Uniformance®

Uniformance Insight

Specification

R210

9/19

Release 210

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Symbol Definitions

The following table lists those symbols used in this document to denote certain conditions.

Symbol	Definition
	**ATTENTION:** Identifies information that requires special consideration.
	**TIP:** Identifies advice or hints for the user, often in terms of performing a task.
	**REFERENCE -EXTERNAL:** Identifies an additional source of information outside of the bookset.
	**REFERENCE - INTERNAL:** Identifies an additional source of information within the bookset.
CAUTION	Indicates a situation which, if not avoided, may result in equipment or work (data) on the system being damaged or lost, or may result in the inability to properly operate the process.

Contents

1. Introduction

1.1 Uniformance Insight

Uniformance Insight is a visualization application designed to use PHD and other historians. Uniformance Insight provides a set of trend, graphic and analytical tools to assist engineers to investigate process upsets and monitor the performance.

Using Uniformance Insight, you can create trends or tables and configure them to view the data at various intervals. You can also view graphics that have been previously created using the HMIWeb Display Builder client tool.

As Uniformance Insight is based on HTML5 technologies, there is no need for client-side installations. Modern Browsers such as Chrome can be used to display the data. In addition Chrome or Safari can be used to visualize the data on iPads.

1.2 Architecture Overview

A Uniformance Insight implementation may consist of many different integrated hardware and software components depending upon the needs of the customer.

The following architecture examples represent a typical topology that can comprise a Uniformance Insight implementation. The architecture is highly scalable and not all nodes are necessary or required. In some cases, it may be advisable to combine multiple functions on a single Microsoft Windows server; while in other cases; distributing functions across multiple servers may provide the best system security and scalability.

High Level Insight System Architecture

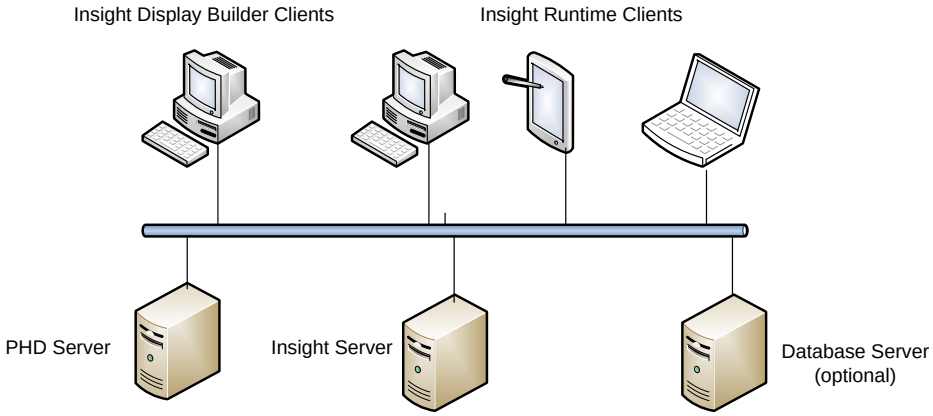

Figure 1 – Insight High Level Network Architecture

Insight With PHD At L3/3.5

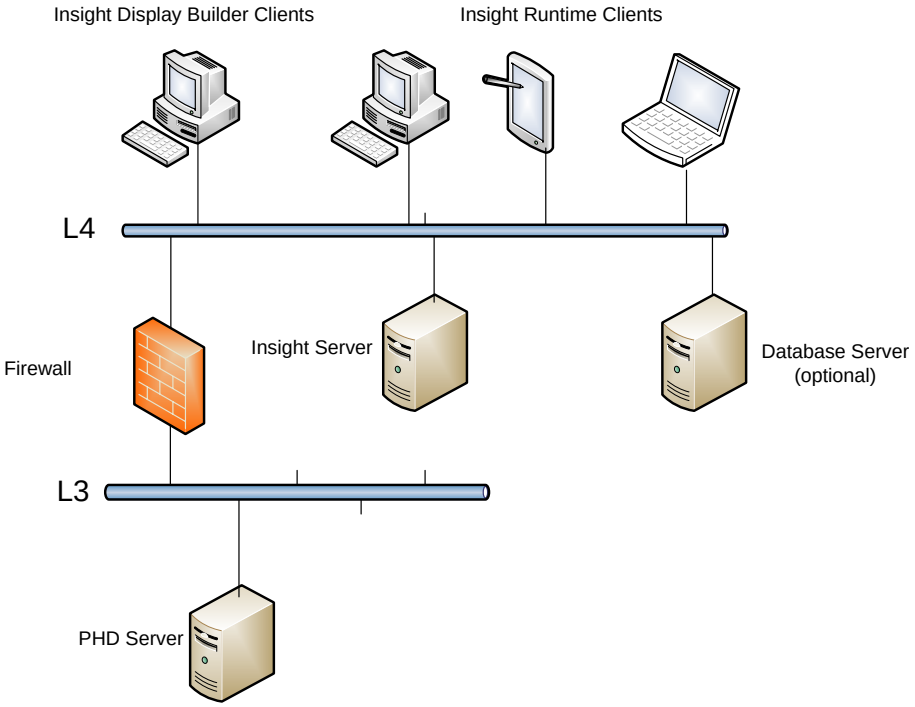

Figure 2 – Insight at L4, With PHD at L3

1.3 Insight Display Builder Clients

These client systems run the HMIWeb Display Builder application, to allow graphics to be created, uploaded to the server and downloaded to the client. They can also view Insight Workspaces at runtime.

These systems must be PCs with one of the supported operating systems.

1.4 Insight Clients

Client systems that connect to the Insight Server to create and use Workspaces and view data.

These can be PCs, Tablets or iPads.

Note: iPads cannot be used to create Workspaces, but can view the Workspaces created on other systems.

1.5 Insight Server

The Application Server containing the Uniformance Insight software installation.

1.6 Database Server

A separate Database Server may be used to store the Insight data and configuration.

1.7 PHD Server

The PHD Server represents PHD Datasources.

This release of Uniformance Insight supports limited OPC HDA Datasource connectivity. The Experion OPCHDA and PHD OPCHDA servers are fully supported by Honeywell. Honeywell has not validated, tested or qualified any other third party OPCHDA server.

1.8 Firewall

For the PHD to be used by the Insight Server, then Ports that need to be opened are either TCP port 3100 (for the APIServer), or port 3150 (for the Remote API Server).

This depends on how you configure it and which API is being used.

See the PHD Server Documentation for further details and discuss the requirements with your Network Adminsitrators.

If users are accessing the Insight Server from a level other than L4, then generally Port 443 is required for HTTPS. However due to the location security policies, models and authentication used on the network, such as cross-domain authentication, you will need to consult your Network Administrators.

1.9 Authentication

Depending on the authentication methods being used in your network and configuration of Insight and related servers, (local, domain and cross-domain) consult the Intuition Core System User's Guide, the Insight Installation Guide and your Network Administrators before installation of Insight.

2. Important Considerations in Uniformance Insight System Sizing

2.1 Introduction

The sizing and deployment models are determined by the following factors:

Client Systems:

- Number of concurrent client systems connected to the Insight server
- Number of Workspaces opened on each of the client systems
- Trend and Graphic update frequencies
- Number of traces on Trends
- Number of Elements on Graphics
- Number of dynamic parameters on Graphics

Server:

- Memory
- Number of CPUs
- CPU speed
- Disk Performance

3. Uniformance Insight Client Specifications

3.1 Uniformance Insight Client

These specifications apply for a single Uniformance Insight Client computer.

Parameter	Specification
Number of concurrent visible tabs across all Browsers simultaneously showing Uniformance Insight	Up to 5 [1]
Maximum number of tiles within a single tab showing data	Up to 16 [2]

1: Different browsers enforce different limits for the number of simultaneous connections. Attempting to open more than 5 Uniformance Insight tabs in Google Chrome may result in subsequent tabs not receiving data. It is possible to have a higher number of tabs if some of the tabs are in the background and not visible 2: Workspaces containing multiple tiles should have an update rate of 1min or slower

3.2 Uniformance Insight Display Sizing and Performance

Parameter	**Specification**
Graphic Parameters	
Number of dynamic parameters per graphic on performance hardware	700 or fewer
Number of dynamic parameters per graphic on standard hardware	400 or fewer
Graphic Updates	
Typical graphic call up time with 700 or less parameters per display on performance hardware	< 5 seconds for adding a graphic to a workspace
Typical graphic call up time with 400 or less parameters per display on standard hardware	< 5 seconds for adding a graphic to the workspace
Trend	
Traces per trend	Up to 12
Typical call up time of a Trend	< 5 seconds when added to an existing Workspace
Note 1 – For a display built with shapes, this excludes the initial call up Note 2 – This excludes time to load the overall desktop and framework Note 3 – Display call up time will be slower for network links with low bandwidth (less than or equal to 500 kbps) and/or high latency (greater than or equal to 400ms) Note 4 – Display and trend call up time will be slower on a mobile/tablet device Note 5 – Times subject to the limits of the data historian reponse times	

Note 6 – The Workspace Time Control Refresh Rate should be configured to be larger than the Graphic or Trend field change rate.

3.3 Uniformance Insight Trend Features

Parameter	Specification
Number of Hairlines per Trend	4
Number of Primary Hairlines Per Trend	1

4. Uniformance Insight Client Hardware and Sizing Requirements

4.1 Uniformance Insight Client Sizing

A computer must meet the following specifications to be used as a Uniformance Insight Web Client. These guidelines are intended to provide a minimum baseline.

4.2 Uniformance Insight Client Hardware Requirements

Parameter	**Specification**
Typical Processor	Single current generation Intel Core i5 or greater
RAM	8 GB or greater
Networking	100 Mbps Ethernet min
Video resolution	Recommended 1920 * 1080
Hard drive	100GB min
Note 1 – Additional RAM is suggested for enhanced performance, especially when opening multiple workspaces. Note 2 – At very low video resolutions, (<1024*768), features such as tile re-size may not function correctly. Note 3 - If the Client system is used to build graphics, additional memory may be required.	

4.3 Uniformance Insight Tablet Client Hardware Requirements

Parameter	Specification
Supported Model	iPad Air 2 or higher

4.4 Uniformance Insight Client Software Requirements

Parameter	Specification
Operating System	Windows 10 x64 iOS11 or newer
Web Browser	Desktop: Google® Chrome 72 or later Microsoft® Edge (Chromium based only) Microsoft® Internet Explorer 11 [1] iPad: Google Chrome 60 or later Safari
Supported Virtual Infrastructure (optional)	VMWare ESXi 5.5 and ESXi 6.0 is used during development and testing.
1: Internet Exporer support is deprecated and may not be supported in future releases of Uniformance Insight. Chrome is the preferred desktop browser and offers best performance.	

4.5 Uniformance Insight Client Software Compatibility

Parameter	Specification
Intuition HMIWeb Display Builder	For this release of Insight, the Display Builder must not be installed on any system that has another HMIWeb Display Builder product installed, including Experion, Uniformance Process Studio R321 or earlier, Workcenter Display Builders. The HMIWeb Display Builder in this release of Insight supports building and editing of displays for both Uniformance Insight and Uniformance Process Studio R322 and later. Start the Builder from the appropriate shortcut to edit displays of that format (eg Intuition HMIWeb Display Builder or Process Studio Display Builder)

5. Uniformance Insight Server Specifications

5.1 Uniformance Insight Server

5.1.1 Maximum Counts

Parameter	Specification
Maximum number of concurrent connections on standard hardware	80
Maximum number of concurrent connections on performance hardware	200
Maximum number of concurrent connections at a fast update rate on standard hardware	15
Maximum number of concurrent connections at a fast update rate on performance hardware	40
Note 1 – A connection is identified as a single Browser tab. If a user has multiple tabs in a Browser, then they are all considered as additional connections. Although background tabs impose less load than visible tabs, they still do contribute to overall server load. Note 2 – Overall system response may be subject to the number of concurrent connections. Note 3 – A fast update rate is anything quicker than 1 minute	

6. Uniformance Insight Server Hardware and Sizing Requirements

6.1 Uniformance Insight Server Hardware Requirements

For large scale deployements please contact Honeywell support for advice. There are parameters which can be tuned across Uniformance Insight and Unigormance PHD for optimal performance with a high number of concurrent users.

Standard System

Parameter	Specification
Typical Processor	8 Core(s), 8 Logical Processor(s) @ 2.5GHz
RAM	16 GB or greater
Networking	100 Mbps Ethernet or greater
Video resolution	1024 * 768
Hard drive	150GB min
Note 1 - Additional RAM is suggested for enhanced performance for more than 50 concurrent users.	

Performance System

Parameter	Specification
Typical Processor	16 Core(s), 16 Logical Processor(s) @ 2.5GHz or more
RAM	32 GB or greater

Networking	1 Gbps Ethernet or greater
Video resolution	1024 * 768
Hard drive	150GB min
Note 1 – Additional RAM is suggested for enhanced performance for more than 50 concurrent users. Note 2 – Hardware requirements may be greater for coexistence systems	

6.2 Uniformance Insight Server Software Requirements

Parameter	Specification
Operating System	Windows Server 2012 R2 Windows Server 2016 Standard or Datacenter Edition
SQL Server	SQL Server 2014 SP1 SQL Server 2016 SQL Server 2017 Express or Standard
IIS	IIS 8.5 IIS 10.0
Virtualization Platform	VMWare ESXi 5.5 and ESXi 6.0 are used during development and testing.

6.3 Uniformance Insight Compatibility

Parameter	Specification
Intuition Core System	R291

Intuition Data Access Services	R260.1
Uniformance PHD (installed on a separate machine than Insight)	R340.1, R321.1.3, R330 CX, R400

7. Uniformance Insight Feature Support

7.1 Uniformance Insight Graphics Features Supported

Feature	Element
Supported Elements	Alphanumeric (data bound) Alphanumeric (not data bound) Indicator (data bound) Indicator (not data bound) Embedded Trend (data bound) Vector graphic elements (lines, rectangles, circles, etc) Button Textbox Hyperlink Picture from file Shape from file (embedded - insert contents of shape)
Alphanumeric	Display value Tooltip with configurable content Error status indication Drag from alphanumeric to embedded trend or Trend in Workspace Dynamic visualization with value or item breakpoints Minimum confidence Data age limit and aged data replace string Null value replacement Quick trend
Indicator	Value as level fill or pointer Horizontal or vertical orientation Tooltip with configurable format Error status indication (style change)

	Configurable range Bad value status Drag from indicator Dynamic visualization with value or item breakpoints Minimum confidence Quick trend
Gauge Shape	Display value and level fill (depending on which gauge) Optional target indication Tooltip with configurable content Error status indication Drag from gauge shape to embedded trend or Trend in Workspace Minimum confidence Quick trend
Embedded Trend	Same as Insight Trend Does not support User Preferences
Scripting	Basic scripting support for Jscript and Javascript. VBScript is not supported.

7.2 Uniformance Insight Trend Features Supported

Feature	**Element**
Trend	Intelligent best fit data retrieval Drag and drop support Trend legend that can be docked, floating minimized or hidden Trend reference lines Trend cursor Single, Multi and Stacked Y axis Various Y axis scaling options Pan and zoom Configurable trace color, line width, line style, markers, step mode

	Trace style user preferences can be persisted and applied to new trends Export to CSV Default Aggregate per datasource type Gaps for bad data and NaN data Annotations persisted to the workspace Shade below or above a trace line Enumerated values

7.3 Uniformance Insight Table Features Supported

Feature	Element
Table	Drag and drop support Default Aggregate per datasource type Missing values for bad data and NaN data Export to CSV

7.4 Uniformance Insight Graphics Features Not Currently Supported

Feature	Specification
Elements	Alphanumeric with scaling (data bound) Table (data bound) Server control Web Object Container Quick Trend Drop Zone ActiveX Control ActiveX Document
Alphanumeric	Word wrap Enter value Enforce formatting of entered value Drag from other elements to alphanumeric

Indicator	Configurable handling of bad values, stale data, no data or NaN values
Embedded Trend	Same as Insight Trend

Note: Stylesheets are not currently supported for styling Alphanumerics or Indicators.

7.5 Uniformance Insight Trend Features Not Currently Supported

Feature	Element
Trend	Configurable handling of low confidence data or stale data values Multi chart

7.6 Uniformance Insight Table Features Not Currently Supported

Feature	Element
Table	Confidence values Configurable handling of low confidence data or stale data values Enumerated values String values Column resizing Column sorting Column filtering Legend View types (Standard, Merge etc)

8. Uniformance Process Studio and Workcenter Graphics Migration

8.1 Overview

Uniformance Insight supports basic migration of Uniformance Process Studio and Workcenter graphics. This section describes the supported elements and features and limitations around migrating graphics.

8.2 Supported Uniformance Process Studio versions

Only the following versions of Uniformance Process Studio graphics are currently supported:

- UPS R320.2 and newer

Honeywell may validate other versions of Uniformance Process Studio according to demand. Please contact Honeywell Support for further assistance.

8.3 Supported Workcenter versions

Only the following versions of Workcenter graphics are currently supported:

- BusinessFlex R242 and newer

Honeywell may validate other versions of Workcenter according to demand. Please contact Honeywell Support for further assistance.

8.4 Uniformance Process Studio Graphic migration steps

Please follow these steps to migrate a Uniformance Process Studio graphic to Uniformance Insight:

1) Create the graphic in Uniformance Process Studio HMIWeb Display Builder
2) Save the graphic
3) Copy the graphic to a Uniformance Insight Client machine (that has the HMIWeb Builder)
4) Open the graphic in the Uniformance Insight HMIWeb Builder
5) Save the graphic
6) Publish the graphic to the Uniformance Insight server

8.5 Workcenter Graphic migration steps

Please follow these steps to migrate a Workcenter graphic to Uniformance Insight:

1) Create the graphic in Workcenter Display Builder
2) Save the graphic
3) Copy the graphic to a Uniformance Insight Client machine (that has the HMIWeb Builder)
4) Open the graphic in the Uniformance Insight HMIWeb Builder
5) Save the graphic
6) Publish the graphic to the Uniformance Insight server

8.6 Bulk Graphic migration

Contact Honeywell Support for guidance on how to do bulk migration of Graphics

8.7 Element and Feature Support Level

Honeywell provides varying levels of support for various elements and features when migrating a graphic from Uniformance Process Studio or Workcenter to Uniformance Insight.

The following table documents the levels of support.

Level of Support	**Description**
Supported	Graphic elements or features in Uniformance Process Studio or Workcenter that are fully supported when opened in Uniformance Insight. Note that there may be pixel level inconsistencies due to the different technologies used to render Uniformance Process Studio and Workcenter graphics compared to Uniformance Insight graphics.
Not Available	Graphic elements or features in Uniformance Process Studio or Workcenter that are not available or applicable when opened in Uniformance Insight.

	Honeywell may enhance Uniformance Insight in the future to support these graphic elements and features according to demand. Please contact Honeywell Support.
Excluded	Graphic elements or features in Uniformance Process Studio or Workcenter that are not applicable to Uniformance Insight. These features are not applicable because they are not available with HTML5 or within the new web technologies and architecture used by Uniformance Insight.

8.8 Element and Feature Support

Feature	Element	Support Level
Elements	Alphanumeric (data bound) Alphanumeric (not data bound) Indicator (data bound) Indicator (not data bound) Vector elements Button Picture from file Dynamic Shape NOTE 1 Hyperlink	Supported
	Embedded Trend (data bound) Textbox Jscript scripting	Partially Supported
	Alphanumeric with scaling (data bound) Table (data bound) Server control Quick Trend Drop Zone Linked Shapes Shape Sequence	Not Available

	VBScript scripting Web Object Container Advanced Table Control ActiveX Control ActiveX Document	Excluded
Common Data Properties	Item Aggregate NOTE 2 Display value parameter NOTE 3, tooltip parameter, auxiliary parameter Resample interval NOTE 4 Units Value format Minimum confidence NOTE 5 Data age limit and aged data replace string Null value replacement Enumerated values in trends Snap to interval (configured in graphic)	Supported
	Enumerated values Server control	Not Available
Common Time Properties	Time interval types (end duration or start to end) Time modes (absolute or relative) Relative time offsets Relative time keywords NOTE 6 Fixed offset from Time Control Small or Large Step Size offset from Time Control Plant specific intervals (configured in graphic)	Supported

Other Common Properties	Error indication Dynamic visualization Opacity Fill color, line color, text color Line width, line style, line arrows Rounded corners Visibility	Supported
Alphanumeric	Data type and precision Text alignment Fonts, font size, font effects	Supported
	Read only, disabled, word wrap NOTE 7 Value write back	Not available
Indicator	Value as bar or pointer Horizontal or vertical orientation Configurable range	Supported
Embedded and Full Trend	Trace Interpolation Trace line style, width, styles Marker styles Display value parameter types Strip chart Limited formatting for the Y axis, legend, trace Label and trend colors Error Indication	Supported
	Various trend formatting for the Y axis, legend, tooltip, trace Default values Multi chart	Not Available
NOTE 1 – Linked dynamic shapes are not available. Server Control custom parameter is not supported		

NOTE 2 – Supported aggregates depend upon the capabilities of the underlying datasource.
NOTE 3 – Status, Tolerance and Enumeration are not supported.
NOTE 4 – Resample interval units of Weeks, Months and Years are not supported.
NOTE 5 – Prior to R102, Uniformance Insight used the Minimum Confidence in the Data tab and ignored the Reduced Confidence Indication Threshold in the Error Indication tab. From R102 onwards, Uniformance Insight uses the Reduced Confidence Indication Threshold in the Error Indication tab like UPS and Workcenter.
NOTE 6 – SECOND, MINUTE, DAY and WEEK keywords are not supported.
NOTE 7 – Alphanumerics are always Read Only since write back is not supported.