



CHAPTER 1

INTRODUCTION

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Introduction

Point of View (or POV, for short) is a powerful, integrated tool that exploits key features of Microsoft operating systems and enables you to build fullfeatured SCADA (Supervisory Control and Data Acquisition) or HMI (Human- Machine Interface) programs for your industrial automation business. This Point of View Quick Start Guide is intended for individuals using POV for the first time. This publication will help you quickly familiarize yourself with the basic functions of POV.

Conventions Used



When you see the “note pad” icon in the left-hand margin, the paragraph to its immediate right will be a special note. Notes represent information that may make your work quicker or more efficient. The word **NOTE**: in boldface will mark the beginning of the text.



When you see the “exclamation point” icon in the left-hand margin, the paragraph to its immediate right will be a warning. This information could prevent injury, loss of property, or even death in extreme cases. Any warning in this manual should be regarded as critical information that should be read in its entirety. The word **WARNING** in boldface will mark the beginning of the text.

Key Topics for Each Chapter

The beginning of each chapter will list the key topics that can be found in that chapter.

Getting Started!CHAPTER
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About This Software

Point of View is powerful software for developing HMI, SCADA, and OEE/Dashboard projects that can be deployed anywhere.

Each POV project consists of:

- A project tags database to manage all runtime data, including both internal variables and scanned I/O
- Configurable drivers to communicate in real-time with programmable logic controllers (PLCs), remote I/O devices, and other data-acquisition equipment
- Animated HMI screens and OEE dashboards
- Optional modules such as alarms, events, trends, recipes, reports, scriptable logic, schedulers, a security system, and a complete database interface.

Product Features

Alarms:

In addition to all the alarm functions you'd expect, POV v7.1+SP2 also sends alarms using multimedia formats like PDF. Use remote notification to have alarms sent right to your inbox, a printer, or a smartphone. Alarms are real-time and historical, log data in binary format or to any database.

Animation:

POV gives you great command over graphics. Paste images and even rotate them dynamically. Fill bar graphs with color, or adjust the scale of objects with easy-to-use configurations. Other animations include “command” (for touch, keyboard and mouse interaction), hyperlink, text data link, color, resize (independent height and width), position, and rotation (with custom rotation point).

Database:

Connect to any SQL database (MS SQL, MySQL, Sybase, Oracle), or MS Access, or Excel, and ERP/MES systems (including SAP). Flexible enough to have a built in interface without the need for knowing SQL (for trends, alarms/events, grid and other objects), or use any SQL statement you need anywhere you need it.

Drivers:

POV v7.1+SP2 contains 18 built-in drivers for most PLCs.

Email:

Send email using SMTP to desktop, email enabled phone, or any enabled device. Get real-time information on alarms, process values, and other events. Point of View v7.1+SP2 supports SSL encryption allowing the use of web based providers such as Gmail.

Events:

POV v7.1+SP2 offers traceability for operator initiated actions or internal system activity. Log events such as security system changes (user logon or off), screen open/close, recipe/report operations,

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1 custom messages and system warnings. Also any tag value changes including custom messages.

FDA Traceability:

Take advantage of built-in functionality to create 21 CFR part 11 compliant projects with traceability and e-signatures. These features are often used for pharmaceutical and food applications, but also for any application where traceability is a must.

FTP:

Automatically upload or download files during runtime to/from remote storage locations using FTP protocol and flexible scripting functions. Configure FTP via scripting or the included configuration interface.

Graphics and Design Tools:

Create powerful screens to meet any application need using the improved tools in our graphic interface. Combine built-in objects to create any functionality required. Store graphics in the library for future use, or easily make projects across a product line share a consistent “look and feel”.

Historical Performance:

We have optimized the trend history module and designed it to load millions of values from SQL Relational Databases with high performance and with built-in data decimation in the Trend Control. Easy to use tools provide quick access to Statistical Process Control (SPC) values without any need for programming.

Intellectual Property Protection:

Screens, documents, scripts and even math worksheets can be individually password protected. This prevents unauthorized viewing or editing of your corporate custom functionality. Protect the entire project with just a few mouse clicks.

Multi-Language:

Develop your application in one of many development languages, including English, Portuguese, German and French.

.NET and ActiveX:

Use third-party controls to enhance your project. POV is a container for ActiveX and .NET controls. Add functionality such as browsers, media players, charting, and other tools that support the ActiveX or .NET interface standards.

OPC:

Drivers for several major brands of PLCs are built in, but any OPC server may optionally be used. POV supports OPC DA (Server/Client), OPC HDA(Server), UA (Client) and OPC .NET 3.0 (Client).

PDF Export:

Send Alarms, Reports, or any file (including .doc or .txt) to a production supervisor, quality manager, or maintenance staff using the included PDF writer.

Recipes:

Save time and maintain consistency by automating part parameters or productions quantities with any triggering event.

Redundancy:

For critical applications where data is vital, POV v7.1+SP2 supports web server, database and overall system redundancy.

Reports:

Create clear, concise reports in text format, graphical RTF, XML, PDF, HTML, and CSV or integrate with Microsoft Office. Get the data you need, in the format you need it, to make informed decisions, fast.

Scalable:

Develop once and deploy everywhere. Take an application created for Windows XP and deploy it on any supported Microsoft operating system, including Windows 7, Windows 8, and Server editions.

Scheduler:

Schedule custom tag changes on date/time, frequency, or any trigger. Use this for simulation, to trigger reports or other functionality at a particular time of day, or even to trigger driver worksheets to read/write at a scan rate you choose.

Scripting:

Two powerful scripting languages are supported. Use built-in Automationdirect.com functions or use standard VBScript to take advantage of widely available resources. Both can be used simultaneously to give you the functionality you need.

Security:

POV includes support for group and user accounts, esignatures, and traceability, as well as support for the ADAM Server, in addition to standard LDAP Servers. Integrate your project to the Active Directory (Users and Groups).

SSL Support for Emails:

Native support for Secure Socket Layer (SSL), makes it easy and secure to send emails from Point of View using web based tools such as Gmail.

Standards:

Take advantage of common industry standards to develop applications that are compatible with any format. TCP/IP, .Net, ActiveX, OPC (client and server), ADO/ODBC, COM/DCOM, OLE, DDE, XML, SOAP, and HTML are supported.

SNMP:

Easily configure managed networked devices on IP networks (such as switches and routers) using incorporated SNMP configuration commands and an easy-to-use configuration interface.

Symbols:

Included library features: push buttons, pilot lights, tanks, sliders, meters, motors, pipes, valves and other common objects. Use the included symbols in your project, modify existing symbols to suit your needs, or create your own from scratch. Plus support for third-party symbol libraries and graphic tools.

Tag Database:

POV features an object oriented database with boolean, integer, real, strings, arrays, classes (structures), indirect tags and included system tags.

Thin Clients:

Remotely view screens as web pages using Internet Explorer web browser, or Automationdirect.com Secure Viewer. Use SMA (Studio Mobile Access) to monitor or access process values and alarms with remote devices such as tablets and mobile phones. Enhanced SMA offers data in easy-to-read widgets that can be viewed on any WebKit (HTML5) based web browser found on iPads, and Android phones and tablets.

Trends:

Real-time and Historical trends are supported. Log data in binary format or to any database locally and remotely. Color or fill trends with graphic elements to enhance clarity of data. Date/Time based or numeric (X/Y plot) trends give you the flexibility to display information that best suits your application.

Troubleshooting:

Quickly debug and verify a project using local and remote tools for troubleshooting, including status fields, DatabaseSpy and LogWin. Capture screen open and close times, see communications in real-time, and messages related to OPC, recipes/reports, security, database errors and even custom messages. Quickly get your project finished using these powerful tools.

Comparison of Point of View Software Components

The Point of View software suite actually comprises several individual components that can be installed on different computers to perform different functions.

Comparison of Point of View Software Components

Component	Functions	Platforms
Point of View	<ul style="list-style-type: none"> • Project development • Tag integration • Remote management • Project runtime server • Project runtime client 	<ul style="list-style-type: none"> • Windows • Windows Server • Windows Embedded Standard
Web Tunneling Gateway (WTG)	<ul style="list-style-type: none"> • Enables a public-facing web server to pass data between your project runtime server and web thin clients, when your project runtime server is located on a secure, internal network 	<ul style="list-style-type: none"> • Microsoft IIS for Windows
Mobile Access Runtime	<ul style="list-style-type: none"> • Enables your project runtime server to deliver HTML5-enhanced project screens to tablets and smartphones 	<ul style="list-style-type: none"> • Microsoft IIS for Windows
Automationdirect.com Thin Client (a.k.a. Secure Viewer)	<ul style="list-style-type: none"> • Web thin client (standalone application) 	<ul style="list-style-type: none"> • Windows • Windows Server
ISSymbol	<ul style="list-style-type: none"> • Web thin client (browser plug-in) 	<ul style="list-style-type: none"> • Internet Explorer for Windows

The architecture of your finished POV project depends on which components you install, where you install them, and how you connect them to each other.

In most cases, you should first install the full Point of View software on your primary workstation. Not only does it set up the project development environment on your computer, it also unpacks the rest of the components so that they can be installed on other computers.

There are separate, downloadable installers only for the web thin clients (i.e., Secure Viewer and ISSymbol).

1 Install the Full Point of View Software

Install the full Point of View software on your Windows computer in order to develop POV projects, or to use the computer as a project runtime server and/or client.

To install and run the full Point of View software, you must have:

- 1) A Windows-compatible computer with a standard keyboard, pointer input (e.g., mouse, trackpad, or touchscreen) and SVGA-minimum display
- 2) A Windows, Windows Server, or Windows Embedded Standard operating system that is currently supported by Microsoft, which at this time includes:
 - Microsoft Windows XP Service Pack
 - Microsoft Windows Vista Service Pack 2
 - Microsoft Windows 7 Service Pack 1
 - Microsoft Windows 8
 - Microsoft Windows Server 2003 Service Pack 2
 - Microsoft Windows Server 2008 Service Pack 2
 - Microsoft Windows Server 2008 R2 Service Pack 1
 - Microsoft Windows Server 2012
- 3) Microsoft .NET Framework 3.5.1 (see note below);
- 4) Microsoft Internet Explorer 6.0 or later;
- 5) 2 GB free hard drive space or non-volatile memory; and
- 6) An Ethernet or Wi-Fi network adapter, for TCP/IP networking or Serial COM ports and adapters to be used for direct communication with PLCs and other devices.
- 7) A USB port, to be used with hardkey licensing.

We recommend the Home Premium, Professional, Enterprise, and Ultimate editions of Windows because they include Microsoft Internet Information Services (IIS) as a pre-installed feature that may be turned on. IIS is used to make your projects accessible to web thin clients and mobile devices. We do not recommend the Starter and Home Basic editions because they do not include IIS, but you may still use them if you do not plan to use those features.

The following items are optional but recommended:

- A DVD-ROM drive, to install the software from disc. This is optional because you may also download the installer to your computer.
- Microsoft IIS installed and turned on, if you want to make your projects accessible to mobile devices. For more information, see the description of Mobile Access Runtime later in this chapter. This is optional because you may choose not to install the Mobile Access Runtime feature.



NOTE: You must have Administrator privileges on the computer in order to install software.



NOTE: Only Windows 7, Windows 8, Windows Server 2008 R2, and Windows Server 2012 are under what Microsoft calls “mainstream support”, which means they are actively maintained and additional service packs may be released for them in the future. The rest of the listed operating systems are under what Microsoft calls “extended support”, which means they are no longer actively maintained.



NOTE: We do not support Point of View on Windows operating systems that Microsoft is not supporting or on XP 64 bit.



NOTE: Microsoft .NET Framework 3.5.1 is a pre-installed feature on newer versions of Windows, but it may not be turned on by default. To turn it on in Windows Vista, Windows Server 2008, Windows 7, or Windows Server 2008 R2, use the Programs and Features control panel (Control Panel > Programs > Programs and Features > Turn Windows features on and off).

On older versions of Windows, Microsoft .NET Framework 3.5.1 must be installed separately. The Point of View installer will attempt to do this for you (see Step 2 below), but depending on your computer’s security settings, the installation may fail without notice. If you experience problems later, while trying to run Point of View, then you should at least confirm that Microsoft .NET Framework 3.5.1 was installed successfully. To do this in Windows XP or Windows Server 2003, use the Add/Remove Programs control panel (Control Panel > Add/Remove Programs).

Please note that Microsoft .NET Framework 4 does not include Microsoft .NET Framework 3.5.1.

To install the full Point of View software:

- 1) Do one of the following:
 - Download the zipped installer to your computer, either from our website (www.automation-direct.com) or from another location on your network where you have previously saved it. Extract the zip archive, open the resulting folder, and then locate and double-click setup.exe.
 - Insert the installation disc into your DVD-ROM drive. If it does not autorun, then manually run D:\automationdirect.htm. When the page opens in your browser, follow the instructions for Product Installation.

The installation wizard runs and asks you to select a language for the installation.

- 2) Select a language from the list, and then click OK.

This selection determines what language the installation wizard will use, as well as what language the project development application’s user interface will be in. You may change the language of the user interface later, after you have installed the software.

The wizard prepares for installation. During this step, it automatically installs SafeNer’s Sentinel drivers.

- 3) On the Welcome page of the wizard, click Next to proceed with the installation.
- 4) On the License Agreement page, click either Yes to accept the agreement and proceed or No to refuse the agreement and exit the wizard.
- 5) On the Customer Information page, enter your user name and company name, and then click Next.

- 6) On the Choose Destination Location page, select the folder where the software should be installed, and then click Next. By default, the software will be installed at: C:\Program Files\AutomationDirect\Point of View v7.1 (Program Files X86 if 64 bit operating system).
- 7) On the Select Features page, select which software features and components you want to install on your computer, and then click Next. The following features are available:
 - Program Files - The main program files for the project development application, the project runtime server, and the project runtime client. **This feature cannot be deselected.**
 - Demos - Premade projects that demonstrate the capabilities of the Point of View software.
 - Hardkey Support - Additional drivers to support the use of hardkey (USB port) software licenses. **This feature cannot be deselected.**
 - OPC Components - Additional components to communicate with other OPC compatible devices. This includes OPC DA (a.k.a. OPC Classic), OPC UA, OPC .NET (a.k.a. OPC Xi), and OPC XML-DA.
 - PDF Printing - Software for printing run-time reports directly to PDF files.
 - Security System Device Driver - An additional keyboard driver to control user input for project security.
 - Symbol Library - A library of premade but configurable screen objects such as pushbuttons, toggle switches, gauges, dials, indicator lights, and so on.
 - Windows Mobile - Additional runtime software for older Windows Mobile devices.
 - Mobile Access Runtime - Additional software to automatically configure IIS to make your project runtime accessible to mobile devices such as tablets and smartphones. This feature requires that you have IIS turned on and configured with ASP, ASP.NET, and ISAPI Extensions enabled. The Point of View installation wizard will attempt to verify that you do, and if you do not, then it will not install this feature.
For more information, see the “Turn on Microsoft IIS for thin client access over the Internet” help file topic.

You do not need to install this feature at this time. You may install it later, after you have turned on IIS, or you may install it on another computer that is acting as your project runtime server. There is a separate Mobile Access Runtime installer (MobileAccessSetup.exe) that is unpacked with the rest of the software.



NOTE: To use Mobile Access Runtime, your Point of View software license must have the necessary add-on. You may still develop projects that include Mobile Access features, even without the license add-on, but mobile devices will not be able to access them.

- 8) On the Ready To Install page, click Install and the installation proceeds.
- 9) On the final page, click Finish and the wizard closes.

When you have finished the installation, you should find the Point of View software in your Start menu at Start > All Programs > AutomationDirect > Point of View v7.1. It includes the following components:

- Point of View v7.1+SP2 - The project development application, project runtime server, and project runtime client.

- Register - A utility that manages your Point of View software license.
- StartUp - A shortcut that automatically starts the project runtime server and runs the most recent project.
- Remote Agent - A utility that allows Point of View running on other computers to connect to your computer and send projects to it.
- Quick Start Guide - A brief guide to installing and using the project development application, including a tutorial for building a simple project.
- Help Manual - A complete technical reference and user guide for the Point of View software.
- Release Notes - A list of changes in the the Point of View software.
- There should also be a shortcut icon on your desktop.



NOTE: You may encounter the following error message during installation: “Error 1628: Failed to complete script based install.” For more information about this error and how to resolve it, go to: <http://consumerdocs.installshield.com/selfservice/viewContent.do?externalId=Q108464>

To run the project development application, do one of the following:

- Double-click the shortcut icon on the desktop
- Click, Start > All Programs > AutomationDirect > Point of View v7.1 > Point of View v7.1.

Execution Modes

Evaluation Mode



NOTE: When Windows UAC (User Account Control) is enabled, you will need to run POV as administrator (at least once) to enable Evaluation Mode (otherwise, it will not have the rights to access the Windows Registry, which is required for the Evaluation Mode). Please right-click on the POV icon (from the Desktop) and select the option "Run as administrator".

Enables all of the product's engineering and runtime features. The first time you install Point of View on a computer, the product runs for forty (40) hours in Evaluation Mode. This evaluation period includes any time you run a product module (engineering or runtime). You can use this evaluation period continuously or not; for example, 10 hours a day for 4 days, or 5 hours a day for 8 days, or 10 hours a day for 3 days plus 5 hours a day for 2 days, and so on.

After running for 40 hours in the Evaluation Mode, the evaluation period ends and the program automatically converts to Demo Mode until you install a valid licensed hardkey. You cannot reactivate Evaluation Mode, even if you reinstall the software on your computer.



NOTE: Each version of Point of View has an evaluation period that is independent of every other version. For example, if your Point of View v7.0 evaluation period has expired and you are running in Demo Mode because you have not installed a license, when you install Point of View v7.1+SP2 on the same computer, the newer version will begin its own 40-hour evaluation period and the older version will continue running in Demo Mode.

Demo Mode

Allows you to download projects to remote stations and to run projects for testing or demonstration purposes. You can execute runtime tasks and use the debugging tools (LogWin and Database Spy), but they shut down automatically after running for two hours continuously. You can restart the Demo Mode again and run for another two hours, and so on.

You cannot create or modify screens, worksheets, or project settings in Demo Mode.

Licensed for Engineering Only

Enables all workbench options for an unlimited time. This mode also allows you to execute the runtime tasks and debugging tools (Database Spy, Output window, and LogWin module) for 24 hours continuously. After the 24-hour period these tasks shut down, but you can restart them again and run for another 24 hours, and so on. You can use this license for development and testing only.

Licensed for Runtime Only

Enables you to run all runtime and debugging tools (Database Spy, Output window, and LogWin module) for unlimited time, but you cannot create or modify screens and/or worksheets.

The menu options available in Runtime Only mode are the same as the options listed for Demo Mode.

Licensed for Engineering + Runtime

Enables all engineering tools, runtime tasks, and debugging tools (Database Spy, Output window, and LogWin module) for an unlimited period of time.



NOTE: The Remote Management tool is always available, regardless of the execution mode, so that you can upload files from or download files to remote stations.

To see which execution mode you are currently running, click About on the Help tab of the ribbon; the About dialog shows the execution mode, including the time remaining if you are in Evaluation Mode.

Notes: