ Mobile, you can have secure, read-only access to your most important process data and keep your operations at your fingertips, whenever and wherever you need it. You can improve safety, productivity, and awareness by being instantly notified about alarms or abnormal situations on your mobile device or via email, even if you are offsite. Critical alarms and alerts can also be escalated to notify people throughout the organization at the right time.

The DeltaV Mobile platform allows you to combine data and alarms from multiple DeltaV and non-DeltaV systems into consolidated and intuitive views, with no additional DeltaV configuration required. It uniquely provides the same richness of data shown on an operator workstation (alarms, real-time data, trends, and more) in mobile screens that are built for purpose. You can also monitor data and receive alerts from non-DeltaV systems, such as OPC Classic historians. Additionally, you can remotely view the same graphics that your operator is viewing from a web browser.

DeltaV Mobile is comprised of the DeltaV Communicator, the DeltaV Portal, the DeltaV Mobile Server, a native app for iOS and Android mobile devices, and graphics and mobile configuration applications. Web View clients for viewing operator displays and dashboards in a web browser are also available. Operator displays cannot be viewed from mobile phones.

DeltaV Mobile builds on, extends, and replaces the DeltaV Executive Portal platform by bringing process data to mobile devices in addition to web-based displays. It provides one platform for securely viewing operational data through a variety of delivery mechanisms:

- Monitor real-time process values, diagnostics, alarms, and trends from iOS or Android mobile devices with the DeltaV Mobile app.
- Receive native push or SMS notifications on mobile devices. Email notifications are also available.
- View operator displays and dashboards in a web browser using a PC or Windows tablet with Web View.
Benefits

Have Your Operations at Your Fingertips, Whenever and Wherever You Need it

DeltaV Mobile provides secure, read-only access to your critical operations data, delivered to the right people, whenever and wherever they need it. It sends real-time data, historical data, alarms, and notifications to your mobile device, ensuring you always have the most accurate and current information on hand.

The tight integration with DeltaV Systems allows you to leverage your existing DeltaV configurations and easily create customized watch lists that are specific to your needs. Watch lists can also include data from non-DeltaV systems and historians.

- View DeltaV and DeltaV SIS process data, diagnostic information, and KPIs.
- View real-time process data or control module information (e.g. process variable, setpoint, output) with relevant alarms and trends all the same screen.
- Create customized watch lists that are specific to your needs.

Make Faster, More Informed Decisions by Viewing Data from Multiple Systems in Consolidated Views

Production personnel need to make fast, informed decisions based on current production conditions. However, essential information is often distributed in a variety of systems and historians.

With DeltaV Mobile, you can view the process information you need, regardless if it is in a single DeltaV System, multiple DeltaV Systems, a separate historian, or even other control systems. It allows you easily combine data from multiple sources into consolidated displays or mobile watch lists.

DeltaV Mobile can access the following data sources:
- OPC.NET DA or OPC Classic DA – access real-time data from control systems and PLCs.
- OPC.NET HDA or OPC Classic HDA – access historical data from control systems, historians, and PLCs.
- DeltaV Real-time – directly access real-time DeltaV data.
- DeltaV OPC Alarms and Events – access DeltaV alarms.
- DeltaV Event Chronicle – access DeltaV Event Chronicle information (for Web View only).
Raise Situational Awareness by Monitoring Alarms in Context with Process Information

Unlike other notifications products that require extra engineering work only to display limited alarm details, DeltaV Mobile allows you to leverage what you have already configured by securely bringing the rich alarm information from your DeltaV Systems to mobile devices. It also provides important process context with alarms, such as trends of relevant process values and recommended actions with DeltaV Alarm Help*.

You can monitor DeltaV alarms in intuitive list views that update in real time as they would on an operator workstation. Advanced filtering capabilities ensure that you only receive the alarms that are relevant to you.

- Create customized alarm lists based on filters such as area, equipment, module, category, priority, or functional classification.
- Be instantly aware of alarm state, priority, and acknowledgement status with intuitive alarm icons.
- Toggle between annunciated and suppressed alarms.
- View alarms with relevant trends and DeltaV Alarm Help.*

In addition to DeltaV alarms, you can create custom alerts for non-DeltaV data, or for DeltaV data that is not currently configured as an alarm. The rules for these custom alerts are created in DeltaV Mobile Studio. These alerts can be monitored with your watch lists, and relevant details about the alert are available in the details of a watch list item. Active alerts are also easily accessible in a rollup screen.

Stay Up-to-Date with Smart, Proactive Notifications

DeltaV Mobile proactively notifies you about alarms and events, even if you’re offsite, so you can stay current with real-time information. Unlike other notifications solutions that only send a vague message about an alarm, DeltaV Mobile provides the same detailed alarm message for DeltaV alarms that an operator would receive. You can also receive notifications on custom alerts created for non-DeltaV data or parameters that are not configured as DeltaV alarms.

DeltaV Mobile allows you to respond faster to abnormal situations by quickly connecting you to the mobile screen in the context of that notification. Deep links redirect users to a specific view in the mobile app rather than simply launching the app. Using deep links, DeltaV Mobile notifications connect you directly to the relevant, real-time alarm details and a trend for the associated parameter.

*DeltaV Alarm Help is an option available with the DeltaV Distributed Control System.

www.emerson.com/deltav
Mobile push notifications are sent through the Microsoft Azure Notification Hub and require the DeltaV Mobile Server to have internet access. You do not need to have a Microsoft Azure account, and none of your data is stored in Azure. It is simply a routing mechanism for notifications to reach your mobile device, wherever you may be located.

Email and SMS notifications are also supported. Recipients can include users that do not have the DeltaV Mobile app on their mobile devices. These notifications are routed through an SMTP email server and do not require internet access. Unlike mobile push notifications, they do not link directly to alarm details.

DeltaV Mobile can escalate an alarm or custom alert to several recipients. If a recipient does not claim the alarm or alert in DeltaV Mobile, the escalation chain will continue to other recipients. You can specify which alarm states and state changes you would like to be notified about, as well as delay, frequency, and maximum resends of notifications on a per-user basis. Notifications can also be disabled as needed.

With DeltaV Mobile, you can:

- Receive notifications for native DeltaV alarms and custom alerts created for non-DeltaV data or DeltaV data that are not configured using alarm modules.
- Filter, assign, and route alarm and event notifications to a designated recipient or multiple recipients through notification methods such as mobile push notification, SMS text, or email.
- Escalate notifications to the right people at the right time.
- Use the “claiming” in-app feature to claim a DeltaV alarm and stop the escalation chain*.
- Tap or swipe a push notification to automatically view the real-time alarm details, DeltaV Alarm Help*, or real-time values associated with a custom alert.
- Throttling settings ensure that you are not flooded with alarm notifications.
- Select the level of alarm detail displayed in notification messages.

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*Claiming is in-app only and does not affect Alarm Acknowledgement in DeltaV Operate or DeltaV Live.
Gain Insights by Analyzing Historical Trends

DeltaV Mobile delivers a premium usability experience by optimizing views of historical data for mobile screens and leveraging your mobile device’s native touch screen functionalities, allowing you to manipulate trends for further analysis.

DeltaV Mobile also features responsive views. When the mobile device is turned from portrait to landscape view, it expands the entire chart to landscape mode, where touch gestures can be used to analyze and explore the data.

- Optimized layout for viewing trends on mobile screens.
- Versatile, responsive viewing options that support portrait and landscape modes.
- Use touch gestures to activate and trace an on-screen cursor that displays y-axis values.
- Easily select or toggle between time spans, depending on how much history you need to see.
- Quickly change scales by simply tapping on the parameter of choice.
- Select which data to display on trends and customize Y-axis scaling as you see fit.

Easily Create and Assign Lists and Notifications from a Web Browser

DeltaV Mobile includes an HTML5 browser-based application called DeltaV Mobile Studio that allows you to configure watch lists, alarm lists and notifications. Simply browse your DeltaV hierarchy and select the critical data and alarms that you want to monitor and receive as notifications. It has intuitive interfaces and filters that are easily applied to create customized lists, assign lists to users, create custom alerts, set notification preferences and escalation rules, and register mobile devices. Bulk editing tools are also available to simplify setup by allowing you to quickly use existing lists to modify or create new ones.
Streamline Operations by Enabling Collaborative Workflows

DeltaV Mobile facilitates information sharing with in-app collaboration, allowing you to better leverage your team and subject matter experts, wherever they may be located. You can easily share process data and alarm information directly from the DeltaV Mobile app, enabling secure collaboration across the enterprise.

Sharing a link with other DeltaV Mobile users directs recipients to the same live mobile view that you sent, so you can look at the same synchronized information that is updating simultaneously in real time.

- Links can be shared via email or text message.
- Screenshots of alarms, process data, and trends can also be easily shared via email or text, even if the recipient doesn’t have the DeltaV Mobile app.

View Operator Displays and Customized KPI Dashboards from a Web Browser

With the DeltaV Mobile platform, you can use Web View to view DeltaV displays and create your own customized dashboards from an Internet Explorer browser.

The DeltaV Operate display conversion tool allows you to easily select the existing displays that you wish to convert and import them. Because imported displays are built with DeltaV graphics components (i.e., rectangles and lines), you can simply augment the displays in the Graphics Studio application with no need to change them.

- Choose from one to multiple Web View users to concurrently view displays and dashboards from their PCs and/or Windows tablets. Once a user logs off, the license becomes available for another user.
- Easily convert, modify, and view operator displays and customized dashboards in a web browser.
- View DeltaV alarm status, display static shapes, real-time data, common display animations, and trends.
- Create your own dashboards using the library of pre-built display gadgets or design your own gadgets in the Web Studio application.

The DeltaV Mobile Platform has Built-in Security

The DeltaV Mobile platform is designed with security in mind. Transferring your critical data to mobile devices utilizes several key aspects of secure connectivity: a multi-level segmented architecture, user authentication and authorization, and encryption.

Read-Only Access and Multi-Level, Segmented Networks

Whether viewing lists on your mobile phone or graphics in a web browser, DeltaV Mobile is strictly read-only, preventing users from inadvertently affecting operations. DeltaV Mobile topologies accommodate access at each level in the architecture to be isolated by firewalls, necessary Authentication and Authorization-Audit (AAA), and layered security.
As shown in Figure 1, the DeltaV Portal connects to the Application Station or Professional Plus on the DeltaV network via the DeltaV Communicator. A single DeltaV Portal can connect to 10 DeltaV Systems* provided that a DeltaV Communicator is installed on the Application Station or Professional Plus of each DeltaV System. When only connecting to one DeltaV System, the DeltaV Portal can also be installed on the Application Station or Professional Plus (or an operator panel connected to a standalone DeltaV PK controller).

The DeltaV Communicator transfers alarms, real-time data, and historical data to the DeltaV Portal across a firewall between Levels 2 (DeltaV network) and 3 (commonly referred to as the DMZ or plant network). These levels may vary depending on your existing network structure. Data is then transferred from the DeltaV Portal to the DeltaV.

Mobile Server, where it is arranged into lists and sent to mobile devices. Both the DeltaV Portal and the DeltaV Mobile Server can be installed on virtual machines.

Mobile devices can connect via local Wi-Fi or with secure VPN to Wi-Fi connectivity. DeltaV real-time process data, historical data, and alarms are not sent through the internet. Only mobile push notifications connect through the internet, and users have an option to disable them. Notifications may still be received via email and SMS text messages.

**Built-in Flexibility to Accommodate Various Deployment Scenarios**

Deployment can vary depending on your existing network architecture and how you plan to use DeltaV Mobile.

If you would like to access DeltaV Mobile and receive mobile notifications while onsite from a Level 4 (Enterprise level) Wi-Fi connection or while off-premise with secure VPN connectivity, you may prefer the 3-tier architecture shown in Figure 1. This involves installing the DeltaV Portal on Level 3 (commonly known as the DMZ or Plant Network), and the DeltaV Mobile Server on Level 4.

*Assumes each DeltaV System has a configuration (fhx) file size of 1-2GB. More or less than 10 DeltaV System connections can be supported depending on these file sizes.

Figure 1. Example of 3-Tier DeltaV Mobile Architecture.
User Authentication and Data Encryption

With DeltaV Mobile, you decide which users are allowed access. For the DeltaV Mobile app, users are authenticated by registering their mobile devices using a device ID and supplying valid login credentials. This process ensures that only a registered phone with an authenticated user can access the DeltaV Mobile Server. Built-in security features include:

- Two-factor authentication: whitelisting by device in combination with user credentials, validated against Active Directory or Windows Workgroup credentials.
- The DeltaV Mobile Server and DeltaV Portal require server certificates for server identity-based validation.
- DeltaV Mobile transfers data via encrypted secure communication channels. All data sent to mobile devices is encrypted using a certificate that is provided by the DeltaV Mobile Server and transmitted over HTTPS.
**PC Specifications**

For best performance, the following PC specifications are recommended for the DeltaV Mobile Server and the DeltaV Portal. Note that both servers may reside on virtual machines.

- Hard Drive – configured as RAID 1 Arrays (size depending on computer model).
  
  - 128 GB or greater

- Memory – 16 GB

- Processor – (depending on computer model):
  
  - 2.00 GHz, minimum of 4 cores

One network interface card is needed for both the DeltaV Portal and the DeltaV Mobile Server.

If you are deploying DeltaV Mobile with a 2-tier architecture as shown in Figure 2, the PC memory specification is also 16GB.

**Other Specifications**

- For e-mail and SMS notifications, a connection to an e-mail server that supports SMTP based e-mail delivery is required.

- Mobile devices that are to receive SMS notifications must support text messaging.

- The DeltaV Communicator must be installed on the same DeltaV Workstation (Application Station, Professional Plus, or operator panel connected to a standalone DeltaV PK controller) as the DeltaV Continuous Historian or the Advanced Continuous Historian (DeltaV v13.3.1 and newer). No additional OPC Alarms and Events Server license is required.

- DeltaV Mobile performance may vary depending on network performance, PC hardware, internet connectivity, and complexity of data.

- DeltaV Mobile can support up to 200 mobile device connections and 100 mobile devices accessing data from the DeltaV Mobile Server simultaneously.

- Notifications are sent from the DeltaV Mobile Server within 30 seconds after conditions for notifications are triggered.

- DeltaV Mobile can connect to up to 10 DeltaV Systems at the same site.

**Compatibility and Sizing**

DeltaV Mobile is compatible with DeltaV v11.3.1, v12.3.1, v13.3.1, and v14.3.

| **DeltaV Portal can be installed on the following DeltaV workstations** |
| DeltaV v13.3.1 and v14.3 Application Stations when using Microsoft Windows 10 (64-bit) or Microsoft Windows Server 2016 (64-bit) |

| **DeltaV Portal and DeltaV Mobile Server can be installed on the following operating systems** |
| Microsoft Windows Server 2016 (64-bit) |
| Microsoft Windows Server 2012 Standard or R2 SP1 and greater (64-bit) |
| Microsoft Windows 10 Professional (64-bit) |
| Microsoft Windows 10 IoT Enterprise 2016 LTSB (64-bit) |

| **DeltaV Mobile Studio for configuring mobile lists and registering devices can be viewed using the following browsers** |
| Microsoft Edge |
| Google Chrome |
| Mozilla Firefox |

| **Web View clients for web-based graphics can be viewed using the following browser** |
| Microsoft Internet Explorer v11 |

*Assumes each DeltaV System has a configuration (.fhx) file size up to 1GB. More or less than 10 DeltaV System connections can be supported depending on these file sizes.*
DeltaV Mobile is supported with the following mobile devices and operating systems

<table>
<thead>
<tr>
<th>Operating System</th>
<th>Supported Devices</th>
</tr>
</thead>
<tbody>
<tr>
<td>iOS 9 and newer</td>
<td>iPhone 5s, 6, 6s, 6s Plus, 7, 7 Plus, 8, and 8 Plus</td>
</tr>
<tr>
<td>KitKat (4.4) and newer</td>
<td>Samsung Galaxy S5, S6, S7, S8, S9</td>
</tr>
<tr>
<td></td>
<td>Note 5, LG G5, LG G6</td>
</tr>
<tr>
<td></td>
<td>Google Pixel XL</td>
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<tr>
<td></td>
<td>Ecom Smart-Ex 01 and Smart-Ex 02</td>
</tr>
<tr>
<td>Android</td>
<td>Samsung Galaxy S5, S6, S7, S8, S9</td>
</tr>
<tr>
<td></td>
<td>Note 5, LG G5, LG G6</td>
</tr>
<tr>
<td></td>
<td>Google Pixel XL</td>
</tr>
<tr>
<td></td>
<td>Ecom Smart-Ex 01 and Smart-Ex 02</td>
</tr>
</tbody>
</table>

Tablets:
- iPad, iPad Pro, iPad Mini
- Samsung Galaxy Tab S, S2, S3
- Huawei Mediapad
- Ecom Tab-Ex 01, Tab-Ex 02, Ecom Samsung Galaxy Tab Active and Galaxy Tab Active 2

Ordering Information

DeltaV Mobile can be purchased either as a perpetual license or an annual subscription. DeltaV Mobile users are counted on a named user basis. Each named user can register up to 3 mobile devices that can access the DeltaV Mobile app. Web View sessions are counted on a concurrent basis.

Perpetual Licenses

<table>
<thead>
<tr>
<th>Description</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>DeltaV Mobile Platform - Base Package for 5 users</td>
<td>VFDVMPSYS005</td>
</tr>
<tr>
<td>Required DeltaV Mobile base components, including five (5) DeltaV Mobile named users, and a connection for one (1) DeltaV system. Select add-on licenses below.</td>
<td></td>
</tr>
<tr>
<td>DeltaV Mobile Platform - Base Package for 25 users</td>
<td>VFDVMPSYS025</td>
</tr>
<tr>
<td>Required DeltaV Mobile base components, including twenty-five (25) DeltaV Mobile named users, and connections for up to three (3) DeltaV systems. Select add-on licenses below.</td>
<td></td>
</tr>
<tr>
<td>Additional DeltaV Mobile Users (1, 5, 10, 25, or 50 users)</td>
<td>VFDVMPAPP0XX*</td>
</tr>
<tr>
<td>Web View for web-based graphics and dashboards</td>
<td>VFDVMPWVXX</td>
</tr>
<tr>
<td>Consumed when a Web View client is open in Internet Explorer. Multiple windows from the same user require multiple sessions. Counted on a concurrent basis.</td>
<td></td>
</tr>
<tr>
<td>Additional Data Connections</td>
<td></td>
</tr>
<tr>
<td>Consumed by each data connection to another data source, such as an OPC server.</td>
<td></td>
</tr>
<tr>
<td>1 DeltaV Mobile Data Connection for 1 additional DeltaV system</td>
<td>VFDVMPDVUP501</td>
</tr>
<tr>
<td>1 OPC Real-time Data Connection</td>
<td>VFDVMPISDA</td>
</tr>
<tr>
<td>1 OPC Historical Data Connection</td>
<td>VFDVMPISHD</td>
</tr>
</tbody>
</table>

*XX represents the number of additional users or sessions.
DeltaV Mobile

Annual Support for Perpetual Licenses

<table>
<thead>
<tr>
<th>Description</th>
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</tr>
</thead>
<tbody>
<tr>
<td>If you do not currently have Guardian support for your DeltaV system, you can keep DeltaV Mobile up to date with the latest changes by purchasing support for DeltaV Mobile on an annual basis. Support prices are based on the total number of DeltaV Mobile named users.</td>
<td></td>
</tr>
<tr>
<td>Annual support for up to 5 users</td>
<td>VFDVMPGS05</td>
</tr>
<tr>
<td>Annual support for up to 10 users</td>
<td>VFDVMPGS10</td>
</tr>
<tr>
<td>Annual support for up to 25 users</td>
<td>VFDVMPGS25</td>
</tr>
<tr>
<td>Annual support for up to 50 users</td>
<td>VFDVMPGS50</td>
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</table>

Subscriptions

Subscription licenses can be renewed on an annual basis and include any product enhancements included with the subscription license model number and support.

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<thead>
<tr>
<th>Description</th>
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<tbody>
<tr>
<td>DeltaV Mobile Platform - Base Package for 5 users – annual subscription</td>
<td>VFDVMSGSYS005</td>
</tr>
<tr>
<td>Required DeltaV Mobile base components, including five (5) DeltaV Mobile named users, and a connection for one (1) DeltaV system. Select add-on licenses below.</td>
<td></td>
</tr>
<tr>
<td>DeltaV Mobile Platform - Base Package for 25 users – annual subscription</td>
<td>VFDVMSGSYS025</td>
</tr>
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<td>Required DeltaV Mobile base components, including twenty-five (25) DeltaV Mobile named users, and connections for up to three (3) DeltaV systems. Select add-on licenses below.</td>
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<td>Additional DeltaV Mobile Users – annual subscription (1, 5, 10, 25, or 50 users)</td>
<td>VFDVMSGAPP0XX*</td>
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<td>Web View for web-based graphics and dashboards – annual subscription</td>
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<td>Consumed when a Web View client is open in Internet Explorer. Multiple windows from the same user require multiple sessions. Counted on a concurrent basis.</td>
<td></td>
</tr>
<tr>
<td>Additional Data Connections – annual subscription</td>
<td>VFDVMSGDVUPS01</td>
</tr>
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* XX represents the number of additional users or sessions. These model numbers are for initial subscriptions only; model numbers for annual subscription renewals are listed separately in the price book.

**These model numbers are for customers that have active Guardian Support for DeltaV. Subscriptions that include support for DeltaV Mobile are also available for customers without active Guardian Support for DeltaV.

Annual Support for Subscriptions

Support for DeltaV Mobile is already included with all subscription purchases.

Other Notes

DeltaV Mobile is a read-only application for viewing data and receiving notifications. It is not designed for 24/7 continuous use or as a replacement for operator workstations, and it should not be relied upon for control.