DSX

DOCKING STATION

Administrator's Guide

DSX-L Local Server Mode

Hardware
Software
Installation
Operation
Troubleshooting

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INDUSTRIAL SCIENTIFIC

Although every effort is made to ensure accuracy, the specifications of this product and the content herein are subject to change without notice.

Warnings and Cautionary Statements

WARNING: Failure to perform certain procedures or note certain conditions may impair the performance of this product. For maximum safety and optimal performance, please read and follow the procedures and conditions listed below.

- Use of this product in areas where it may be subject to large amounts of electromagnetic interference may affect the reliable operation of this device and should be avoided.

- Sources of large amounts of interference could be and are not limited to:

    o Operation near high radio frequency fields (near 2-way radio transmission antennas where the RF fields may greatly exceed 10 V/M, etc.).

    o AC Power Mains that may have excessive power surges / spikes / transients (from large AC motors operating heavy loads which may induce voltage sags and, etc.).

NOTE: This product has been tested to, and passes all EMC requirements to EN 61326:1998 Electrical Equipment for Measurement, Control and Laboratory Use for Type 2 (Industrial) Apparatus, as well as FCC Part 15, Class A emissions levels when installed to the requirements outlined within this manual. Mandatory compliance to these standards help to ensure controlled, reliable operation of this device when exposed to typical levels of electromagnetic interference as well as ensuring that this device is not source of emissions that might interfere with other equipment installed nearby.

NOTE: Per 30 CFR 75.320(b), the DSX™ Docking Station tests for oxygen deficiency of MSHA approved oxygen detectors compatible with the DSX that can detect 19.5% oxygen with an accuracy of ± 0.5%.

NOTE: Per 30 CFR 22.7(d)(2)(i), the acceptable limit during calibration and bump testing with 2.5% methane must be 10% for MSHA approved instruments using Industrial Scientific certified calibration gas.

NOTE: The DSX Docking Station has an internal pump that controls the flow of gas being delivered to the system. As a result of the internal pump, a demand flow regulator must be used in conjunction with this calibration and bump test station.

Table of Contents

# # #

Chapter

About This Manual

1

1.1. Document Overview

This documentation is designed to assist with the installation and use of the DSX-L Local Server Mode. This user guide contains the following main sections:

- Chapter 2: Introduction - Begin with this section to learn the system components and an overview of functionality.

- Chapter 3: Getting Started - This section provides an introduction to the Docking Station Server Admin Console (DSSAC), the user interface through which administrative tasks are performed by the safety team. It also provides minimum server and PC requirements for proper installation and operation of the software. This section provides information on installing required operating system components, the DSS software, and the DSSAC software. An overview of the the Broadcaster is also provided, as well as how to enable and disable this feature. Finally, an overview of the DSSAC application is provided.

- Chapter 4: Setting Up Users – This section explains how to set up user accounts.

- Chapter 5: Configuring Instruments – This section provides thorough explanations of instrument configuration processes including instrument options, DSSAC configuration, calibrations, graphing of data, bump tests, and data log data.

- Chapter 6: Configuring the Docking Station – This section explains how to setup the Docking Station for operation. It includes explanations of status, properties, setup and removal, and gas cylinder configuration and connections.

- Chapter 7: Basic Operation – This section explains the basic operation of the docking station. It includes topics such as user interface menu options, LED and alarm signals, forced bump tests, forced calibrations, downloading and clearing datalog data, IDS diagnostics, and operating guidelines.

- Chapter 8: Event Scheduling – This section provides an overview of global and special events, and explains how they are used in the docking station system.

- Chapter 9: The Journal Feature – This section provides an overview of the journal feature and how to view journal entries.

- Chapter 10: Default Settings – This section explains how to monitor and modify default settings such as alarm settings and calibration gases.

- Chapter 11: Printing – This section provides information on various printing functions available on the docking station system. This includes how to print lists, IDS and instrument details, calibration data, bump test certificates, and data log data.

- Chapter 12: Language Features – This section explains the language feature and settings.

- Chapter 13: Troubleshooting – Refer to this section if you are experiencing any problems with docking station. It contains information about common problems and their solutions.

- Chapter 14: Warranty – Refer to this section for warranty and liability information.

- Chapter 15: iNet Configuration – This section provides an overview of iNet and explains how to configure iNet settings on the docking station.

- Appendices – Various appendices provide quick access to reference material such as acronyms and frequently used terms.

1.2. Document Conventions

To help you easily locate and interpret information, this manual uses the following conventions.

Table 1-1. Document Conventions

Convention	Description
ALL CAPITALS	Acronyms and keys on the keyboard.
Boldface type	Menus and menu commands, command buttons, tab and dialog box titles and options, field names, and column headings.
"Quotation Marks"	System messages and options within a field.
Italic type	Terms that are being introduced, notes, alternatives, and book titles.

NOTE: Throughout this document, the term *server*−when used alone—refers to either a PC or server running the DSS software.

# # #

Chapter

2

Introduction

2.1. Overview

DSX provides the capabilities for fleet management and the scheduling and automatic performance of testing, calibration, and battery charging for the following Industrial Scientific instruments:

- Tango™ TX1 Single-Gas Monitor
- Ventis™ Pro4 Multi-Gas Monitor
- Ventis™ Pro5 Multi-Gas Monitor

- Ventis™ MX4 Multi-Gas Monitor
- Ventis™ LS Multi-Gas Monitor
- MX6 iBrid™ Multi-Gas Monitor
- GasBadge® Pro

DSX-L and its software are installed to function as a system where data reside on a company's internal computer network (or PC). The remainder of this guide describes this type of installation.

2.2. Features

Features of the docking station system include the following.

- Ability to operate from a server or stand-alone PC.
- Ability to handle up to 100 Instrument Docking Stations (IDS) with one docking station.
- One fresh air input and two or five gas inputs.
- Built-in smart charger on each IDS for rechargeable instruments.
- Simplified feedback on the IDS via 3 LEDs (red, yellow, and green), and an audible alarm.
- A graphical user interface tool (DSSAC) that allows an administrator to view operations on each IDS from a network computer.
- Ability to schedule calibrations, bump tests, diagnostic tests and data log data downloads globally for all IDSs, or on an instrument-specific basis.
- Multilingual user interface (Czech, English, French, German, Polish, Russian, or Spanish) on the IDS display as well as in the DSSAC application.
- Storage of instrument data in a central database.
- Option to use the Industrial Scientific supplied run-time database or the customer's own existing Microsoft® SQL Server.
- Option to implement Industrial Scientific Corporation's iNet solution, gas detection as a service.
- Optional iGas configuration for automatic configuration of gas cylinders on an IDS.

2.3.   Components of the Docking Station Network

The DSX-L network consists of at least three (3) components:

- a Docking Station Server (DSS)
- the Docking Station Server Admin Console (DSSAC) application and user interface
- multiple Instrument Docking Stations (IDSs).

Refer to Figure 2-1. An introduction to each of these components can be found in the next three sections.

2.3.1.   Docking Station Server (DSS) Overview

The Docking Station Server (DSS) is a computer (server of PC) that controls the entire docking station network. The DSS sends information to—and retrieves information from—IDSs and the instruments docked in them. IDS and instrument data, such as calibration and bump test results, are stored in databases that are controlled by the DSS.   Refer to Figure 2-1.
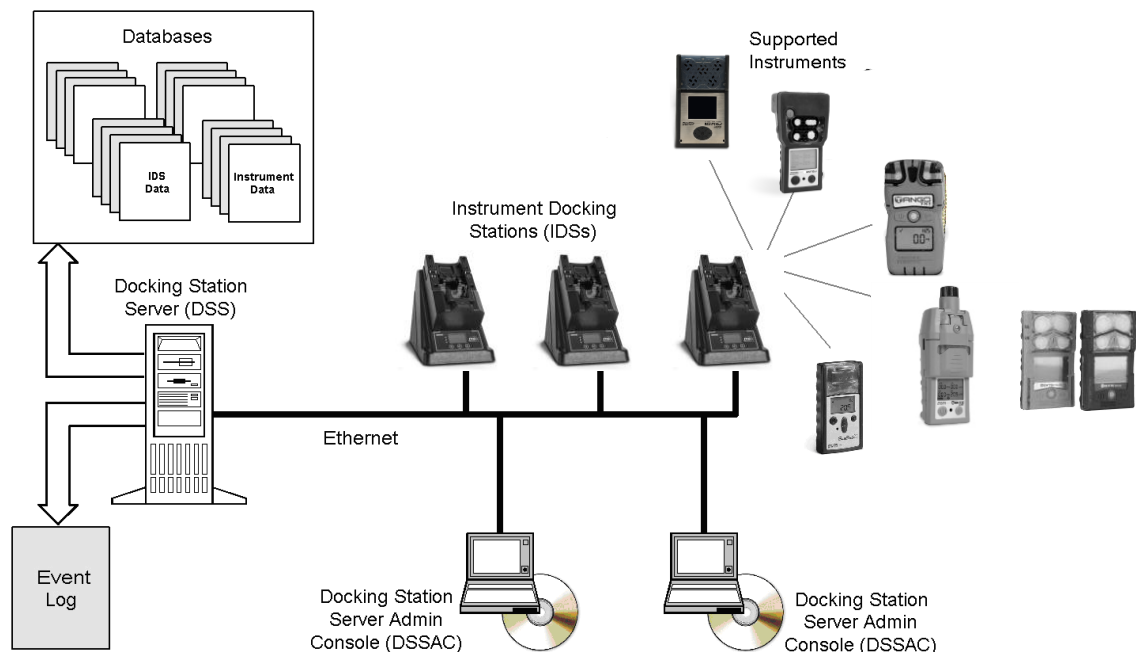
Figure 2-1. Sample Docking Station Network

2.3.2.   Docking Station Server Admin Console (DSSAC) Overview

The DSS is administered using the Docking Station Server Admin Console (DSSAC) application. A Windows®-based user interface, DSSAC is used by the safety team to manage instrument data, view IDS status, and manage DSS configurations.

Before using the DSSAC for the first time, read Chapter 3 Getting Started for an overview of the application's user interface. Chapter 4 contains information about setting up and using IDSs.

2.3.3.   Instrument Docking Station (IDS) Overview

An Instrument Docking Station (IDS) is the device into which an instrument is placed for use in

the DSS. When placed in an IDS, an instrument is ready for automatic calibrations, bump tests, diagnostic tests, and data log data downloads, all of which are controlled by the DSS. An IDS also serves as a battery charger for instruments with rechargeable batteries.

An IDS contains an LCD panel that displays a menu used to perform tasks on an instrument or on the IDS itself. The menu is controlled using a keypad on the IDS. When the menu is not in use, the LCD panel shows the current activity of the IDS. The IDS also contains LED lights and an audible alarm to provide you with additional feedback about current activity and status of the IDS.

When idle, the IDS cycles through three screens of information, as shown below. Each screen is shown for 10 seconds.

```
      Docking Station
      200.151.100.321                          Docking Station
                                               200.151.100.321
         Charging
        Conditioning
                                               SN:  0511061-023
      SN:  0511061-023


           Server
      200.151.100.321
                                                    Server
         Charging                               200.151.100.321
        Conditioning

      SN:  0511061-023                          SN:  0511061-023


           Version
          9.0 (MX4)                                Version
                                                  9.0 (MX4)
          Charging
         Conditioning
                                               SN: 0511061 -023
      SN: 0511061 -023
```
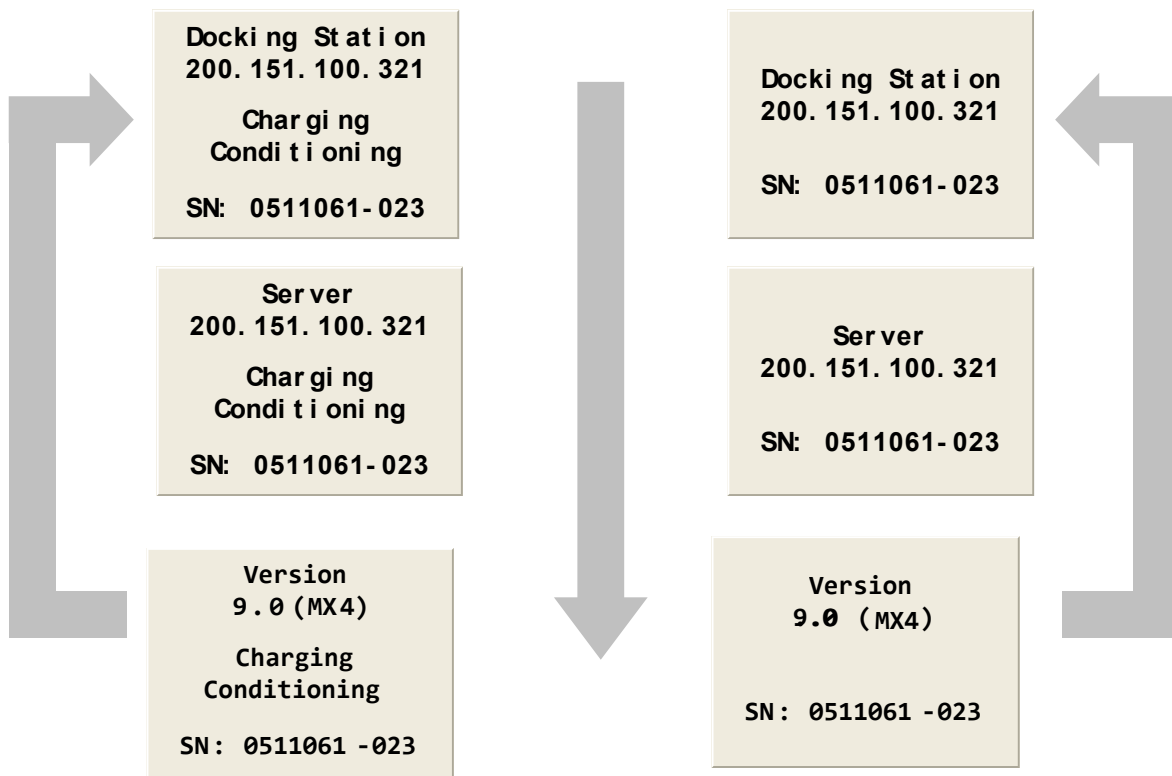
Figure 2-2. Sample LCD Panel Idle Displays (While and While Not Charging)

Additional details about how to use the features of an IDS are covered in the following sections:

- Chapter 6: Configuring the Docking Station
- Chapter 7: Basic Operation

2.4. Functionality and User Roles

This section provides an overview of the functionality that is available in the Docking Station Server Admin Console (DSSAC) and on an Instrument Docking Station (IDS). The availability of functions in the DSSAC is determined by your user role. There are three user roles in the DSSAC. The functionality of each is explained in the three sections that follow.

- <u>Systems Administrator</u> - Can perform all functions in the DSSAC.

- <u>Technician</u> - Can perform all functions except: managing users, editing iNet configuration information, editing events, editing default alarm settings, and editing default calibration gases.

- <u>Guest</u> - Can log in and view information in the DSSAC. This is a read-only role.

NOTE: Your current role is displayed in the title bar of the DSSAC application after you have logged in. An example is shown below.

Figure 2-3. Sample Title Bar of the DSSAC Application Showing Administrator Role

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NOTE: If you are assigned to the Technician role or Guest role in DSSAC, you will not see all of the functions for DSSAC described in this user guide.

Technician and Administrator users can perform functions on the IDS, provided the IDS menu is not locked. These functions are listed below.

- Performing on-demand calibrations, bump tests, and data log downloads.
- Clearing the data log data stored on an instrument.
- Changing language settings on the IDS.

NOTE: It is possible to lock the menu on an IDS so that no one can access it. See section 6.4 Instrument Docking Station Status and Properties (on page 165) for more information about locking the IDS menu.

In addition to the tasks in the DSSAC and on the IDS, a Technician or Administrator user may also be responsible for the physical configuration of IDSs, such as changing gas cylinders.

After logging in to the DSSAC using the "Guest" account, functionality is limited to read-only access through-out the program.

NOTE: The functionality of the DSSAC is based on the highest assigned role for any particular user (i.e., if a user is defined as both an Administrator and Technician, DSSAC will consider them an Administrator).

2.4.1. Overview for Systems Administrators

As a Systems Administrator in the DSSAC, you are able to perform all functions in the application. These functions include the following.

- <u>User management</u> - Add, edit and delete users of the DSSAC.
- <u>DSSAC configuration</u> - Manage language settings and iNet configuration options.
- <u>Manage default settings</u> - Configure the default alarm settings and default calibration gas types for the GasBadge Pro, MX6 iBRID, Tango TX1, Ventis Pro4, Ventis Pro5, Ventis MX4, and Ventis LS instruments.
- <u>View IDS status</u> - Track the status of IDSs in the system.
- <u>IDS management</u> - Manage IDS data and configure gas cylinders.
- <u>Instrument management</u> - Manage instrument data, run reports on calibration and bump test results, and add legacy instrument information to the docking station system.
- <u>Manage events</u> - Schedule events for calibration, bump tests, datalog downloads, and diagnostic tests; and create special events that apply to specific instruments.
- <u>View the Journal</u> - View the dates and times of specific events on each instrument and IDS.

A Systems Administrator may also be responsible for troubleshooting any issues related to the docking stations. As a part of troubleshooting and general maintenance, a systems administrator will also typically be responsible for reviewing the Event Viewer for potential errors and messages. All error information (for the DSS and the IDSs) is written to the event log on the DSS computer.

See the Troubleshooting section (Chapter 13) for more information about possible issues and how to access the Event Viewer.

2.4.2. Overview for Technicians

If you are set up in the DSSAC as a Technician, you can perform the following functions in the DSSAC.

- <u>DSSAC configuration</u> - Manage language settings for the DSSAC application on your workstation.
- <u>View IDS status</u> - Track the status of IDSs in the system.
- <u>IDS management</u> - Manage IDS data and configure gas cylinders.
- <u>Instrument management</u> - Manage instrument data and run reports on calibration and bump test results.
- <u>View events</u> - View Global and Special events for calibration, bump tests, data log downloads, and diagnostic tests.

- <u>View the Journal</u> - View the dates and times of certain events on each instrument and IDS.

2.4.3. Overview for Guests

If you are set up in the DSSAC as a Guest, you can perform the following functions in the DSSAC.

- <u>View IDS Status</u> - Track the status of IDSs in the system.
- <u>View Events</u> - View Global and Special events for calibration, bump tests, data log downloads, and diagnostic tests.
- <u>View the Journal</u> - View the dates and times of certain events on each instrument and IDS.

2.4.4. Context Summary Based on Roles

The table below defines the context (right-click) menus for the DSSAC and what is displayed when a particular role is logged in. In this table, "A", "T", and "G" refer to Administrator role, Technician role, and Guest role, respectively.

Table 2-1. Context Summary Based on Roles

	Left Panel (Tree View)					Right Panel (List View)		
	Add	**Refresh**	**Print**	**Find**	**Apply Profiles**	**Properties**	**Remove**	**Print**
DSS		A T G						
D.S.		A T G	A T G			A T G	A	A T G
Instr.	A	A T G	A T G	A T G	A	A T G	A	A T G
Comp.		A T G	A T G			A T G		
Profiles	A	A T G	A T G		A	A T G	A	
Users	A	A	A T G			A	A	
DS Global		A T G	A T G			A		
Instr Global		A T G	A T G			A		
Instr Special	A	A T G	A T G			A	A	
Journal		A T G	A T G					

2.5. Required Network Connections

Below is a summary of the required network connections needed for the docking station system to function.

NOTE: Throughout this document, the term *server*—when used alone—refers to either a PC or server running the DSS software.

Table 2-2. Required Network Connections

Connection	Requirements
DSSAC to server	The DSSAC client software must be able to reach the DSS server.
	This takes place over port 80 using http over TCP.
	The DSSAC calls various web services running under IIS.
	The DSSAC gets the IP address of the server either by listening for the broadcaster (if you are using it), or by reading it from the registry (if it has connected successfully in the past), or by the user typing it in, if the other two are not available.
	The best way to verify the DSSAC machine can reach the server is to open Internet Explorer and attempt to open one of the web services on the server, such as http://<server_ip_address>/DSSWS/Directory.asmx.
Server to SQLServer	The DSS server uses ODBC to access the SQL Server databases it uses.
	This ODBC connection is established using the servernames, users, and passwords in the Configuration.xml file.
	There are a total of 3 databases the DSS needs access to: DSS, DSSDL, and DSSUSERDIR.
	These databases can be local or remote.
	The database can use MSDE or SQLServer.
	To verify that the server machine can reach the database, try establishing an ODBC connection using the user, passwd, and servername from the Configuration.xml file.
To IDS(s)	Each IDS must be able to reach the server, and the server must be able to reach the IDS(s).
	This communication is XML over http, using TCP/IP.
	This takes place on port 80.
	The IDS posts XML to an ASP.NET page running under IIS. The ASP.NET page used by the IDSs is shown below. http://<server_ip_address>/DSSWS/Server.aspx

Connection	Requirements
	Each IDS contacts the server once each minute, unless the IDS is in the middle of a long operation, in which case it contacts the server after the operation is over.
	The IDS learns the server IP address either by listening for the broadcaster (if you are using it), or by being programmed with the server IP using DS.Config.
	The Server learns of the IDS IP when the IDS contacts the server (the server merely replies).
	The IDS can have either a dynamic or static IP address.
	If a static IP address is used, you must set the address on the IDS using HyperTerminal and a serial cable.
	To verify the IDS is reaching the server, turn on the tracelog and look for messages from the IDS in question. If there are any, it is reaching the server.
Broadcaster to Network	The "DS2 Broadcaster" is a service that runs on the DSS server, broadcasting the IP address of the DSS server, to be received by any IDS and/or DSSAC running on the network.
	The broadcasts take place from the server via UDP on port 55555.

# # #

Getting Started

3.1.   Introduction

This chapter explains how to install the DSS Software package onto a computer system to be used on either a server-based operating system or a PC-based system. It also explains how to begin using the DSSAC application.

This chapter is divided into the following topics:
- Requirements for software installation
- Installing Microsoft Internet Information Services (IIS)
- Installing Microsoft Message Queuing (MSMQ)
- Installing the Docking Station Server (DSS) software
- Loading the installer software
- Installation wizard for DSS
- Database preparation options for first time installations
- Selecting the database option
- Installing the Docking Station Server Admin Console (DSSAC) software
- Installing and running the Docking Station Configurator software
- Assigning a static IP address to a sever or PC
- Disabling the DS2 Broadcaster
- Configuring Windows firewall
- Starting the DSSAC application
- Specifying the DSS IP address

Each of these topics is explained in the sections that follow.

3.2.   Requirements for Software Installation

Before installing the software make sure that the host system (server or PC) meets the following minimum requirements.

3.2.1.   Server Requirements

- Pentium III, 800 MHz (or higher)
- 256 MB RAM
- 4 GB free disk space
- Supported operating systems:
    - o   Windows 2000 Advanced Server or Datacenter Server with SP3 or higher

- o Windows 2000 Professional or Windows XP (Supports 5 Docking Stations or less)
  - o Windows 2003 (Standard Edition, Web Edition, Enterprise Edition, or Datacenter Edition)
  - o Windows Vista
  - o Windows 7
  - o Windows 2008
  - o Windows 8
  - o Windows Server 2012
- Supported operating system languages (for installation and running):
  - o English
  - o French
  - o German
  - o Spanish
  - o Czech
  - o Polish
  - o Russian
  - o Other Western Europe Latin-based languages (i.e., "Latin-1" languages per Windows) should also work, but have not been specifically tested. These include: Afrikaans, Basque, Catalan, Danish, Dutch, Faeroese, Finnish, Galician (Spain), Icelandic, Indonesian, Italian, Malay, Norwegian, Portuguese, Swahili, and Swedish.
  - o The SQL Server (or SQL Server 2008 Express Edition) database must be configured to use a Collation type within the Windows Latin codepage of 1252. (NOTE: If the DS2 Database has any other collation type, it prevents the DSX Server software from functioning properly.) The SQL Server (or SQL Server 2008 Express Edition) will automatically default to "collation type" within the proper codepage of 1252 if installed under the Latin-based languages listed above. Installing SQL Server under a non-Latin-based operating system may result in a non-Latin collation type for the DS2 Database. Database administrators also have the ability to change a database's collation type. Changing the collation type of the DS2 Database to anything other than a Latin collation type is not be supported.
- Internet Information Services (IIS) must be installed to the operating system if not already present (may require the Operating System CD)
- Message Queuing (MSMQ) must be installed to operating system (may require the operating system CD).

NOTE: Server software is supported on English, French, German, and Spanish Czech, Polish, or Russian operating systems. Other Latin-based language operating systems may work, but they have not been fully tested.

The collation type of the database can be seen using SQL Server Enterprise manager and examining the Properties of a database as in the screenshot below.
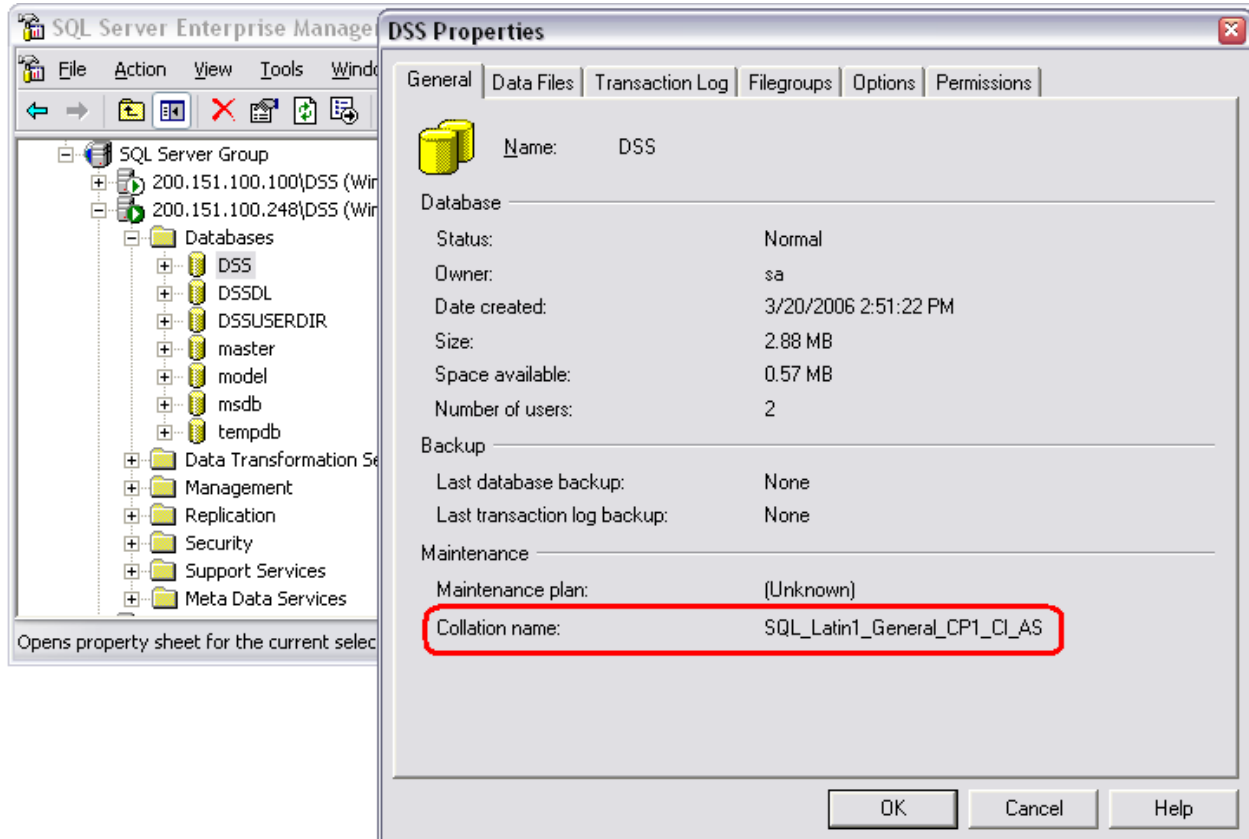
Figure 3-1. Determining the Collation Type of a Database

Although the DSS may run under non-English operating systems as described above, for it to successfully communicate data back and forth between docking stations necessitates that the English-US regional settings for Number formatting remain in their default state. That is, even if the DSS is running under a non-English-US language, it is necessary that the settings for English-US remain at their defaults. The default Number settings are shown below. If any of these defaults are modified, then the DSS may be unable to properly communicate data with docking stations.
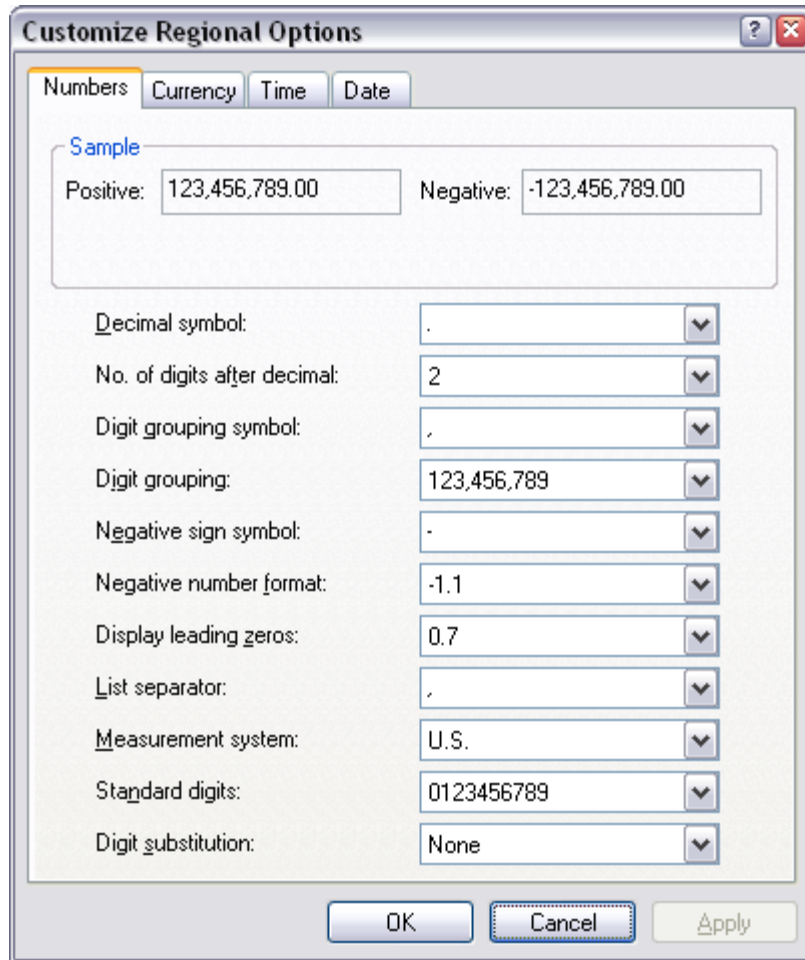
Figure 3-2. Default English-US Regional Options for "Numbers"

3.2.2. PC Requirements

- Pentium III, 800 MHz (or higher)
- 256 MB RAM
- 4 GB free disk space
- Windows XP or Windows Vista or Windows 2003, Windows 7, Windows 8, Windows 2008 or Windows Server 2012.
- Internet Information Services (IIS) must be installed to the Operating System if not already present (may require the Operating System CD)
- Message Queuing (MSMQ) must be installed to Operating System (may require the Operating System CD)

NOTE: DSSAC supports Federal Desktop Core Configuration (FDCC) settings.

3.2.3. Additional Requirements and Warnings

WARNING: PCs or laptops having two network adapters will not allow the DSS to properly function. Do not install to a laptop that has both a built in LAN adapter and a built in Wireless adapter. If the laptop has a removable wireless card, remove the wireless card and place laptop on a LAN via Ethernet cable while doing the install.

WARNING: When connecting a single IDS to either a server or PC, an Ethernet cross over cable must be used. If you are connecting multiple IDSs to a network, standard Ethernet cables must be used.

WARNING: If you are installing the DSS software on a server or PC, any network device must be connected to the PC via an Ethernet Cable, for the software to install. Simply connecting the docking station on any other network device such as a hub or router to the server or PC will be adequate. If no devices are connected to the computer, the DSS will not install.

NOTE: If installing the software onto a Windows XP operating system, some screen shots may have some inaccuracies; depending on if the PC views are set for Classic/Traditional View, or XP View.

NOTE: Throughout this document, Internet Information Services will be referred to as IIS, and Message Queuing will be referred to as MSMQ.

Prior to installing the DSS software, IIS must be installed to the Operating System if it is not already present. Installing this Windows service requires the Operating System CD.

The DSS installer will check for "prerequisite" programs during DSS installation. If prerequisite programs are not found in the machine, DSS installer will display the message below:
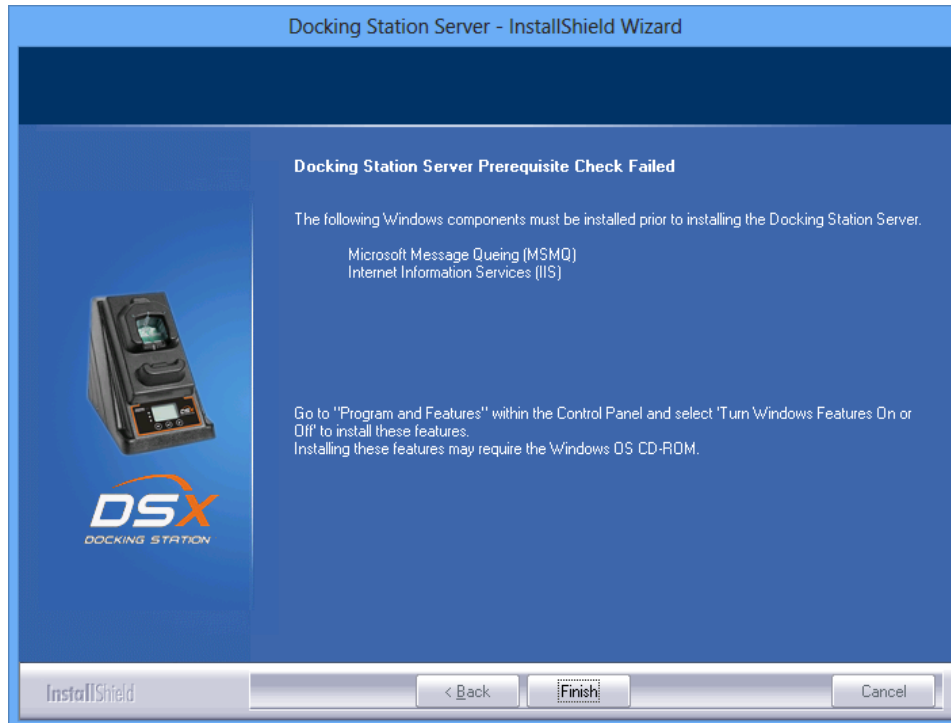
For Windows versions less than v6.0 (Windows 7)
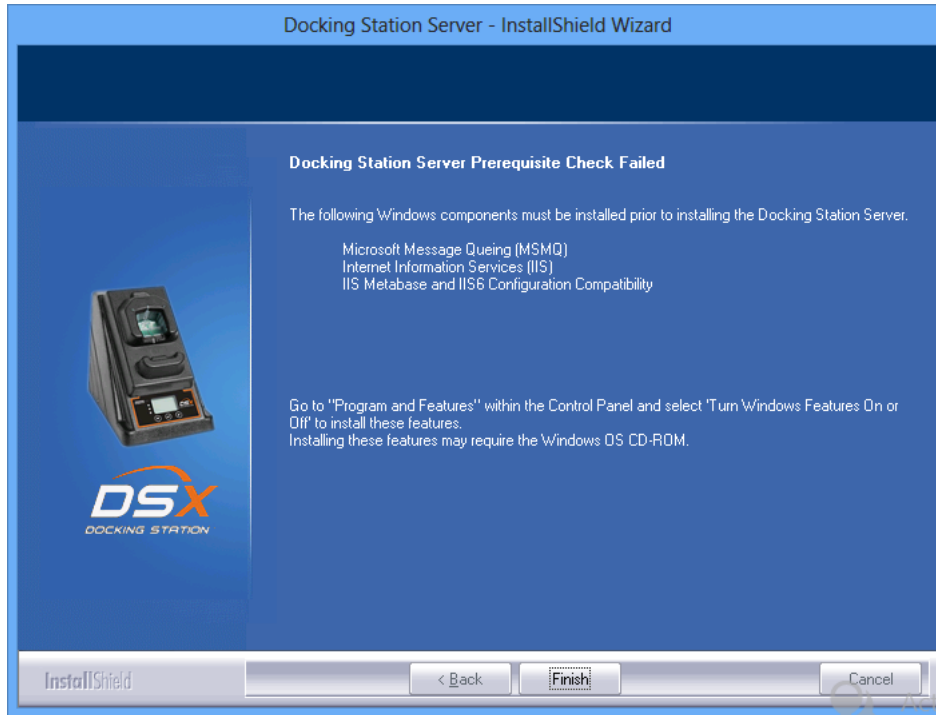
For Windows versions starting from v6.0 (Windows 7)

At this time, the user can go back and install the IIS using the procedures outlined on the following pages.

3.3.   Installing Microsoft Internet Information Services (IIS) and Microsoft Message Queuing (MSMQ)

3.3.1. Overview

Microsoft Internet Information Services (IIS) and Microsoft Message Queuing (MSMQ) must be installed before installing the DSX software. The procedures for installing IIS and MSMQ differ based on the version of the operating system that is used, namely:
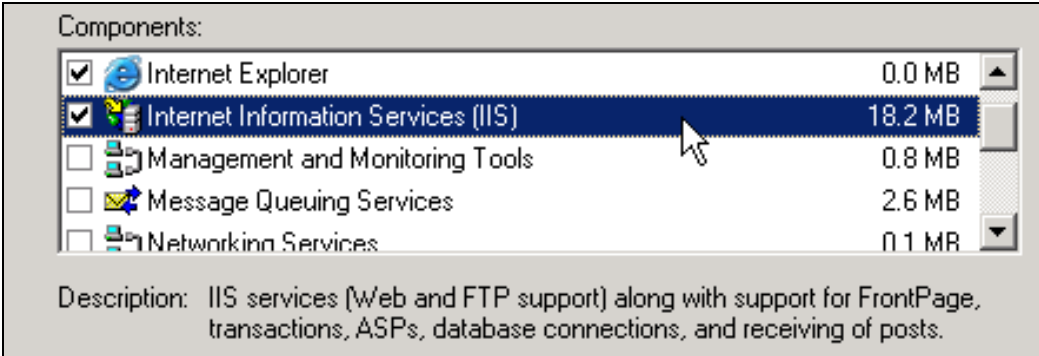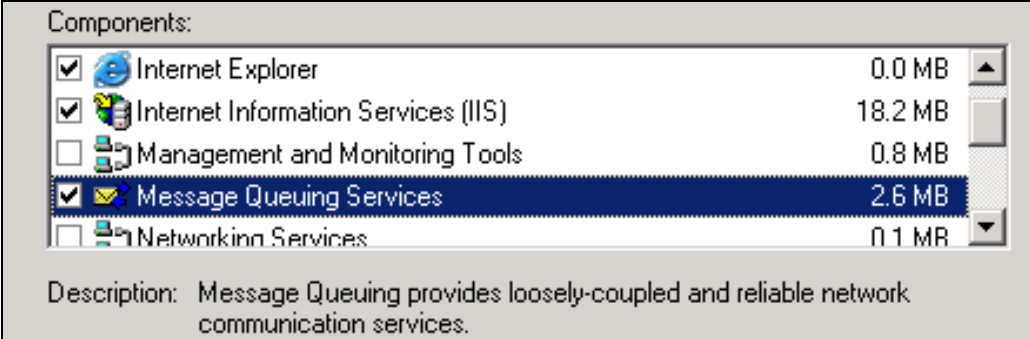
- Windows 2000 Professional and Windows XP Professional
- Windows 2000 Standard Server and Windows 2003 Server
- Windows Vista, Windows 7, Windows 8, Windows 2008 Server and Windows 2012 Server
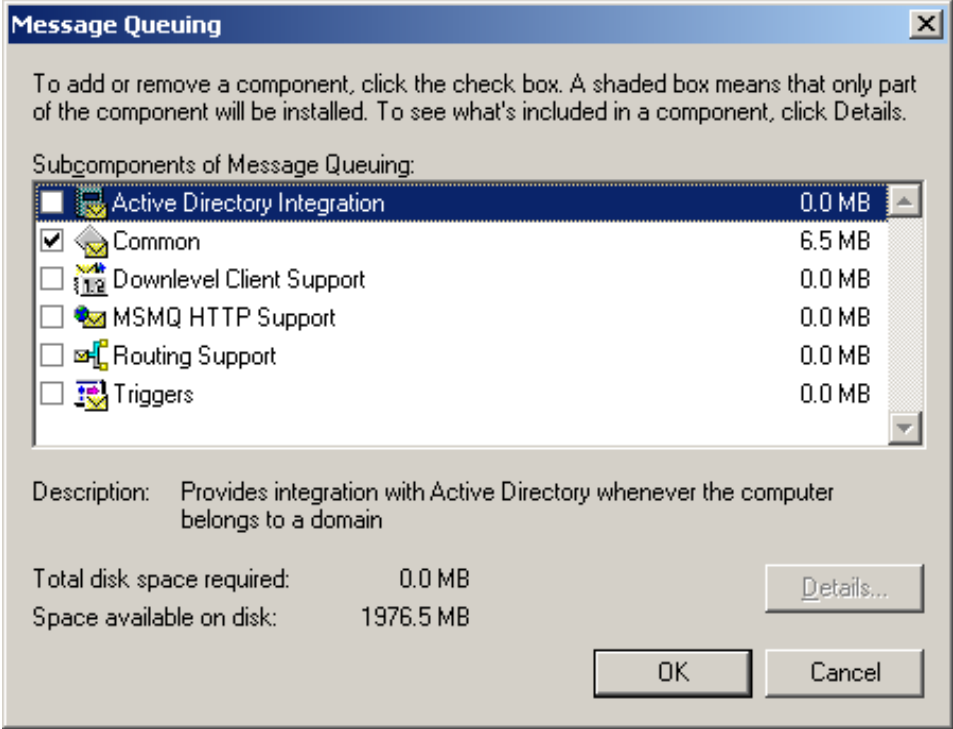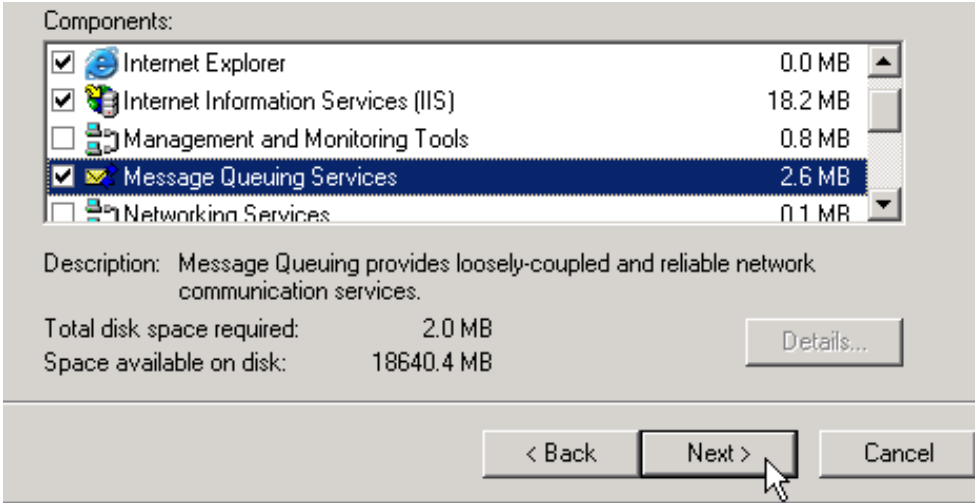
Separate sections are provided for explaining the IIS and MSMQ installation processes under each of these systems. Refer to the appropriate section below.

3.3.2. Installing IIS and MSMQ on Windows 2000 Professional and Windows XP Professional

To install IIS and MSMQ on Windows 2000 Professional and Windows XP Professional, follow the instructions listed below.

NOTE: You may need the Windows Operating System CD if the service was not previously installed.

Step	Instruction
1.	Navigate to Control Panel (Start / Settings / Control Panel)

Figure 3-3. The Add/Remove Windows Component Button

Step	Instruction
2.	Click on Add / Remove Programs.
3.	Click on Add / Remove windows components.
4.	Find and, if needed, place a check mark on Internet Information Services (IIS). If a check mark already exists, the service is currently installed.

Figure 3-4. The IIS Check Box

Step	Instruction
5.	Find, and if needed, place a check mark in the box labeled Message Queuing Services. If a check mark already exists, the service is currently installed.

Figure 3-5. The Message Queuing Services Check Box

Step	Instruction
6.	For Windows XP Operating Systems, highlight Message Queuing and select details. Make sure that there is a check mark in the Common box and none in the Active Directory Integration box. **Figure 3-6. The Active Directory Integration and Common Check Boxes**
7.	Select OK.
8.	For Windows 2000 Professional, Choose NEXT. **Figure 3-7. The IIS Check Box**
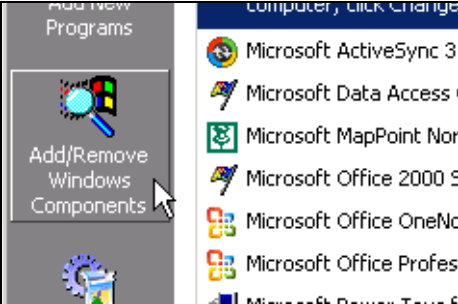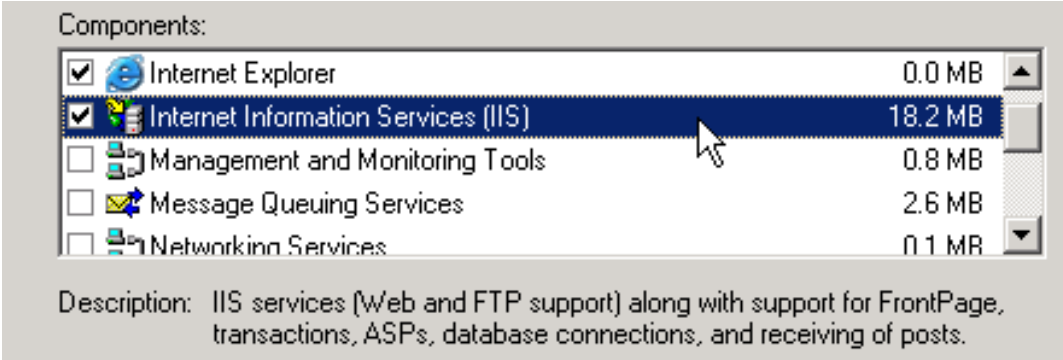
Step	Instruction
9.	When installing the Windows 2000 Professional OS for the first time, the following two choices must be made. At the Message Queuing (MSMQ) type option, leave selection on Independent Client and choose Next. **Figure 3-8. Selecting Independent Client for MSMQ Type**

Step	Instruction
10.	At the Message Queuing Server (MSMQ) option select "Message Queuing will not access a directory service" and choose Next. **Figure 3-9. The Message Queuing Server Option**
11.	Windows will then install the new components. If your PC does not contain the source cabs (most do not), then you will be prompted to place the Windows system disk into the CD drive. Answer any prompts accordingly.
12.	When it is completed, choose Finish.

3.3.3. Installing IIS and MSMQ on Windows 2000 Standard Server and Windows 2003 Server Web Edition

To install IIS and MSMQ on Windows 2000 Standard Server and Windows 2003 Server Web Edition, follow the instructions below.

NOTE: You may need the Windows Operating System CD if the services were not previously installed.

Step	Instruction
1.	Navigate to Control Panel (Start / Settings / Control Panel)
2.	Click on Add / Remove Programs.
3.	Click on Add / Remove Windows components.
4.	If you are installing on Windows 2000 Server, the following three screens are applicable. Find and if needed, place a check mark on Internet Information Services (IIS). If a check mark already exists, the service is currently installed. **Figure 3-10. The Add/Remove Windows Component Button** **Figure 3-10. The IIS Check Box**
5.	Find, and if needed, place a check mark on Message Queuing Services. If a check mark already exists, the service is currently installed.

Step	Instruction
	Figure 3-11. The Message Queuing Services Check Box
6.	Choose Next.
7.	If you are running Server 2003, the Message Queuing (MSMQ) is installed in the following manner.
8.	Select Application Sever from the check box and choose Details. **Figure 3-12. The Windows Components Wizard**

Step	Instruction
9.	Make sure that ASP.NET, Internet Information Services (IIS), and Message Queuing are checked. **Figure 3-13. The ASP.NET, IIS, and Message Queuing Check Boxes**
10.	Highlight Message Queuing and click Details. Make sure that there is a check mark in the box marked Common and no check mark in the Active Directory Integration box, and then click OK. **Figure 3-14. The Message Queuing Dialog Box**

Step	Instruction
11.	When installing the Windows 2000 Server OS for the first time, the following two choices must be made. At the Message Queuing (MSMQ) type option, leave selection on Independent Client and choose Next. At the Message Queuing Type option, leave selection on Independent Client and choose Next. **Figure 3-15. The Message Queuing Type Option**

Step	Instruction
12.	At the Message Queuing Server option, select "Message Queuing will not access a directory service" and choose Next. **Figure 3-16. The Message Queuing Server Option**
13.	Windows will then install the new components. It your PC does not contain the source cabs (most do not), then you will be prompted to place the Windows system disk into the CD drive. Answer any prompts accordingly.
14.	When it is completed, choose Finish, and reboot the PC or server.
15.	After the IIS is installed, the PC or Server is now ready to install the DSS software.

3.3.4. Installing IIS and MSMQ on Windows Vista, Windows 7, Windows 8, Windows 2008 Server and Windows 2012 Server

To install IIS and MSMQ on these operating systems follow the instructions below.

NOTE: You may need the Windows Operating System CD if the services were not previously installed.

When installing any of the DSX software applications on Vista™, the user will need to have "administrative" privileges. This is due to the new User Access Control (UAC) feature within Vista™. The following provides instructions on installing the DSX Software suite on Vista™ operating system. For more information about Vista's UAC, see the following link:
http://www.microsoft.com/windows/products/windowsvista/features/details/useraccountcontrol.mspx

The following images define which settings should be enabled for MSMQ and IIS Installed Windows Components settings under Vista, Windows 7, Windows 8, and Windows 2012.

MSMQ   IIS
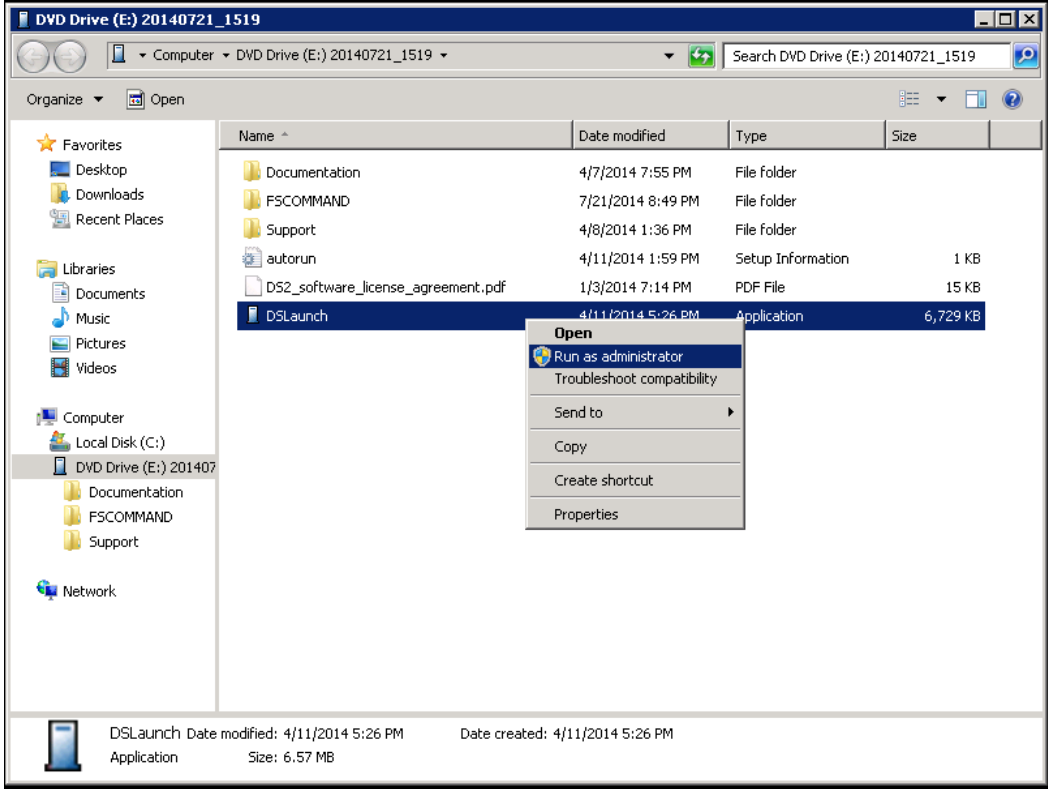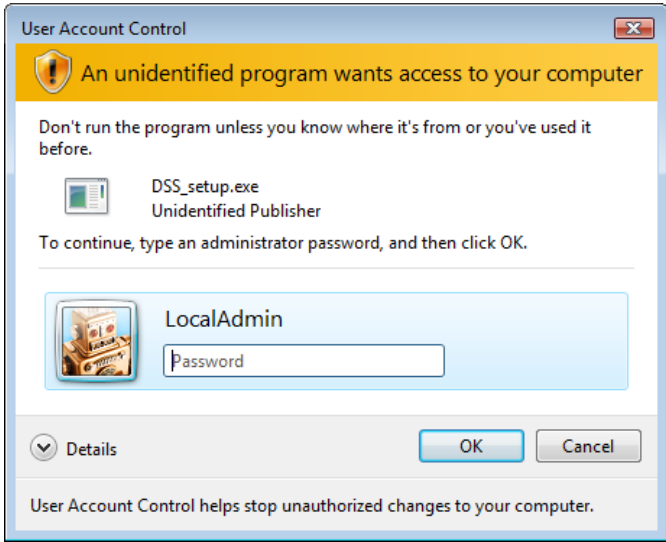
- Microsoft Message Queue (MSMQ) Server
  - Microsoft Message Queue (MSMQ) Server Core
    - MSMQ Active Directory Domain Services Integration
    - ☑ MSMQ HTTP Support
    - MSMQ Triggers
    - Multicasting Support
  - MSMQ DCOM Proxy
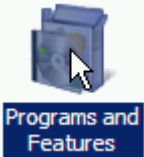
- Internet Information Services
  - ⊞ FTP Publishing Service
  - Web Management Tools
    - IIS 6 Management Compatibility
      - IIS 6 Management Console
      - IIS 6 Scripting Tools
      - IIS 6 WMI Compatibility
      - ☑ IIS Metabase and IIS 6 configuration compatibility
    - ☑ IIS Management Console
    - ☑ IIS Management Scripts and Tools
    - ☑ IIS Management Service
  - World Wide Web Services
    - Application Development Features
      - ☑ .NET Extensibility
      - ☑ ASP
      - ☑ ASP.NET
      - CGI
      - ☑ ISAPI Extensions
      - ☑ ISAPI Filters
      - Server-Side Includes
    - ⊞ ☑ Common Http Features
    - ⊞ Health and Diagnostics
    - ⊞ ☑ Performance Features
    - Security
      - ☑ Basic Authentication
      - Client Certificate Mapping Authentication
      - ☑ Digest Authentication
      - IIS Client Certificate Mapping Authentication
      - ☑ IP Security
      - ☑ Request Filtering
      - ☑ URL Authorization
      - ☑ Windows Authentication

To install DSX software on Windows Vista, follow the instructions below.

Step	Instruction
1.	To avoid any problems with privileges, close the CD launcher if the autorun feature automatically starts it.
2.	Browse to the DSX-L CD and right-click on the *Launch* application. Choose the *Run as administrator* option; provide an administrative password if required.
3.	Install the applications as needed.

Step	Instruction
4.	If the current user does not have "administrative" privileges at the time of installation, the User Access Control (UAC) will prompt for an admin password as shown below.
5.	Provide an administrative password and then continue with the install.

3.3.5. Installing IIS and MSMQ on Windows 2008

Step	Instruction	
1.	Navigate to Control Panel (Start / Settings / Control).	
2.	Click on Programs / Features.	

Step	Instruction
3.	Click on Turn Windows Features On and Off; this is located in the window pane to the left.
4.	Click on Features, then choose Add Features.
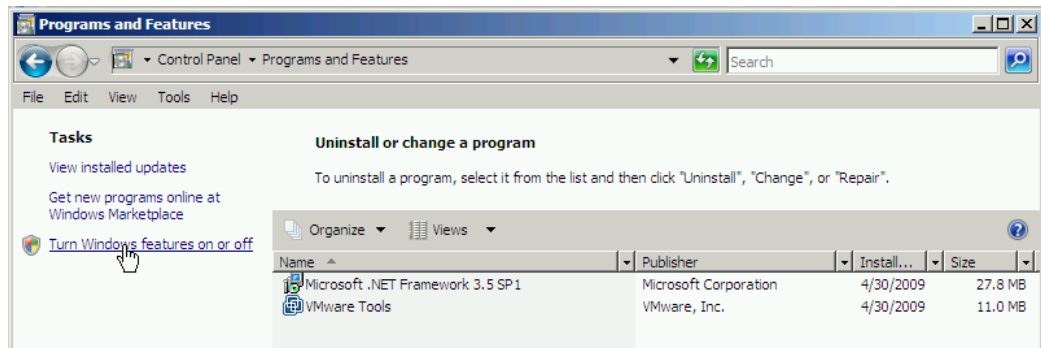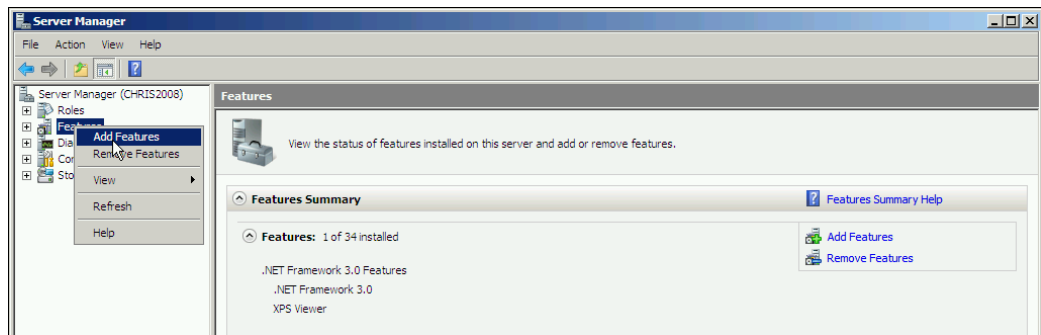
Step	Instruction
5.	From Message Queuing / Message Queuing Services, find and, if needed, place a check mark on HTTP Support.
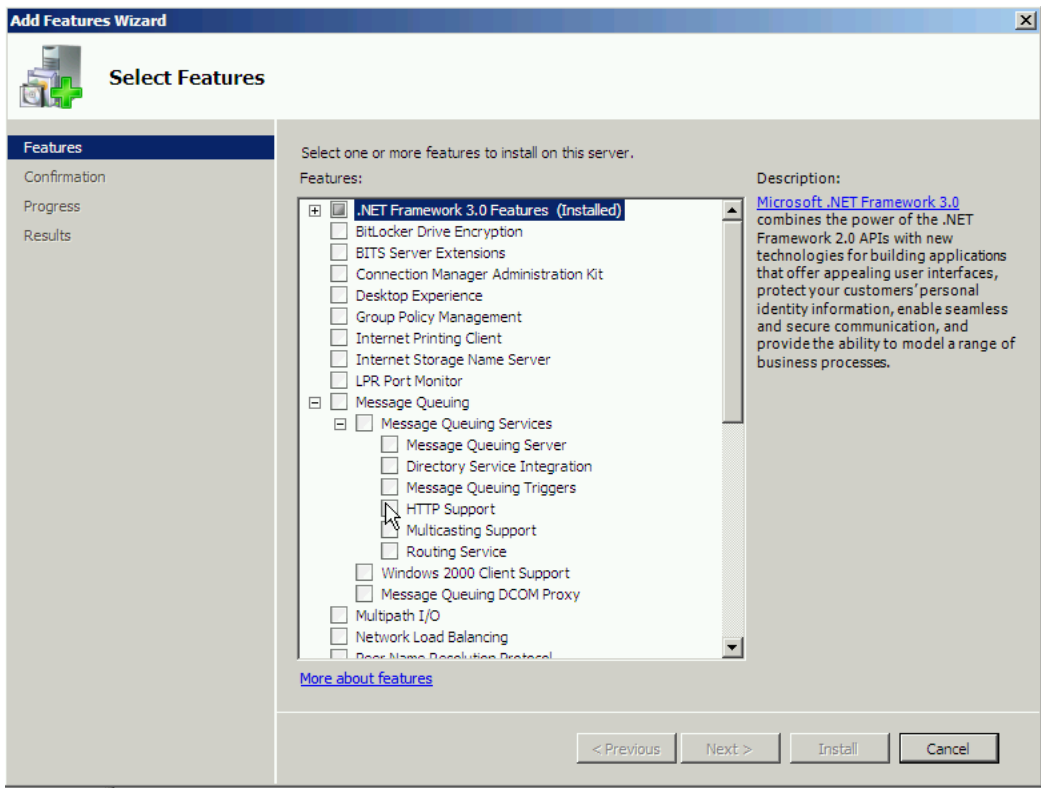
If the check mark already exists, the service is currently installed. If the check mark is added, a new window will open; click on "Add Required Role Services".

Step	Instruction
6.	From the Add Features main window, under Web Server (IIS), click on Role Services. The features that should be selected with a check mark are highlighted below. In some cases, such as when choosing "ASP.NET", a second window will open (similar to the second screen shown in Step 5 above) requiring the user to confirm the choice to add the feature. After selecting all required features (see list below), click on Next.

The following defines which settings should be enabled for Windows 2008.
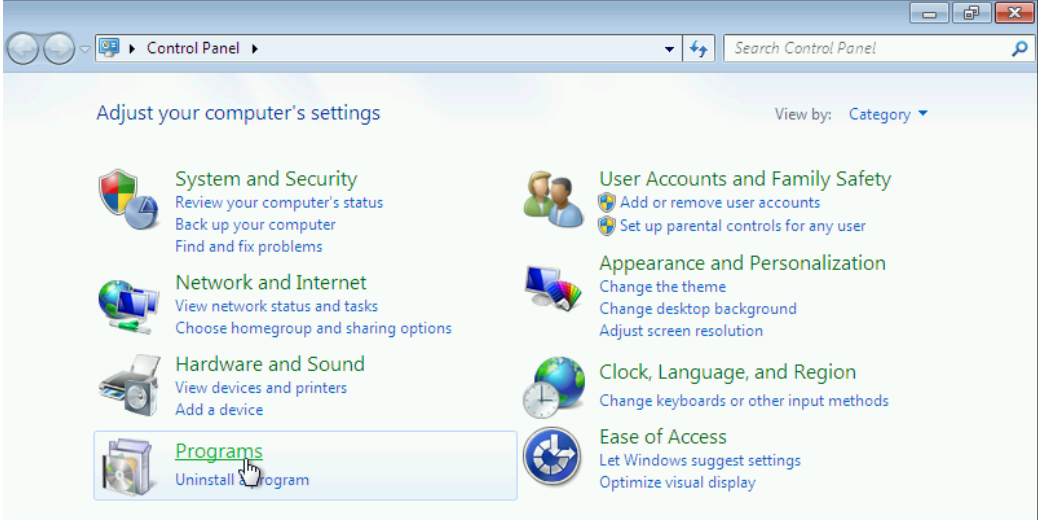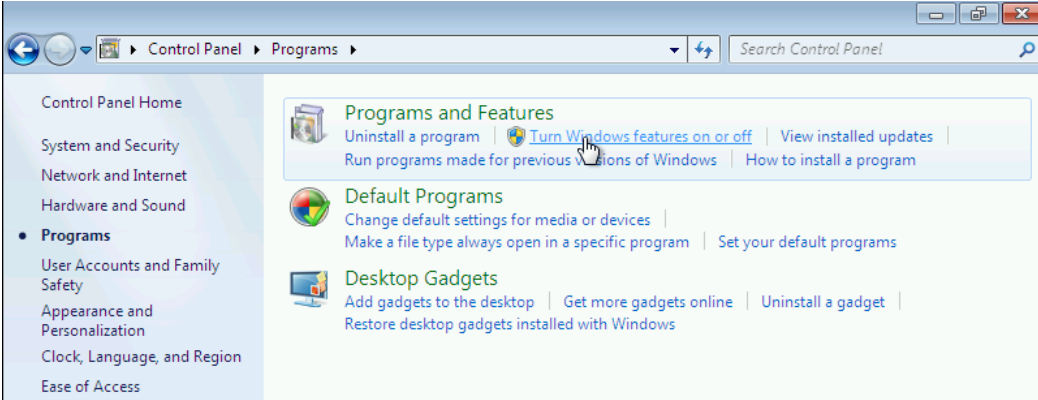
-		Web Server		
	-	✓	Common HTTP Features	
			✓	Static Content
			✓	Default Document
			✓	Directory Browsing
			✓	HTTP Errors
			✓	HTTP Redirection
	-	✓	Application Development	
			✓	ASP.NET
			✓	.NET Extensibility
			✓	ASP
				CGI
			✓	ISAPI Extensions
			✓	ISAPI Filters
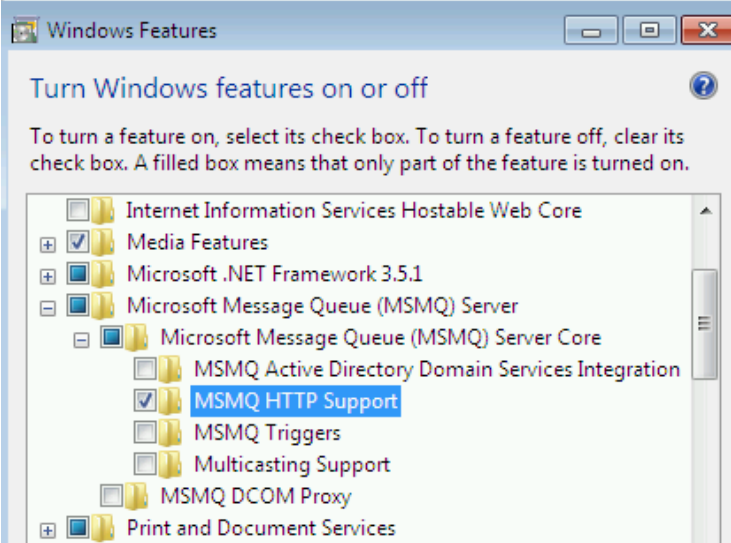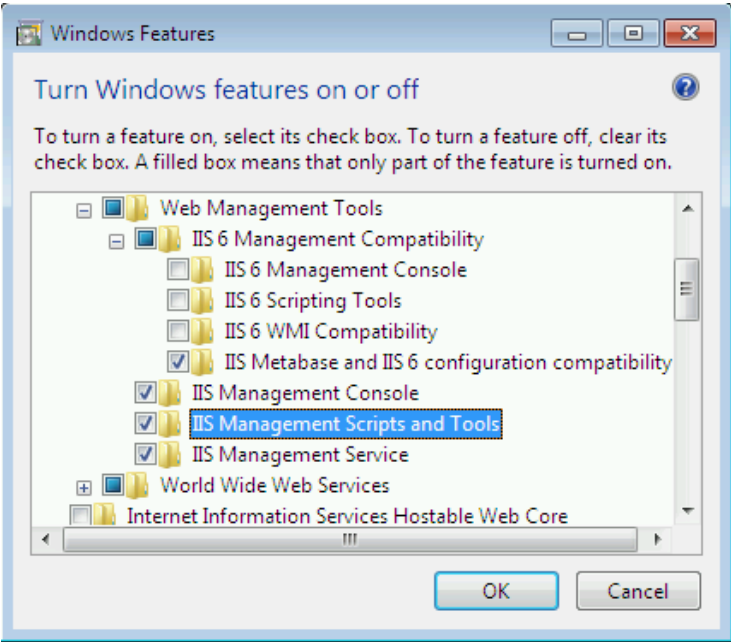
			Server Side Includes
-	✓		Health and Diagnostics
		✓	HTTP Logging
		✓	Logging Tools
		✓	Request Monitor
		✓	Tracing
			Custom Logging
			ODBC Logging
-	✓		Security
		✓	Basic Authentication
		✓	Windows Authentication
		✓	Digest Authentication
			Client Certificate Mapping Authentication
			IIS Client Certificate Mapping Authentication
		✓	URL Authorization
		✓	Request Filtering
		✓	IP and Domain Restrictions
-	✓		Performance
		✓	Static Content Compression
			Dynamic Content Compression
-			Management Tools
		✓	IIS Management Console
		✓	IIS Management Scripts and Tools
		✓	Management Service
	-		IIS 6 Management Compatibility
		✓	IIS 6 Metabase Compatibility
			IIS 6 WMI Compatibility
			IIS 6 Scripting Tools
			IIS 6 Management Console
-			FTP Publishing Service
			FTP Server
			FTP Management Console

7.	The Confirmation screen will open in a new window; choose Install to confirm the selections.
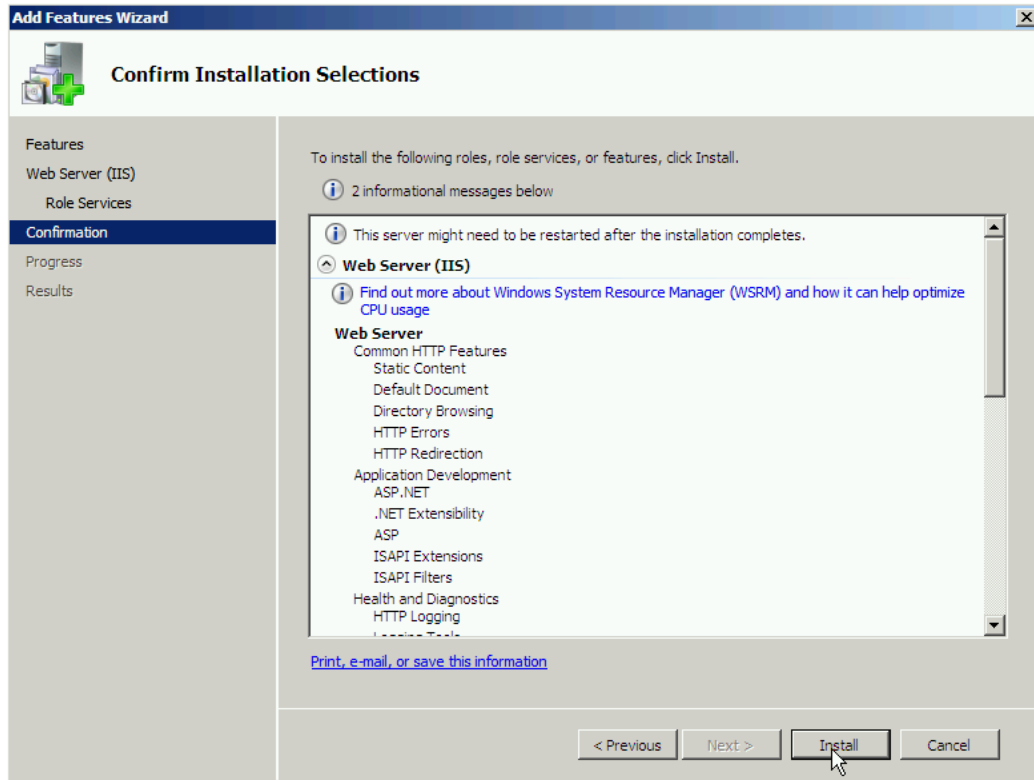
3.3.6. Installing IIS and MSMQ on Windows 7

Step	Instruction
1.	Navigate to Control Panel (Start / Settings / Control).
2.	Click on Programs.
3.	Click on Turn Windows features on or off.

Step	Instruction
4.	From the Microsoft Messaging Queue (MSMQ) Server / Microsoft message Queue (MSMQ) Server Core. Select MSMQ HTTP Support.
5.	Select Internet Information Services / Web Management Tools. The features shown below with a check mark should be turned on.
6	In addition to the MSMQ and IIS features noted above in steps 4 and 5, other features are required (e.g., Security). Refer to the full list of Windows 7 features that should be selected as shown on page 26. After all features are selected, click OK.

3.4. Installing the Docking Station Server (DSS) Software

The procedures that follow are intended for the operating systems listed below:

- Windows 2000 Standard Server
- Windows 2003 Server Web Edition
- Windows 2000 Professional
- Windows XP Professional (firewall must be configured)
- Windows Vista
- Windows 7
- Windows 2008
- Windows 8
- Windows Server 2012.

The DSS software is installed in segments. These segments are outlined in the sections that follow.

3.5. Loading the Installer Software

To load the installer software, follow the instructions below.
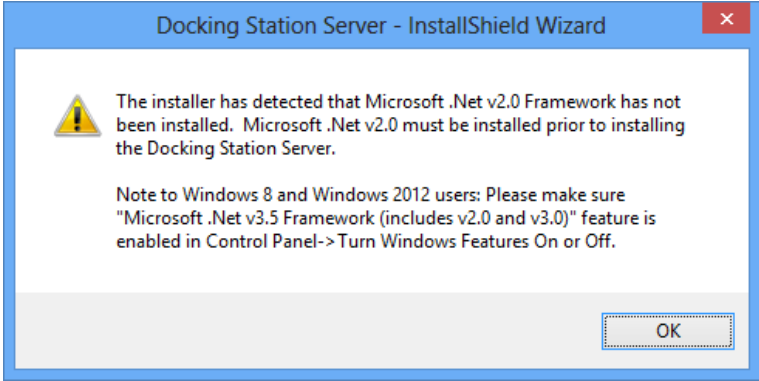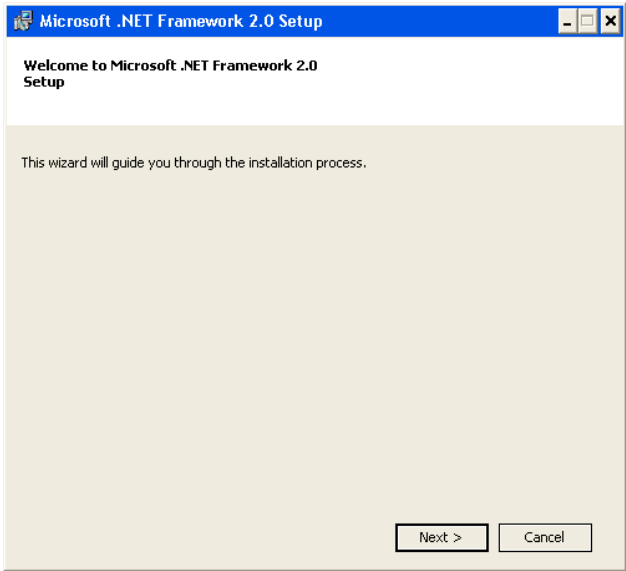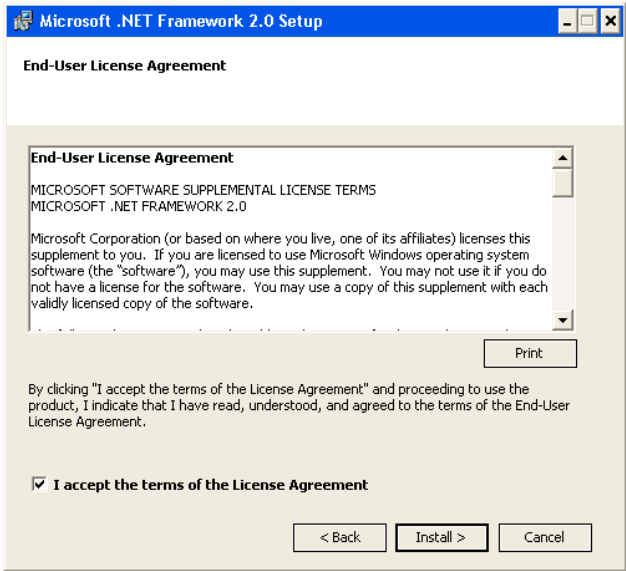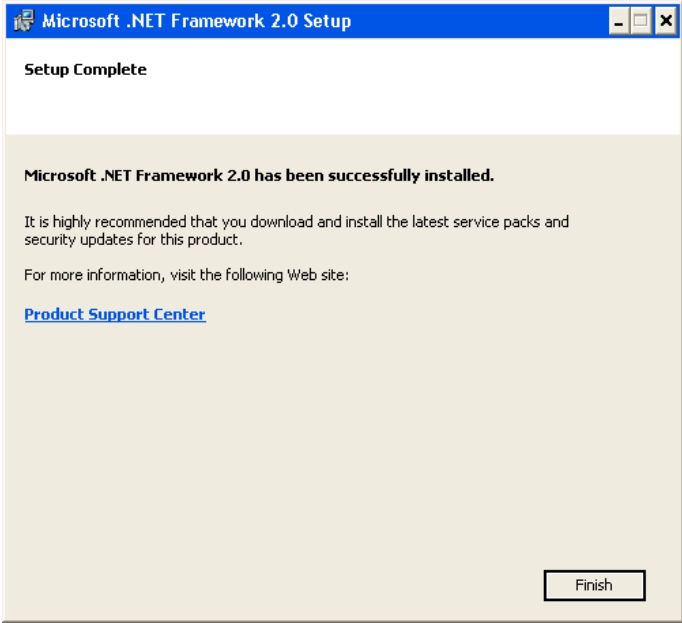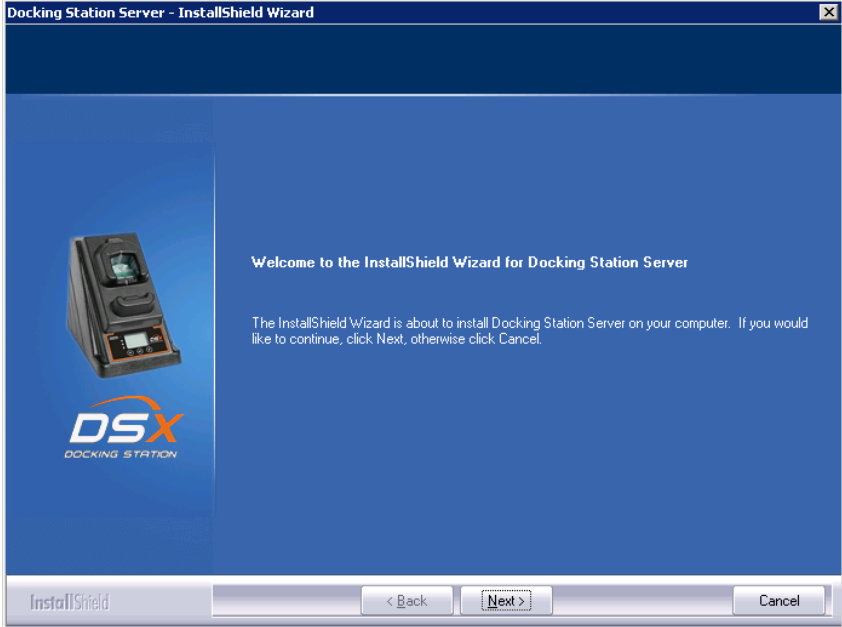
Step	Instruction
1.	Place the DSX Operating CD into your computer.
2.	The CD will automatically run and the following window will appear. **Figure 3-17. The Installer Software Startup Window** The launcher displays seven language options on the screen. Click a language to re-display the Launcher in the chosen language.
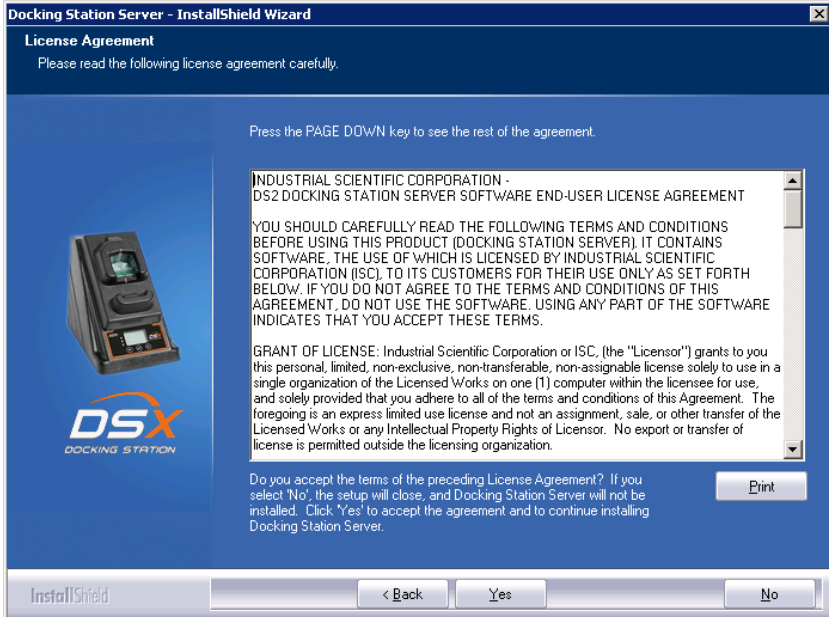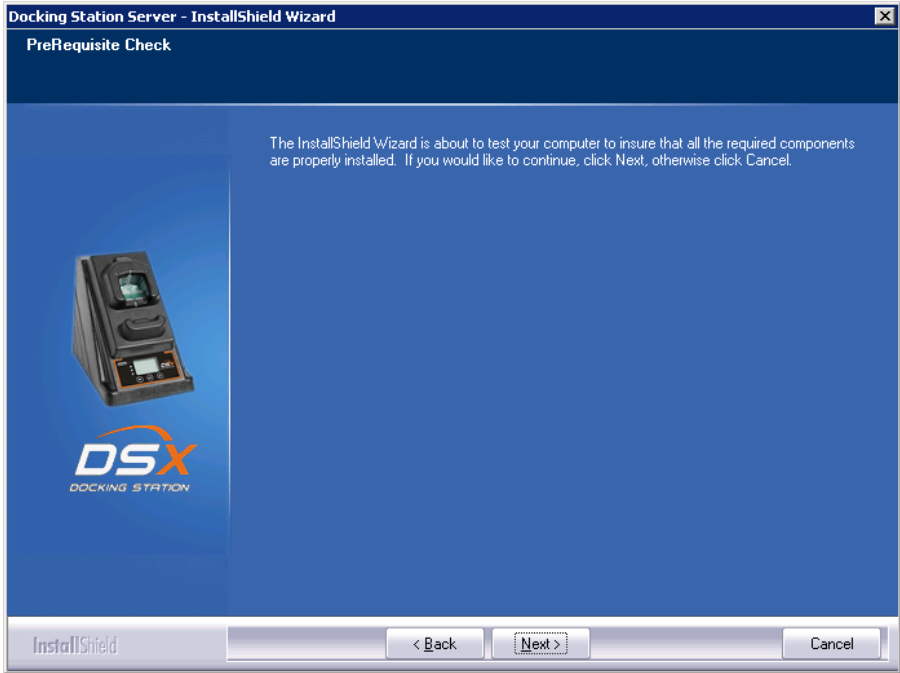
Step	Instruction
3.	Click on "Install Docking Station Server." This will automatically launch the DSS installer. The first window that appears is the License Agreement.
4.	If the Microsoft .Net Framework v2.0 is not currently installed, the following screen will appear. Click "OK".
5.	Click the Next button at the Welcome screen. **Figure 3-18. The Welcome Window**

Step	Instruction
6.	Review the license agreement, choose "I agree," and then click Install.

Figure 3-19. The License Agreement Window

Step	Instruction
7.	The Installer will automatically install the .NET framework (if it currently is not installed). When this installation is complete, the following window will appear. Choose Finish to continue with the installation.

Figure 3-20. The .NET Framework Installation Complete Message Box

Step	Instruction
8.	The DSS software is now ready to install. Choose Next to continue. **Figure 3-21. The DSS Installation Wizard Window**

3.6.   Installation Wizard for DSS

Step	Instruction
1.	Click YES to accept the license agreement. **Figure 3-22. The Software License Agreement Window**

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Step	Instruction
2.	At this point the installation will check to make sure all prerequisites are already installed. **Figure 3-23. The Prerequisite Check Window**
3.	Choose Next.
4.	If installing the DSS software onto Windows 2000 Professional or Windows XP Professional operating systems, the following message will be displayed. This message is a reminder that the maximum number of IDSs that can be connected to a PC is limited to 8. **Figure 3-24. The Max Docking Station Information Window**
5.	Choose OK.
6.	WARNING: *If you are installing the DSS onto a PC running Windows XP Service Pack 2, the warning above applies to you. Please see section 3.14.1.*

Step	Instruction
7.	If the installer does not detect IIS and/or MSMQ, the installation will be halted, and the following warning will appear. To install IIS or MSMQ onto either a server or PC, refer to section 3.3 Installing Microsoft Internet Information Services (IIS) and Microsoft Message Queuing (MSMQ). **Figure 3-25. The Prerequisite Check Failed Window**

3.7. Database Preparation Options for First Time Installations

3.7.1. Overview

This step in the installation is to select the database option that you are going to use. The following window will appear if this is a new installation. For new installations, choose one of the following three options:

(a) Install SQL Server 2008 Express Edition and a New DSS database on this machine
(b) Install new DSS database to an existing SQL Server/SQL Server 2008 Express Edition on this machine
(c) Attach to an existing DSS database available on my network.

Each of these options is explained in the following sections (marked as a, b, and c). After you select your option, choose Next.

NOTE: Regardless of the database location, the following apply:

- File attributes of .MDF files are set to "writable" mode (disables read-only). Since the base structure of databases are copied from CD, the file attribute is set to read-only by default; the change to a writable setting allows the application to use the database.

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- The following services are started through registry: INet Uploader, DSX Printing, and DS2 Broadcaster (during uninstall, these registry entries are removed).

- In SQL Server, the following steps are completed during DSS Install:
    o "DSSUSERROLE" user role will be created.
    o "DS2" login will be created. This is the login used by the DSS server.
    o "DS2" login will be given access to DSS, DSSDL and DSSUSERDIR databases with DSSUSERROLE, and DB_OWNER permissions.
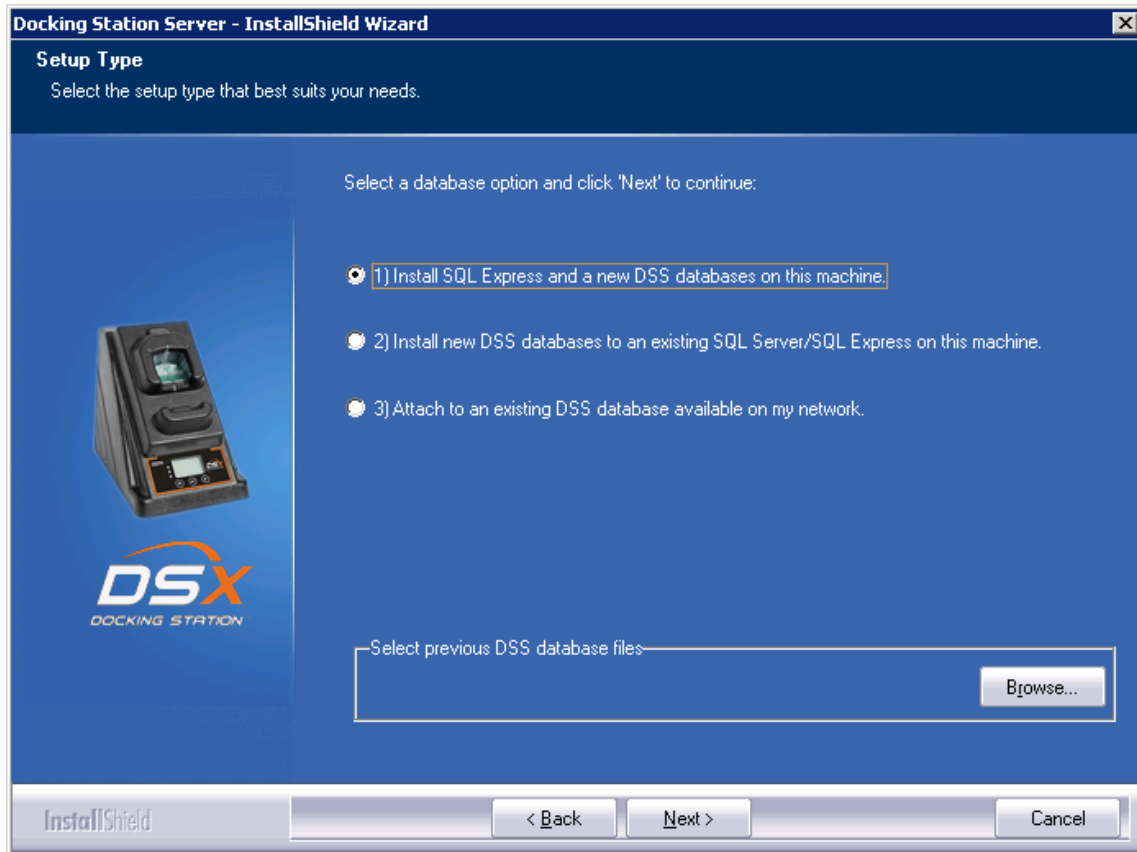
Figure 3-26. The Setup Type Window

NOTE: When performing a fresh install of DSS that includes SQL Server 2008 Express Edition, newer versions of the installer no longer ask for passwords for the SA, SQL DSSUSER and DSSAC DSSUSER accounts. The default value of **D$2u$er$** will be used for all three.

Simplified Flow Diagram for DSS/SQL Express Installation
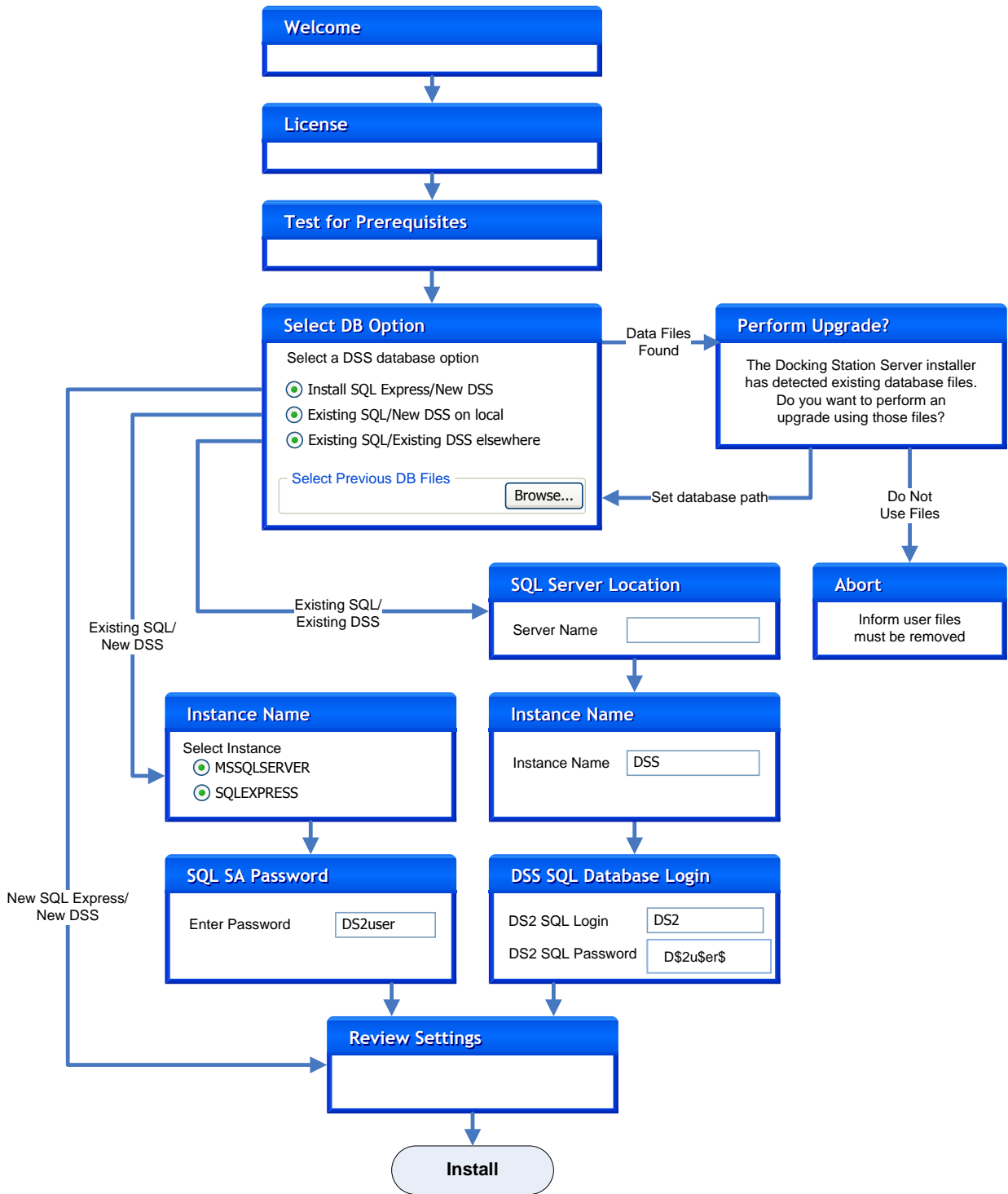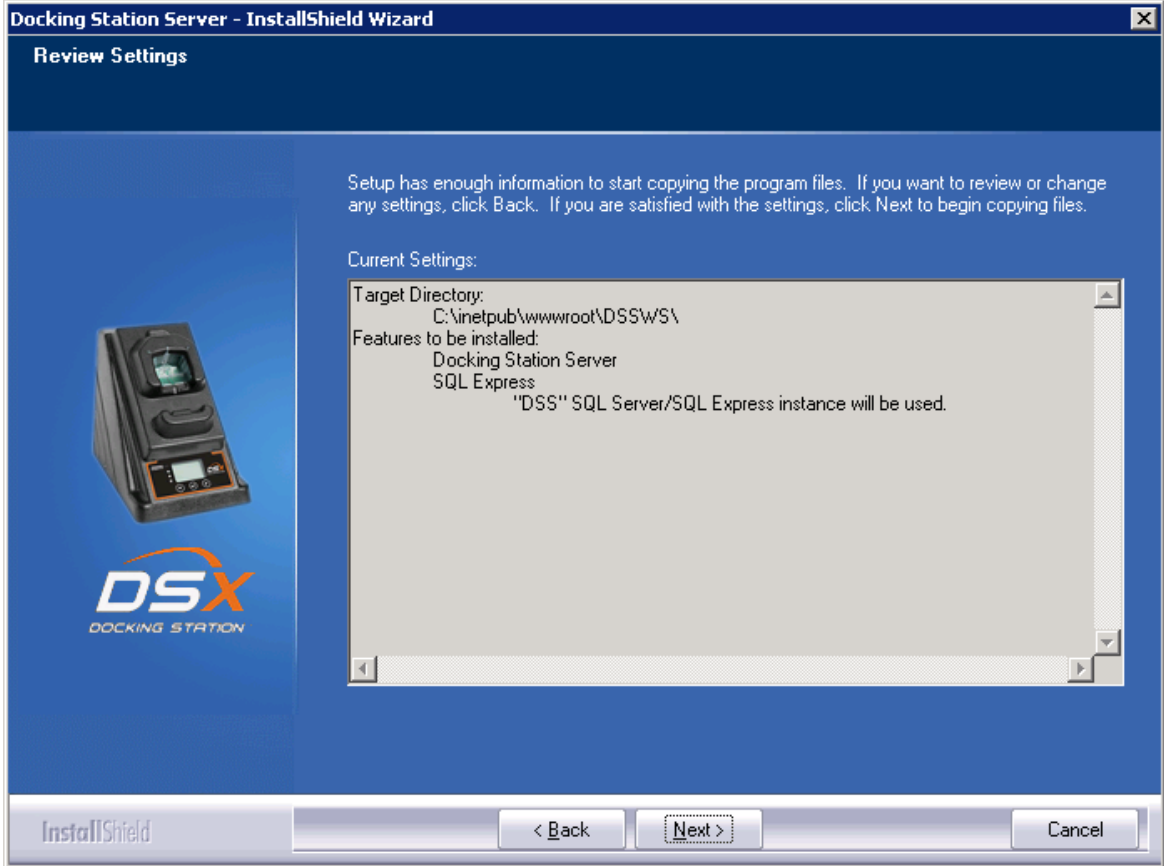
Figure 3-27. Simplified DSS Installation Flowchart

3.7.2a. Install SQL Server 2008 Express Edition and a New DSS Database on This Machine

Step	Instruction
1.	Start installation. **Figure 3-28. Review Settings and Begin Installation**
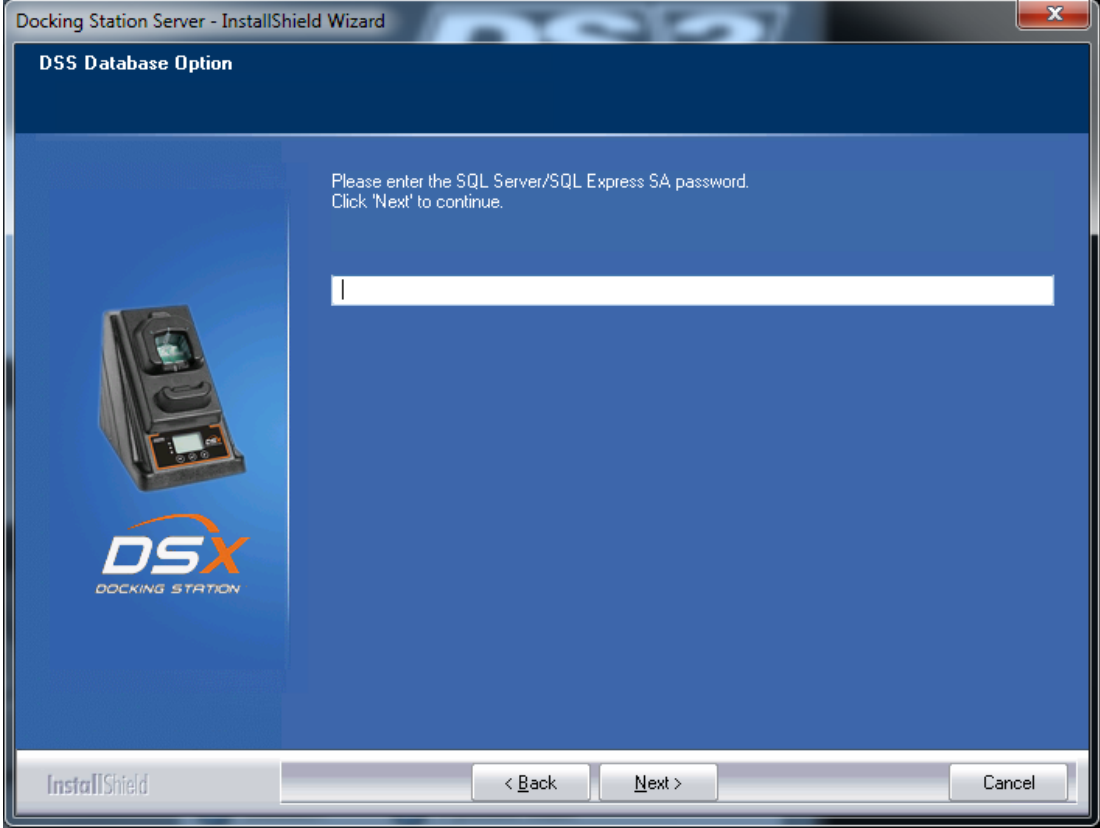
NOTE: A new SQL Server 2008 Express Edition database installed with a fresh DSS installation will use the following default account information:
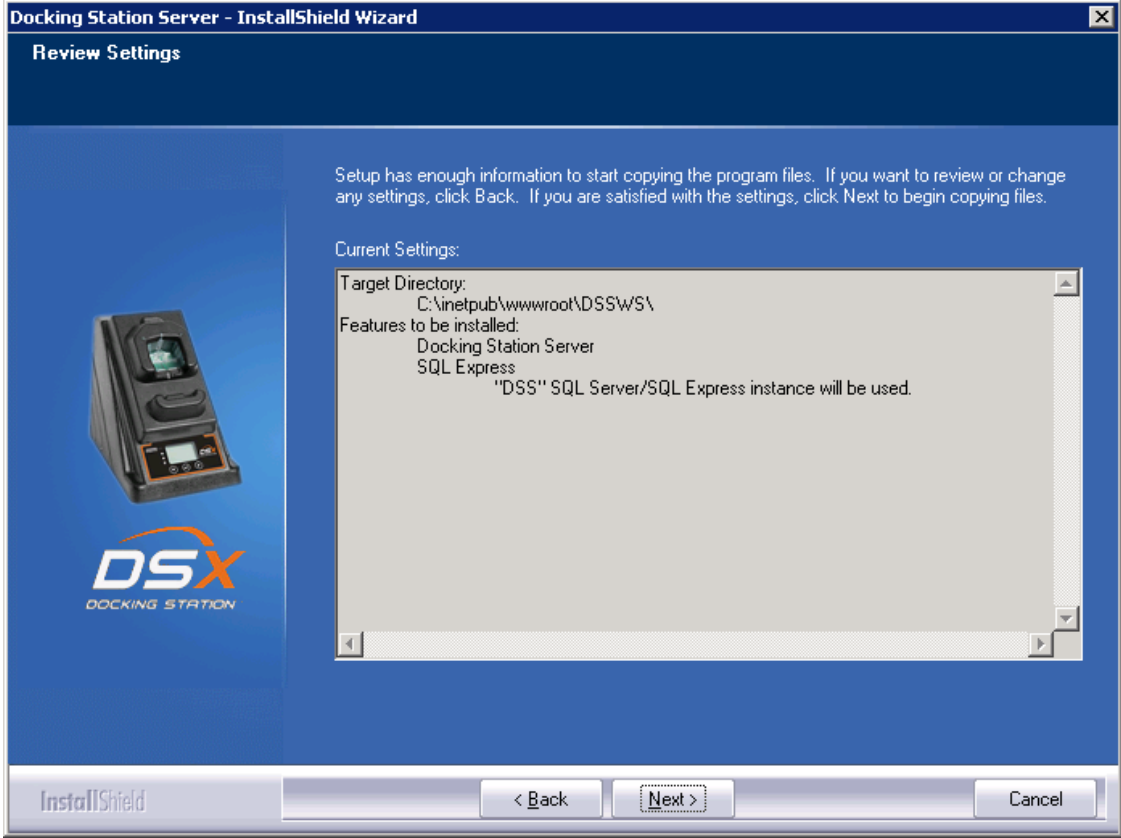
Account	User	Password
SA Password	SA	D$2u$er$D$2uer
DS2 DB User Login	DS2	D$2u$er$D$2uer
DSSAC Default Admin User Login	DSSUSER	DS2user
DSSAC Read-only User Login	GUEST	guest

3.7.2b. Install New DSS Database to an Existing SQL Server/SQL Server 2008 Express Edition on This Machine
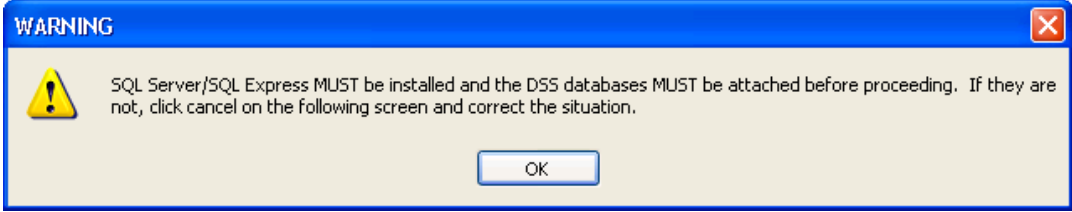
Step	Instruction
1.	When choosing this option, if the installer is unable to find a version of SQL Server installed on the local machine, the following message will be displayed. **Figure 3-29. Missing SQL Server Message**
2.	Select the database Instance name from list of instances currently installed on the PC and choose Next. **Figure 3-30. Select the Database Instance**

Step	Instruction
3.	Enter the System Administrator (SA) Password for the selected instance and choose Next. **Figure 3-31. Entering the System Administrator Password**

Step	Instruction
4.	Start installation.

Figure 3-32. Review Settings and Begin Installation

3.7.2c. Attach to An Existing DSS Database Available on My Network

Step	Instruction
1.	**When choosing this option, the installer will display the following warning that, before proceeding, SQL Server must already be installed on the target PC and the DSS database files must be attached.**

Figure 3-33. Entering the SQL Server Name

2.	Enter the name of the server that SQL Server is running.
	Figure 3-34. Entering the SQL Server Name
3.	Enter the database Instance name and choose Next.
	Figure 3-35. Entering the Database Instance Name
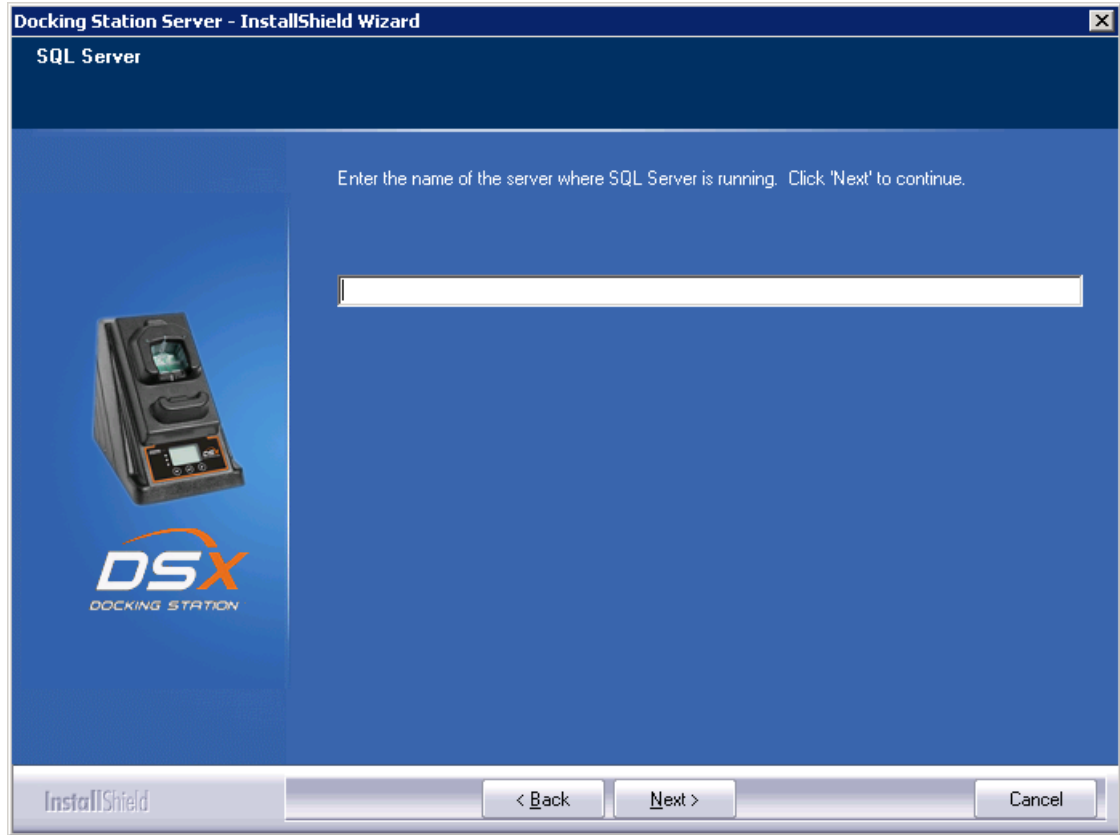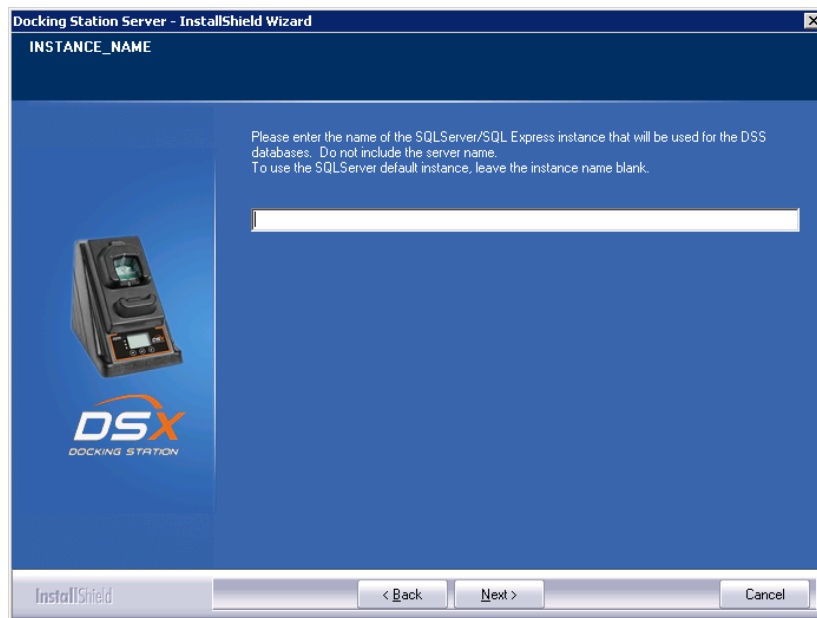
4.	Enter the login Name and Password for the **DSX Server** – SQL Server account and choose Next.	
	Figure 3-36. Entering the DSS SQL Login information	
5.	Start installation.	
	Figure 3-37. Review Settings and Begin Installation	
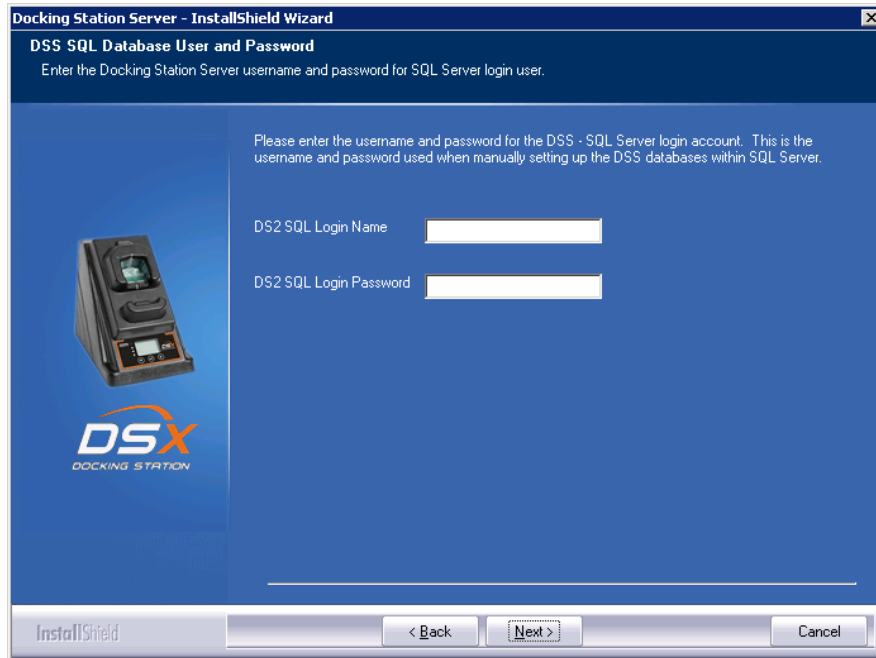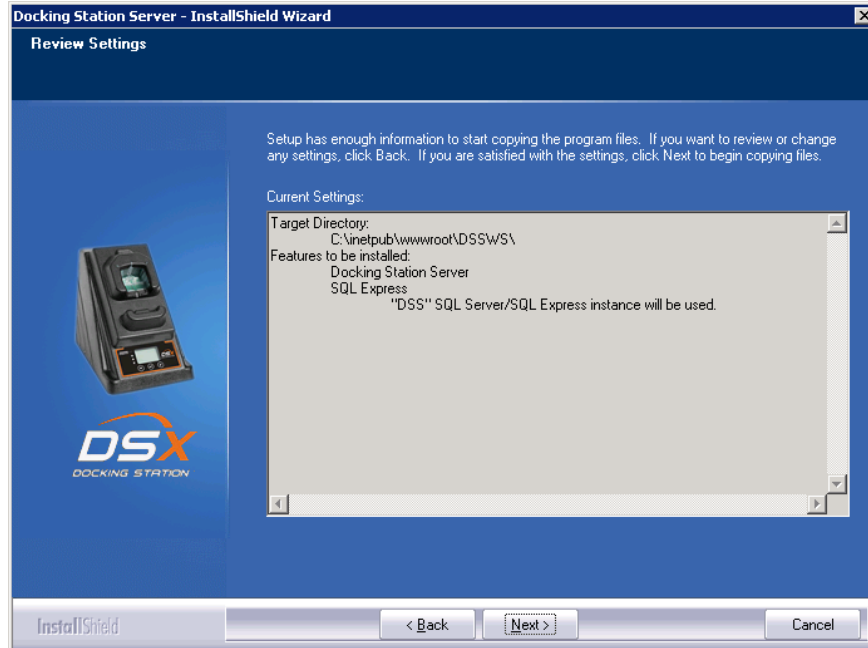
3.8. Continuing Installation (or Installation After Uninstalling a Previous Version)

The following window will appear if you have uninstalled a previous version or you already have SQL Server/SQL Server 2008 Express Edition installed on the current PC and it has the DSS database tables already attached.
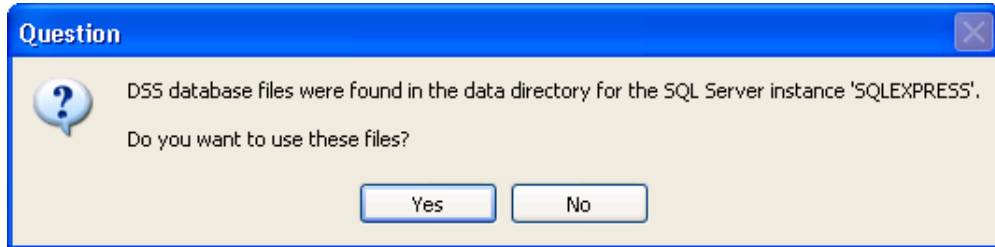
Figure 3-38. Existing DSS BD Files Popup

The installer will recognize the existence of the previous databases and give you the following option. If you want to use the existing databases choose Yes. If you want to start with fresh databases, choose No. If you do choose No, the installer will inform you that you must remove the databases and re-run the installer. It will then quit, allowing you to remove the database files.
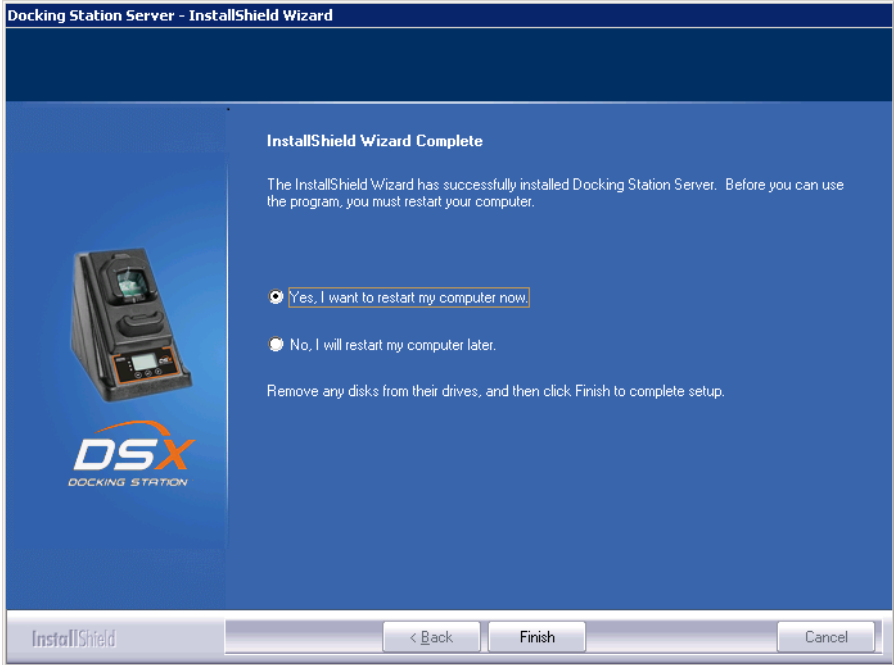
Step	Instruction
1.	Finally, the installation is now complete. Select the desired restart method and choose Finish. **Figure 3-39. Installation Complete Window**

2.	Installation of the DSS will also install the DS2 Broadcaster and start it upon a reboot of the PC. The DS2 Broadcaster is a UDP broadcaster that will broadcast out the IP address of the PC or server running the DSS such that all docking station units on the network will know which computer to communicate with. Industrial Scientific does not recommend turning off your DS2 Broadcaster unless you are running multiple DSSs on your network. It is the policy of some IT professionals not to have the DS2 Broadcaster running on a network. Therefore, the Broadcaster can be turned off.
3.	If the DS2 Broadcaster is disabled, the docking station units will need to know the IP address of the server running the DSS. This is accomplished through using the DSX Configurator Software. See section 3.12 on how to manually send out the IP address of the computer running the DSS.

3.9.   Installing the Docking Station Server Admin Console (DSSAC) Software

NOTE: The following procedure is for the following Operating systems:
- Windows 2000 Standard Server
- Windows 2003 Server Web Edition
- Windows 2000 Professional
- Windows XP Professional
- Windows Vista
- Windows 2008
- Windows 7
- Windows 8
- Windows Server 2012

To begin the installation of the DSSAC software, follow the instructions below.

Step	Instruction
1.	Place the DSX Operating CD into your computer.
2.	The CD will automatically run and the following window will appear. **Figure 3-40. Docking Station Installation Window**
3.	Click on "Install Docking Station Server Admin Console." This will automatically launch the DSSAC installer. The DSSAC can be installed on any computer on the network as well as the server or PC running the DSS software.
4.	The software will guide you through the installation of the DSSAC.

3.10. The Docking Station Configurator

3.10.1. Installing the Docking Station Configurator Software

The Docking Station Configurator Software is a tool that can be used to send the IP address of the server (or PC) that is running the Docking Station Server Software (DSS) to a known IDS. If the DS2 Broadcaster service is turned off, or if an IDS is located on a different subnet than the computer or server running the DSS, then this software package must be used.

NOTE: The following procedure is for the following Operating systems:
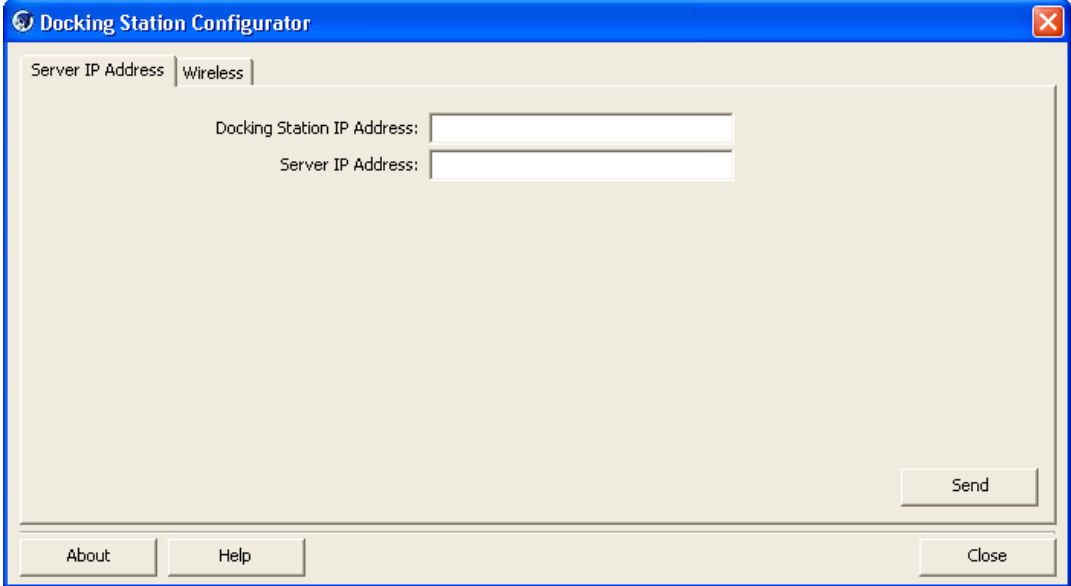
- Windows 2000 Standard Server
- Windows 2003 Server Web Edition
- Windows 2000 Professional
- Windows XP Professional
- Windows Vista
- Windows 2008

- Windows 7
- Windows 8
- Windows Server 2012

Step	Instruction
1.	Place the **DSX** Operating CD into your computer.
2.	The CD will automatically run and the following window will appear. **Figure 3-41. Docking Station Installation Window**
3.	Click on "Install Docking Station Configurator." This will automatically launch the Configurator installer. The configurator software can be installed on any computer on the network as well as the server or PC running the DSS software.

3.10.2. Running the Docking Station Configurator Software

To run the Docking Station Configurator Software, follow the instructions below.
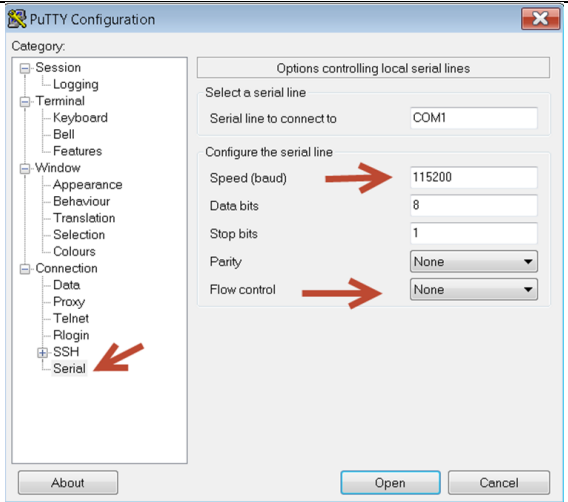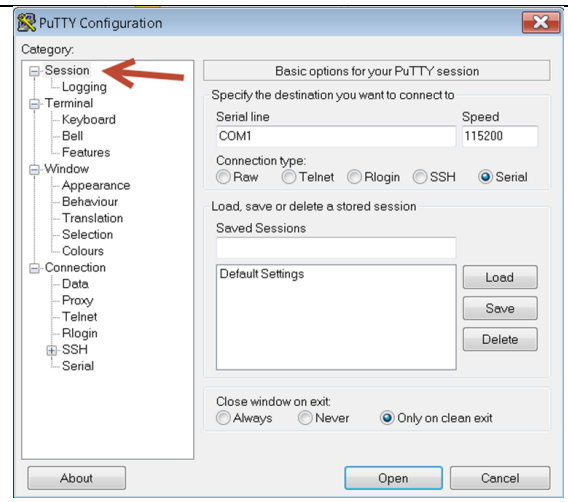
Step	Instruction
1.	Choose START / PROGRAMS / INDUSTRIAL SCIENTIFIC / DS2 CONFIGURATOR. The Docking Station Configurator screen is displayed. To tell the docking station what the IP address of the server is, select the Server IP Address tab, and then type in: - the IP address of the **docking station** - the IP address of the server and choose Send. **Figure 3-42. Docking Station Configurator Screen**
2.	At this point, the IDS will automatically reboot.

3.11. Assigning a Static IP Address to a Server or PC

To assign a static IP address, you will need the desired IP address and the values for Subnet mask and Gateway address. If these values are unknown to you, contact your IT administrator.

The following instructions tell you how to use PuTTy, a free and open-source terminal emulator, to assign a static IP address for the DSX-L.

PuTTy can be obtained at putty.org. From their download page, select putty.exe.

Step	Instruction
11	**Power off the docking station**: remove the power cord from the back of the unit. Ensure the docking station is connected to your computer with a serial cable, either a Male to Female DB-9 serial cable or a USB to DB-9 serial adapter.
12.	From your computer, click on the executable to run PuTTy. In the left column click "Serial". In the dialog box, ensure the parameters are set as they are shown here. *Note:* your COM port may be something other than COM1; check the device manager on your PC to be sure.
13.	Click on Session in the left column. In the dialog box, ensure Serial is selected for Connection type and that the proper COM port is selected. Click on Open. Reconnect the power cable to the back of the docking station. Tap the space bar on your keyboard.

Step	Instruction
	At the blinking prompt, type the number 4 and press enter. The menu will refresh and the DHCP will change from Enabled to Disabled. At the next blinking prompt, type the number 1 and press enter. When prompted, type in the desired IP address, then press enter. The menu will refresh and will show the new IP address. Note: There is no ability to backspace when typing. To correct any typographical errors, simply repeat the task to enter the correct value. In the same manner, type in the number 2 to enter the Subnet mask. Then, type in the number 3 to enter the Gateway address. The menu will refresh after you complete each entry and will show the new values. ``` Ethernet Boot Loader Configuration : 0) MAC address .... (00:0B:D8:99:BE:F0) 1) IP address .... (169.254.10.10) 2) Subnet mask .... (255.255.0.0) 3) Gateway address ...... (169.254.10.1) 4) DHCP .... (Enabled) 5) Boot delay (seconds).. (1) 6) Frequency settings 7) Download device....... (Ethernet) a) Debug device......... (Ethernet (EMACB)) b) Download image to..... (Flash) c) Launch existing flash resident image at startup l) Launch flash resident image now d) Download from Ethernet now s) Save configuration now r) Restore default configuration and save now n) Image flash menu t) Test NAND menu o) OS Image Slot menu u) Update image .... (Disabled) > > Enter new IP address: ```
	Confirm that all values are correct and that the DHCP is still showing as Disabled. If needed, repeat any of the above tasks to correct a value
14.	Once you have confirmed the values are correct, type S and press enter to save the configuration. If the docking station is to be relocated to another area, disconnect the power cord. When the station is relocated, plug its power cord into a suitable outlet.

3.12. Disabling the DS2 Broadcaster

NOTE:	This portion of the installation process is only to be done if the policy of your Information Technology (IT) Department prohibits the broadcaster to be turned on.

The DS2 Broadcaster needs to be disabled if using the DSS on a LAN with other DSS installs. This step is not necessary for a production install of a DSS. This procedure is to accommodate users wishing to install DSS as a demo tool.

To disable the DS2 Broadcaster, follow the instructions below.

Step	Instruction
1.	Navigate to Control Panel (Start / Settings / Control Panel).
2.	Choose Administrative Tools.
3.	Choose Services. The Services window is displayed.
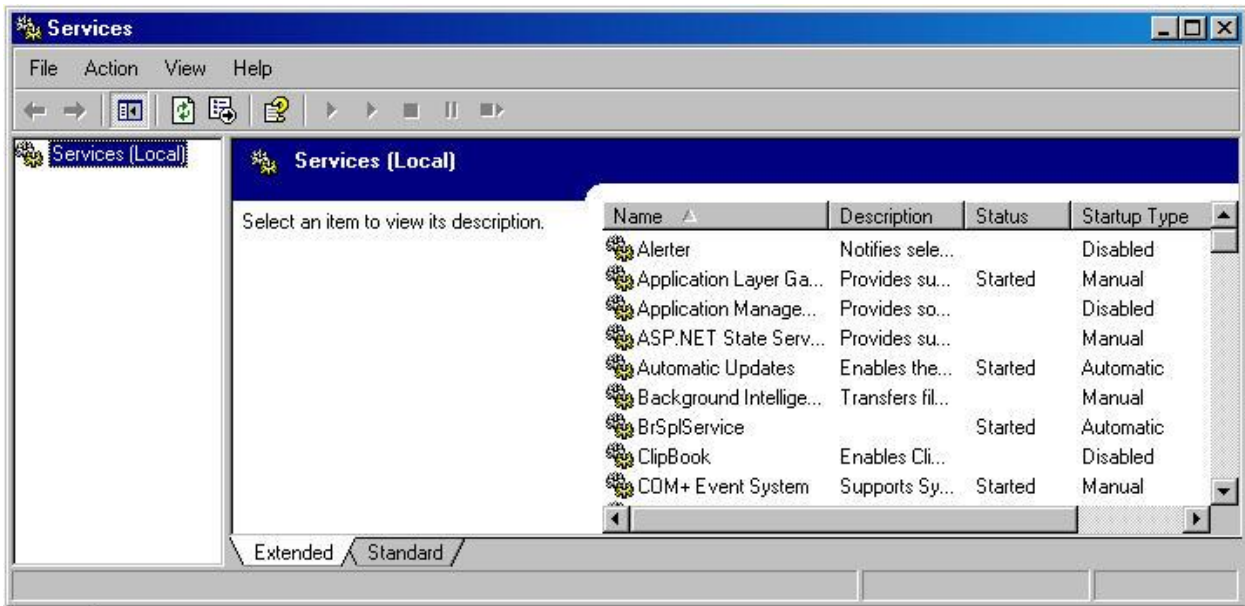
Figure 3-43. Sample Services Window

4.	Locate and right click on DS2 Broadcaster.
5.	Choose Properties.
6.	In the Startup type dropdown box, select Manual.
7.	If the service is currently running, click the STOP button.
8.	Click OK.

3.13. Configuring the Firewall

3.13.1 Windows Firewall

If you are running Windows XP with Service Pack 2, the firewall will need to be set to allow the IDSs to communicate to the server. To properly set the firewall, follow the instructions below.

Step	Instruction
1.	Select Start/Settings/Control Panel/Security Center. The Windows Security Center Screen will be displayed. **Figure 3-44. Windows Security Center Screen**
2.	Select Windows Firewall. The Windows Firewall screen will be displayed.
3.	The default setting shows the Windows Firewall "On". Select the Advanced tab. Select "Local Area Connection" and click the Settings button next to it.
4.	Check the box next to "Web Server (HTTP)" Click OK and exit.
5.	NOTE: This procedure *does not disable the firewall*. Adding the Web Sever (HTTP) setting allows this service to communicate through the firewall. This allows the IDSs to communicate to the DSS software package installed on the PC.
6.	NOTE: When updating Windows XP, the firewall may be enabled and may stop communications. When this occurs, the firewall must be disabled.
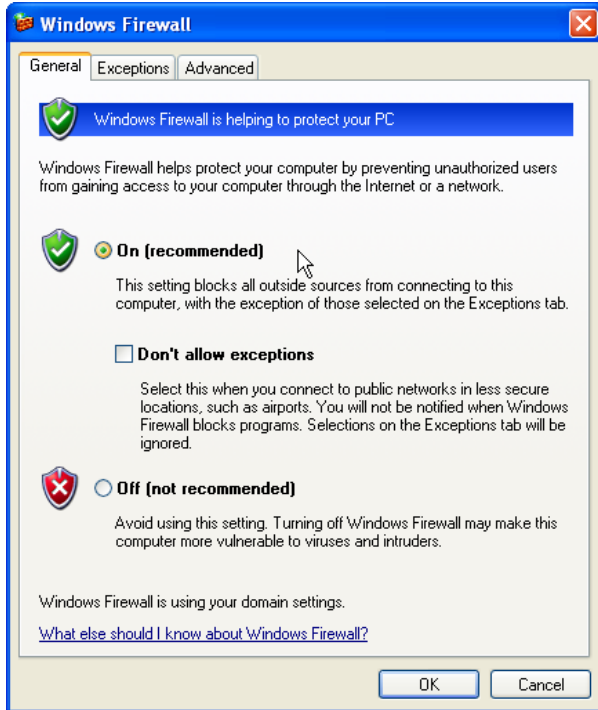
Figure 3-45. The Windows Firewall Screen
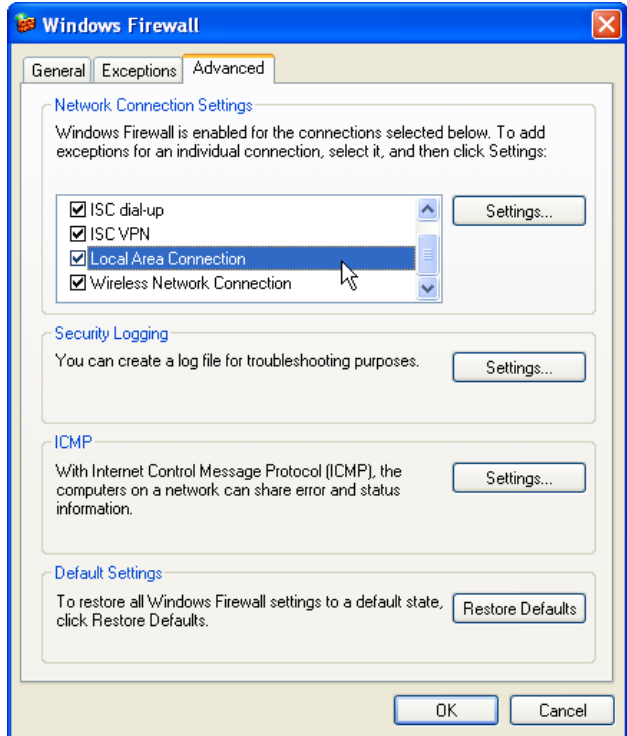
Figure 3-46. The Advanced Tab of the Firewall Window
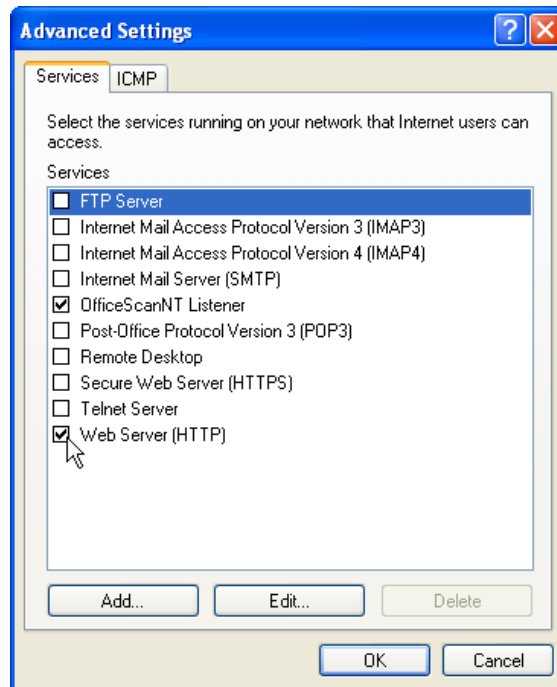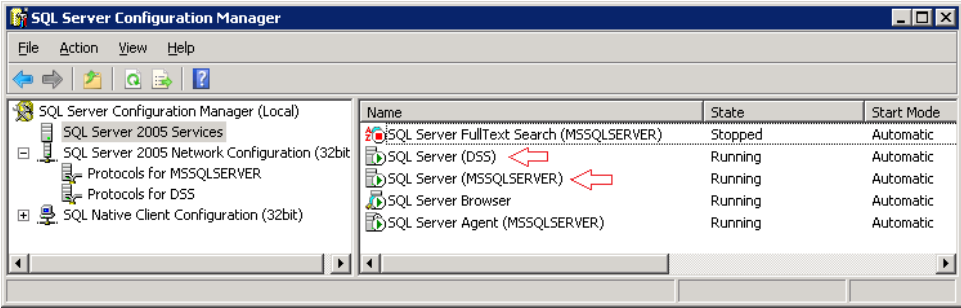
Figure 3-47.   The Web Server (HTTP) Check Box

3.13.2. Windows Firewall for SQL Server in Server 64-bit OS (Windows 2003, Windows 2008, and Windows 7)

Step	Instruction
	NOTE: the user should be logged-on as an Administrator to perform the following tasks.
1.	Make sure that "IIS_IUSRS" group has been provided the full access permissions for "C:\Windows\Temp" directory. • Navigate to C:\Windows. • Right-click on "Temp" directory and choose Properties. • In Security tab, make sure that IIS_IUSRS group has been listed. If not listed, click the "Modify" or "Edit" button; click the "Add" button and add "IIS_IUSRS"; and click the Resolve button on the right-hand side. Mark "Full Control" and click Apply and OK. It will give one warning message; click OK.
2.	Enable Windows Firewall if it was disabled earlier.
3.	Go to All Programs >> Microsoft SQL Server 2008 >> Configuration Tools >> SQL Server Configuration Manager.
4.	Choose SQL Server Services and check that SQL Server (<<instance name>>) is running.
5.	Navigate to SQL Server Network Configuration >> Protocols for MSSQLSERVER and Enable TCP/IP if it is disabled.
6.	Navigate to SQL Server Network Configuration >> Protocols for DSS (if available) and Enable TCP/IP if it is disabled.
7.	Right-click on TCP/IP and choose Properties. Scroll to the bottom and clear TCP Dynamic Ports and add TCP Port as "14331" (*note: Port can be any number but it should not be conflict with any other port*).

8.	Navigate to SQL Server Network Configuration >> Protocols for MSSQLSERVER. 	
9.	Disable "VIA" protocol Name, if it is enabled. (*Note: The VIA protocol only works with VIA hardware that has the VIA driver installed. If you enable the VIA protocol on a computer that does not support the VIA protocol, the SQL Server service will not start.*)	
10.	Repeat steps 7 and 8 for Protocols for DSS, if available.	
11.	Go to Control Panel >> Windows Firewall >> Change Settings >> Exceptions >> Add Port.	
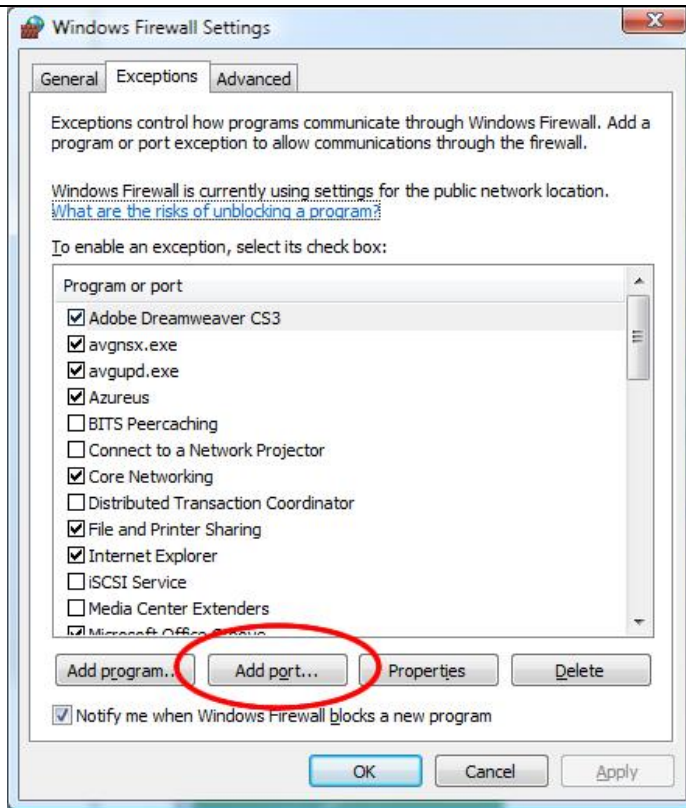
12.	Make the following entries in the pop-up "Add a Port" and click OK.
13.	Verify "SQL" has been added to the Exceptions list and click OK.
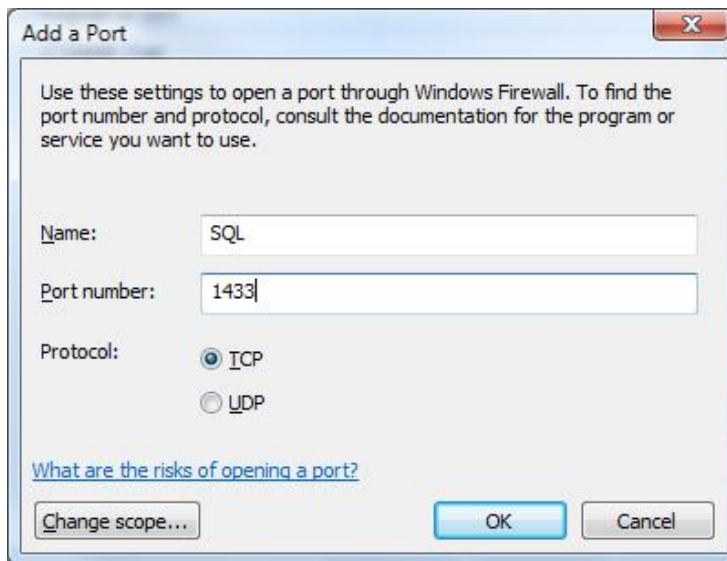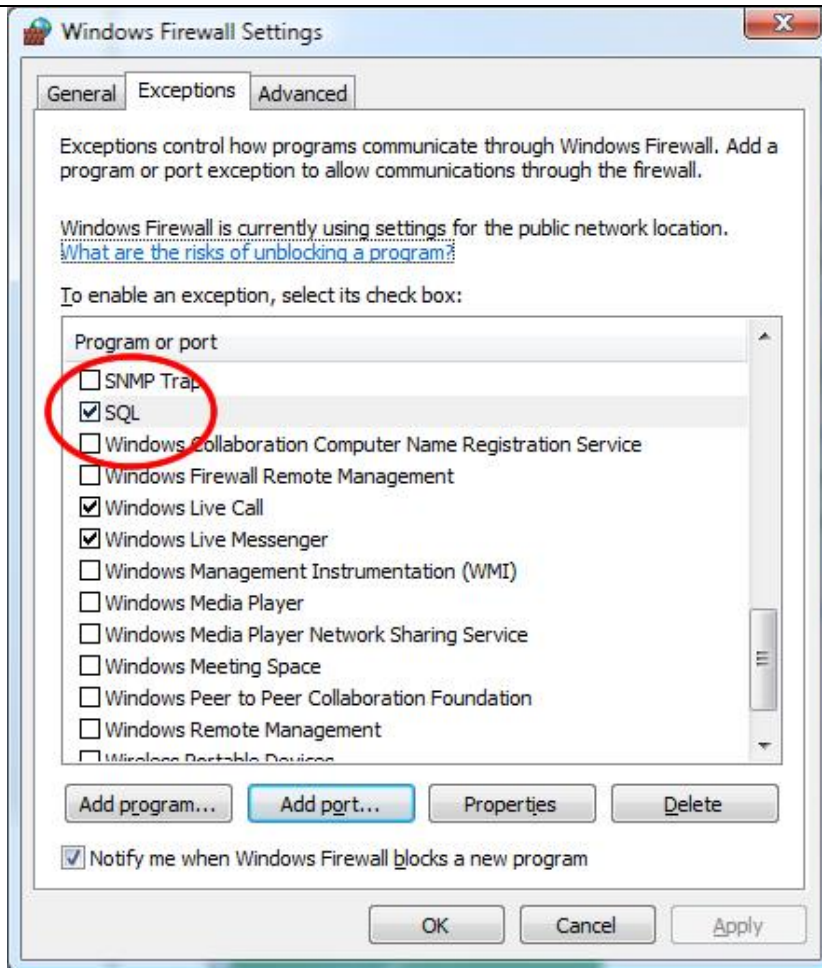
14.	Click "Add Port" again and make the following entries in the pop-up and click OK. **Make sure that port number given in Step 6 is given here.**
15.	Verify "SQLDSS" has been added to the Exceptions list and click OK.
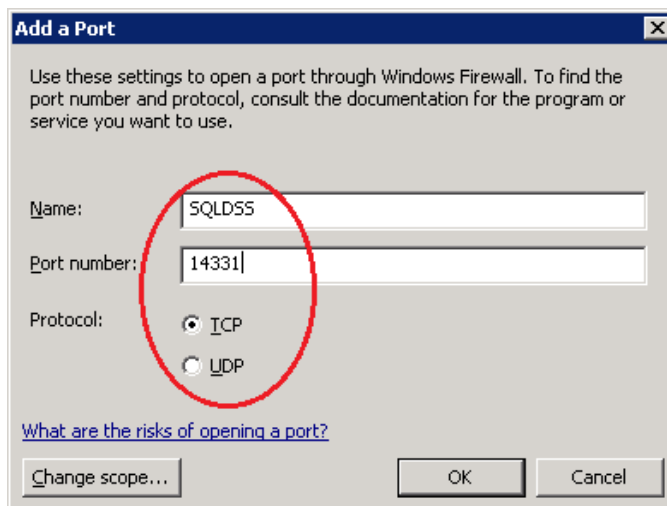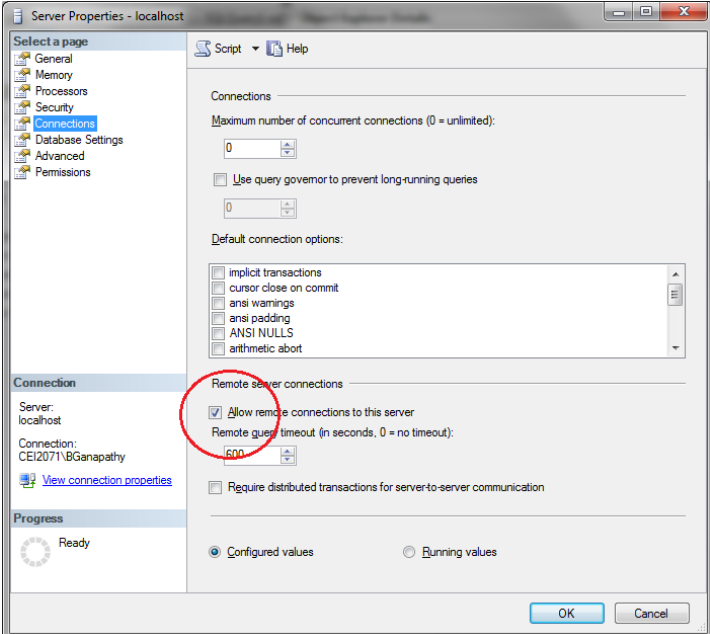
16.	Click "Add Port" again, and make the following entries in the pop-up and click OK. **Make sure that UDP Protocol is selected and Port number is 1434**. Name it as you wish. ![Add a Port dialog box showing Name: SQLBROWSER, Port number: 1434 (circled), Protocol: TCP or UDP with UDP selected (arrow pointing to it)] Add a Port Use these settings to open a port through Windows Firewall. To find the port number and protocol, consult the documentation for the program or service you want to use. Name:　　SQLBROWSER Port number:　　1434 Protocol:　　○ TCP 　　　　　　　● UDP What are the risks of opening a port? Change scope...　　OK　　Cancel
17.	Verify "SQLBROWSER" has been added to the Exceptions list and click OK.
18.	Log on to SQL Server using SA log-in or Windows Authentication. Right-click on the server node and choose Properties localhost (SQL Server 9.0.4053 - CEI2071\BG 　Databases 　　System Databases 　　Database Snapshots 　　DSS 　　DSSDL 　　DSSUSERDIR 　Security 　Server Objects 　Replication 　Management 　Notification Services 　SQL Server Agent (Agent XPs disabled) Connect... Disconnect Register... New Query Start Stop Pause Resume Restart Reports　▶ Refresh Properties
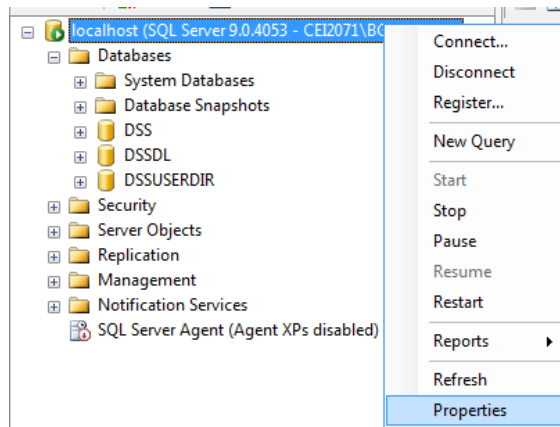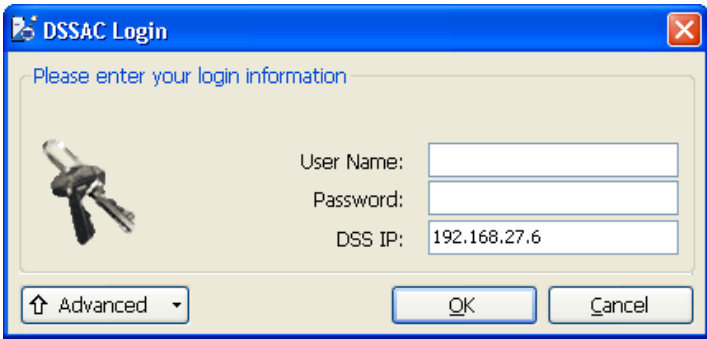
19.	Go to Left Tab of Connections and verify "Allow remote connections to this server" is enabled.
20.	Restart IIS where DSS is installed.
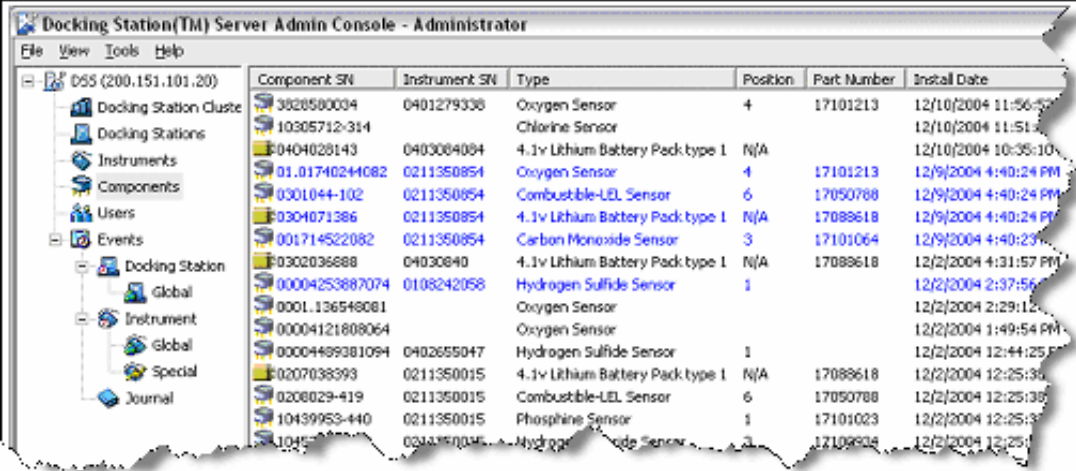
3.14. Overview of the DSSAC Application

This section explains how to start the DSSAC application and contains an overview of the user interface.

3.14.1. Starting the DSSAC Application
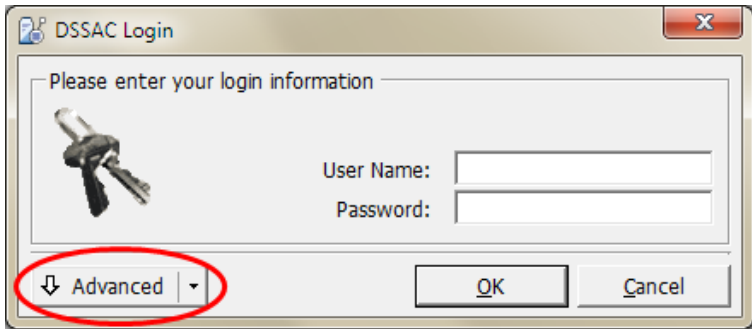
To start the DSSAC application, follow the instructions below.
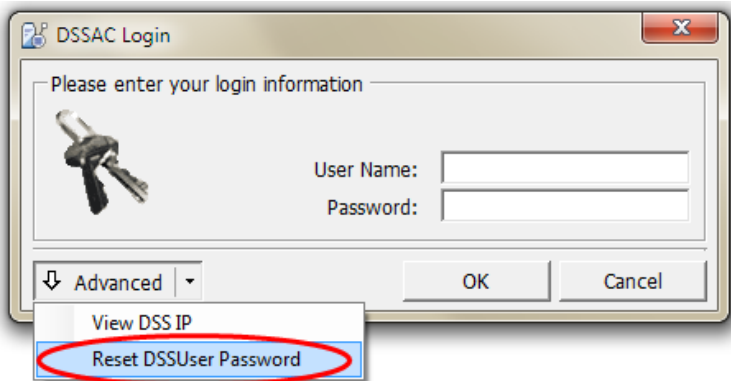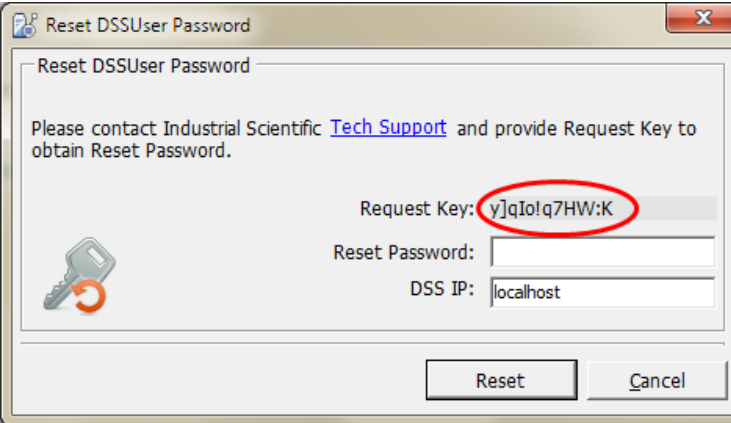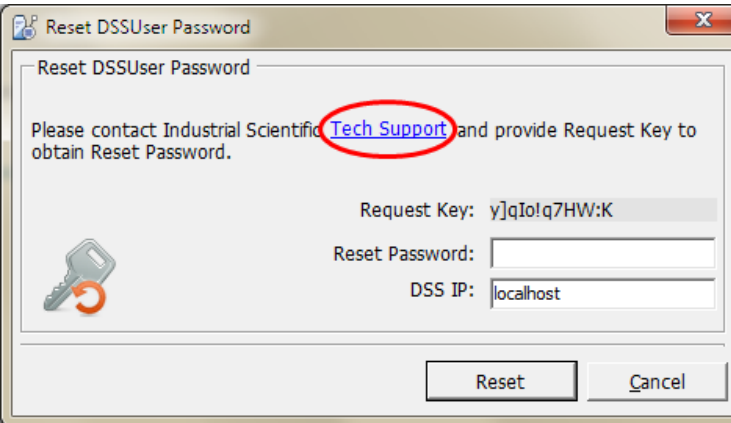
Step	Instruction
1.	Using the Windows® Start menu, select Programs, then Industrial Scientific Corporation, and then Docking Station Server Admin Console.
2.	The DSSAC splash screen appears, followed by the DSSAC Login dialog box. Enter your User Name and Password and click the OK button. NOTE: Passwords are case-sensitive and can be a maximum of 30 characters in length.	 **Figure 3-48. DSSAC Login Window**
	Alternative: You may also press the ENTER key on your keyboard after you have
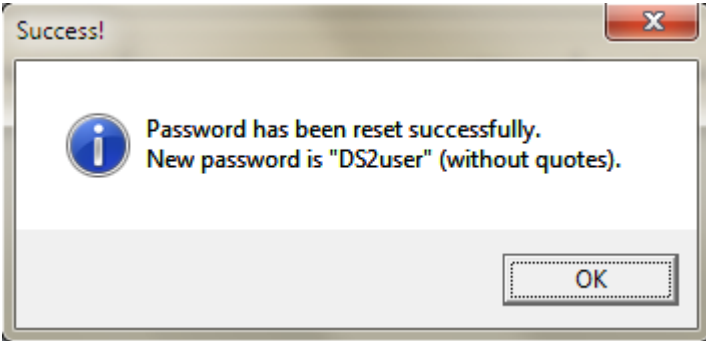
Step	Instruction
	entered your User Name and Password. NOTE: If you click the Cancel button, the DSSAC does not open.
3.	The DSSAC application opens. The title bar displays the role (e.g., Technician or Administrator) to which your user account is assigned. **Figure 3-49. DSSAC Application Showing User Role in Title Bar**
4.	To close the DSSAC application, click on the File menu, and select Exit.

3.14.2. Resetting the DSSUSER Password

This section explains how to reset the DSSUSER password.

Step	Instruction
1.	From the DSSAC Login window, click on the "Advanced" tab to reveal its drop-down menu. **Figure 3-50. DSSAC Login Window**

Step	Instruction
2.	From the Advanced drop-down menu, click on the option, Reset DSSUser Password. **Figure 3-51. DSSAC Login Window**
3.	The Reset DSSUser Password window will open. The Request Key box (read-only field) will be automatically populated with a randomly generated string. **Figure 3-52. DSSUser Password Window with Request Key.**
4.	Click on the Tech Support link to locate an ISC Technical Support center. Provide the support representative with the Request Key. The representative will then provide the Reset Password. Enter this into the Reset Password field. Click on Reset to complete the process. **Figure 3-53. Reset DSSUser Password Window**

Step	Instruction
5.	If successful, a confirmation box will open. Click OK. If unsuccessful, an error message box will open. The cause will be indicated and may be due to an older version of DSSAC installed at the DSS IP address, or an error in the DSS IP address field. Contact ISC Technical Support for assistance.	

3.14.3. Specifying the DSS IP Address

By default, the DSSAC will attempt to log in to the nearest Docking Station Server (DSS) from which it receives a broadcast. If you know the IP address of another DSS, you can log into it by specifying the server's address in the **Login** dialog box. You will also need to specify the DSS IP when your DSS is not using the broadcaster service.

To specify a DSS IP address, follow the instructions below.
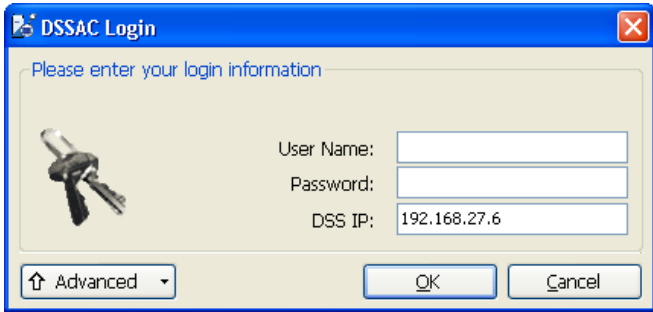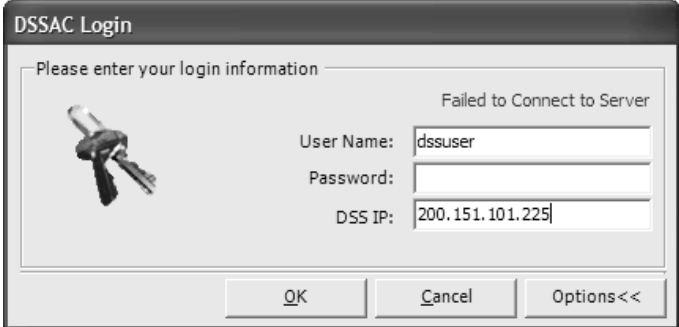
Step	Instruction
1.	Using the Windows$^{®}$ Start menu, select Programs, then Industrial Scientific Corporation, and then Docking Station Server Admin Console.
2.	The DSSAC splash screen appears, followed by the DSSAC Login dialog box. Enter your User Name and Password.
3.	Click the Options button. The DSS IP field will appear in the DSSAC Login dialog. NOTE: Clicking the Options button again will hide the DSS IP field.
4.	Enter the IP address of the DSS to which you would like to connect. Click the OK button. **Figure 3-54. Specifying the DSS IP Address at Login**

5.	DSSAC connects to the specified DSS and the application opens.
6.	When the DSSAC is unable to connect to the server during log in, the error message "Failed to Connect to Server" is displayed.

Figure 3-55. Failed to Connect to Server Message

NOTE: When you restart the DSSAC, it will always attempt to log in to the DSS from which a broadcast is received, if any. If a broadcast is not received, it will remember the IP of the DSS to which the DSSAC was last logged in.

3.14.4. The DSSAC Screen

The DSSAC screen is similar to Windows® Explorer, containing a navigation pane on the left side, and a contents pane on the right.

NOTE: The title bar of the DSSAC shows the name of the user who is currently logged in. The title bar also displays the user's role (e.g., Technician "JOESMITH").

Navigation Pane   Contents Pane
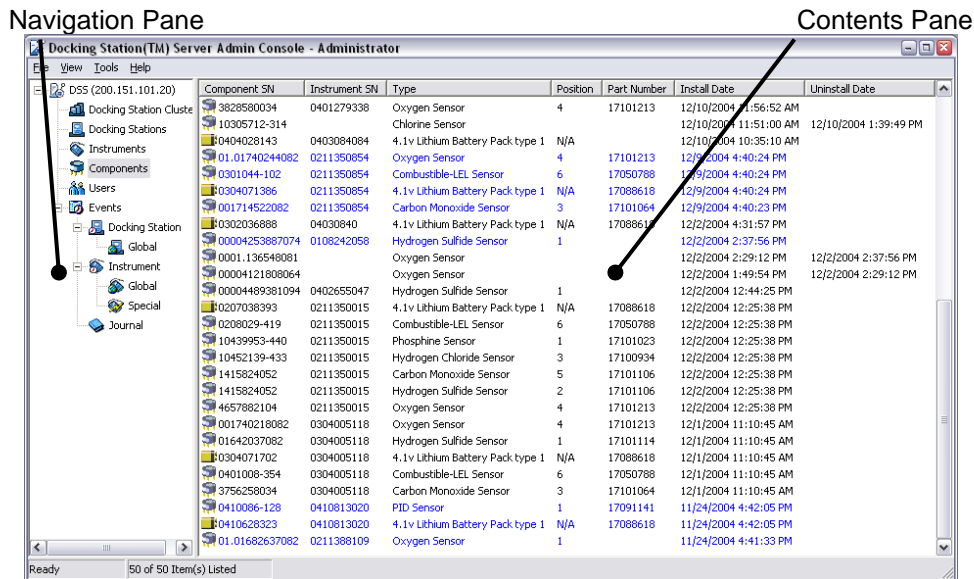
Figure 3-56. The DSSAC Screen

The DSSAC window also contains a menu that is used to perform certain commands. Specific instructions on using the menu options are covered in the Using Docking Station section. The menu options are shown below.

Table 3-1. DSSAC Menu Options

Menu	Option	Description
File	Change Password	Used to change your DSSAC password.
	Add	Used to add information into the system. This option may not be available depending on what type of object is selected in the DSSAC.
	Remove	Used to remove information from the system. This option may not be available depending on what type of item is selected in the DSSAC.
	Properties	Used to view information about the currently selected item. This option may not be available depending on what type of object is selected in the DSSAC.
	Print	Used to print information about the currently selected item. This option may not be available depending on what type of object is selected in the DSSAC.
	Exit	Used to close the DSSAC application.
View	Configuration	Used to change language settings, and, if you are a Systems Administrator, iNet settings.
	Default Alarm Settings	Used to manage default alarm settings for the GasBadge Pro, MX6 iBRID, Tango TX1, Ventis Pro4, Ventis Pro5, Ventis MX4, and Ventis LS instruments. This option is only available only if you are a systems administrator.
	Default Calibration Gases	Used to manage the default calibration gases for GasBadge Pro, MX6 iBRID, Tango TX1, Ventis Pro4, Ventis Pro5, Ventis MX4, and Ventis LS instruments. This option is only available if you are a systems administrator.
	Refresh	Used to update the contents pane to display the most recent information.
Tools	Find	Used to locate instruments that meet certain criteria, such as those instruments due for calibration. This option is only available when the instruments object is selected in the navigation pane.
Help	Contents	Used to view the help documentation for the DSSAC.
	About DSSAC	Used to view version information about the DSSAC.

3.14.5. Using the Navigation Pane

The navigation pane contains a tree-like structure showing the contents of a docking station network. When you select an option in the navigation pane, a list of related items appears in the contents pane on the right. For example, if you click on Instruments in the navigation pane, a listing of instruments configured for use in the system appears in the contents pane.

At the top of the tree is an option for DSS, which represents the server. If you click on the DSS option, you can see the current status of IDSs that are currently running in the socking station network.

Under the DSS entry are the following options.
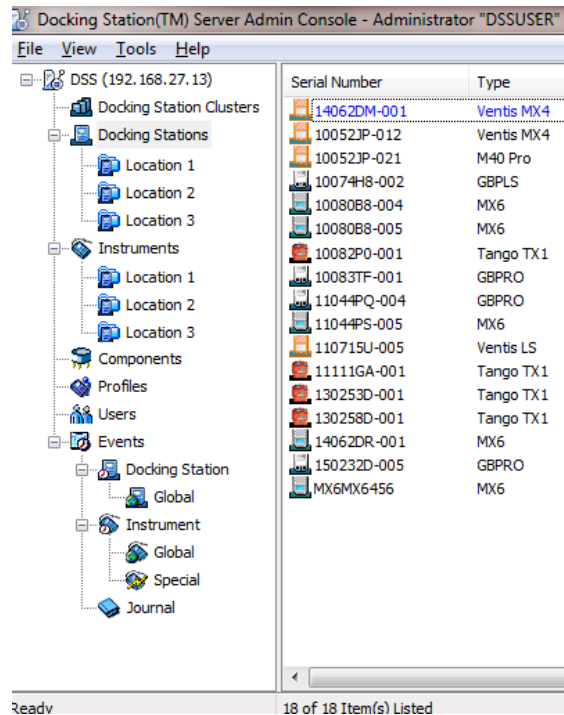
Figure 3-57. Navigation Pane

NOTE: The **DSS** and **Events** options in the navigation pane can be collapsed and expanded, similar to file folders in Windows®Explorer. If you see a minus sign (-) next to the option, then it is expanded. If you see a plus sign (+) next to the option, then it is collapsed. You can collapse or expand the entry by clicking on the minus or plus sign or by double-clicking on the entry. The **Docking Station** and **Instrument** options underneath the **Events** option can also be collapsed and expanded.

Table 3-2. Options Under the DSS Entry in the Navigation Pane

Option	Description
Docking Stations	Displays a list of Instrument Docking Stations that are configured in your docking station network. These can be sorted by location and can be designated as "Out of Service". See the How to Setup and Configure an Instrument Docking Station (Chapter 6) for information about setting up IDSs.
Instruments	Displays a list of instruments in your docking station network. See the How to

Option	Description
	Setup and Configure Instruments section for information about configuring instruments.
Components	Displays a list of all of the components in the DSS database, whether or not they are currently installed in an instrument. The component list for each instrument includes those items shown on the "Components" tab of the Instrument form, including sensors and batteries. The default sort order of the list is in ascending by instrument serial number. If the user clicks any column header in the right pane list, the list is sorted by that column. If the user double-clicks on any sensor in the list, the "Edit Sensor" screen opens. If the user double-clicks on any battery in the list, the "Edit battery" screen opens.
Users	Displays the user accounts created to use the DSSAC. Only Systems Administrators can see the Users option. See the Setting up Users for more information about user accounts.

Events	Contains options for scheduling global and special events for IDSs and instruments. See the How to Schedule Events section for more information. The Events options are:	
	Docking Station:	Global - Displays Global events that are configured for IDSs.
	Instrument:	Global - Displays Global events that are configured for instruments. Special - Displays Special events that are configured for instruments.
	Journal:	Displays information about activities that have occurred for instruments in the system.

3.14.6. Using the Contents Pane

The specific information that you see in the contents pane varies depending on the option selected in the navigation pane. The contents pane displays a list of information that can be sorted in various ways. If more than one item is displayed in the contents pane, the column headings can be used to re-sort the information that you are viewing.

Figure 3-58. Sample Contents Pane Showing Column Headings for Sorting

For example, when viewing the list of instruments as in the picture above, the contents pane contains eight column headings: **Serial Number, Type, Last Cal, Next Cal, Last Bump, Next Bump, Status** and **Location**. If you click the **Type** heading, the list sorts by instrument type. If you click on **Serial Number**, the list sorts by Serial Number of the instrument. Likewise, if you click on **Status**, the list of instruments sorts by status.

NOTE: All column headings in the contents pane can be used to sort the data that you are viewing.

Each column heading can also be resized to better accommodate the information being displayed. You can resize the column headings in one of two ways.

1. Place your mouse pointer over the divider between two column headings. Your mouse pointer changes into a vertical bar with an arrow on each side. Click and drag to change the size of the column.

2. Place your mouse pointer over the divider between two column headings. Your mouse pointer changes into a vertical bar with an arrow on each side. Double-click to resize the column to fit the widest entry in the column.

3.14.7. Viewing and Re-instating Removed Instruments

The DSSAC tree view (left panel) contains an "Removed from System" sub-node for Docking Stations and instruments that have been removed.

NOTE: Pressing [F5] while the DSSAC Main Screen is selected, refreshes the Docking Station and Instrument Sub-nodes.

Selecting the "Removed from System" sub-node will cause the right-panel to display all Docking Stations (or instruments) which have been removed from service. This node will have an icon similar to the other location nodes except it will have an "X" to indicate removed.
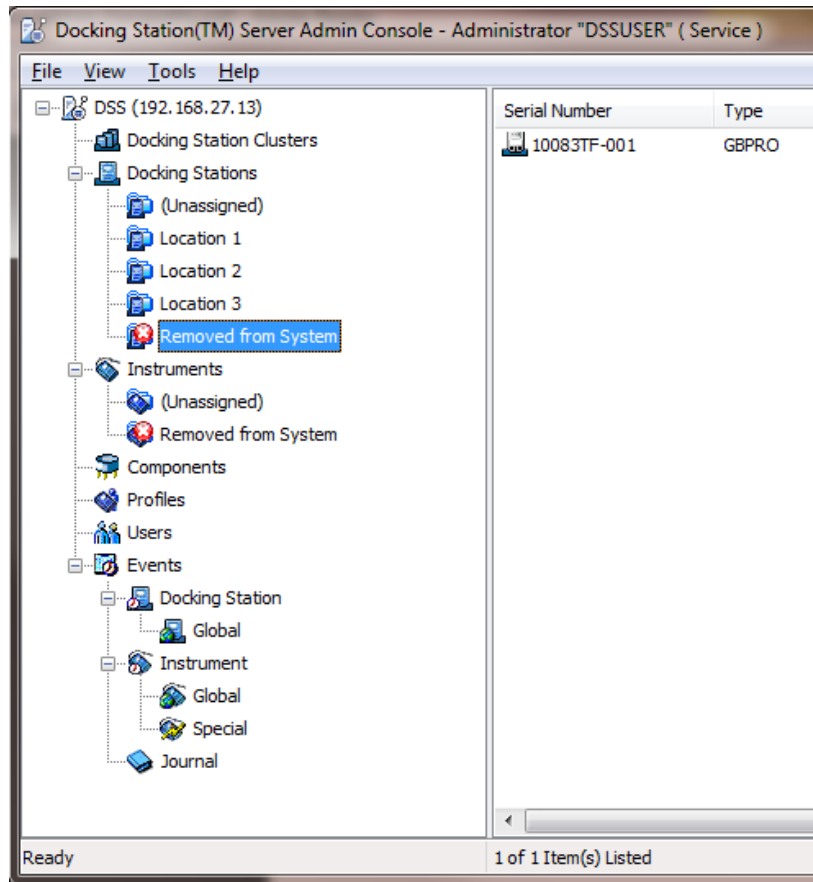
Figure 3-59. DSSAC Tree View Showing Removed Instruments

The following functions apply to removed instruments:

- Double-clicking or selecting the properties of a docking station or instrument has the standard results.

- Pressing [F5] while a Docking Station Archived sub-node is selected only refreshes the docking station list in the right pane.

- Selecting a docking station while on the Docking Station (or instrument) "Removed from System" sub-node and right-clicking on it, adds "Restore" to the context menu list.

- Selecting the "Restore" menu option causes the selected Docking Station or Instrument to be un-removed and shown in the normal Docking Station node.

- If the user assigns a location value of "Removed from System", a separate node will be created with the standard location node icon.
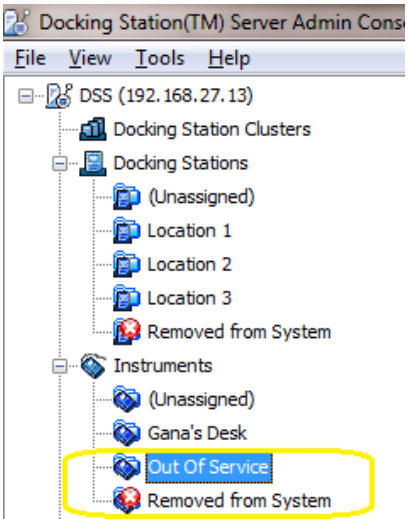
Figure 3-60. DSSAC Tree View Showing User-Assigned Out of Service Location Value

To view removed from system nodes, access the View menu and select the "Display 'Removed from System' Node" option.
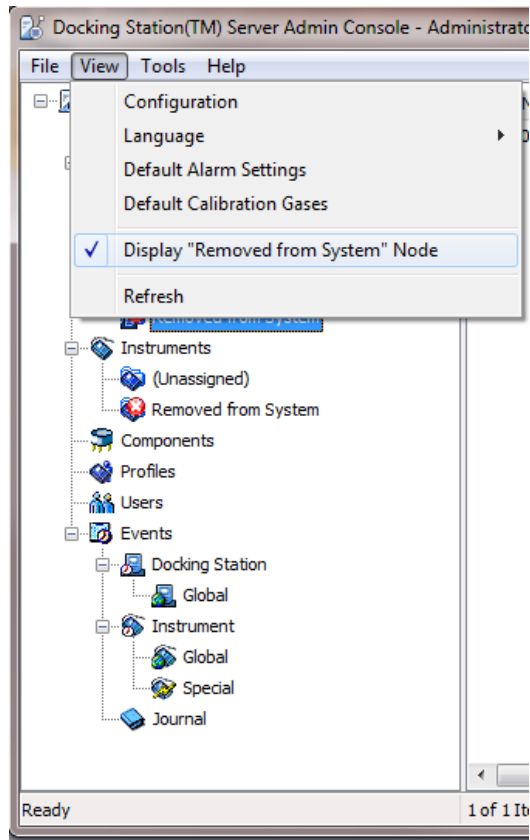
Figure 3-61. The Display "Removed from System" Node Option

Clicking the "Display 'Removed from System' Node" menu toggles its check mark (which indicates whether the feature is enabled or not). The default setting for the menu option is unchecked, which means removed from system nodes are not displayed.

- When the check mark is on, the "Removed from System" node for the Docking Stations and Instruments is visible (if docking stations and/or instruments have been removed).

- When the check mark is off, the "Removed from System" node for the Docking Stations and Instruments will not be visible (regardless if docking stations and/or instruments have been removed).

3.14.8. The Instrument Node in the Tree View

The Instrument option is a node on the tree view used to perform functions associated with instruments. These functions include adding instruments, refreshing instrument lists, applying profiles of similar instruments, and printing instrument information.
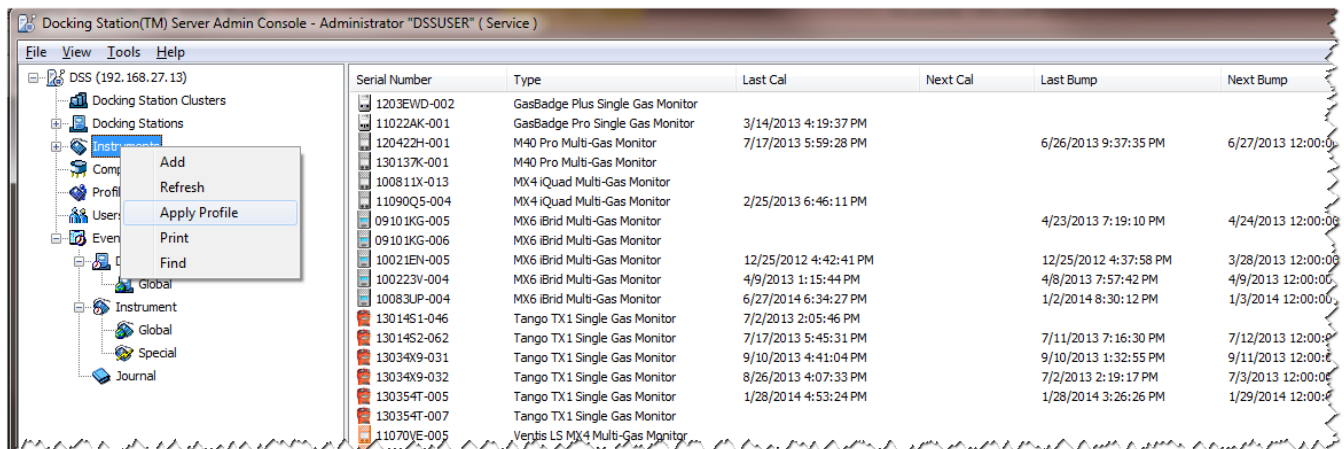
Figure 3-62. The Instrument Node in the Tree View

The context menu for the Instrument node on the tree view contains an "Apply Profile" option that is used to apply profiles to selected instruments of matching instrument type. When this option is selected, the Apply Profile screen is displayed.

3.14.9. The Profiles Node in the Tree View

The Profiles option is a node on the tree view used to apply profiles to selected instruments of matching instrument type. When the Profile Node is selected, the list view in the right pane displays all available Profiles currently saved within the DSS database
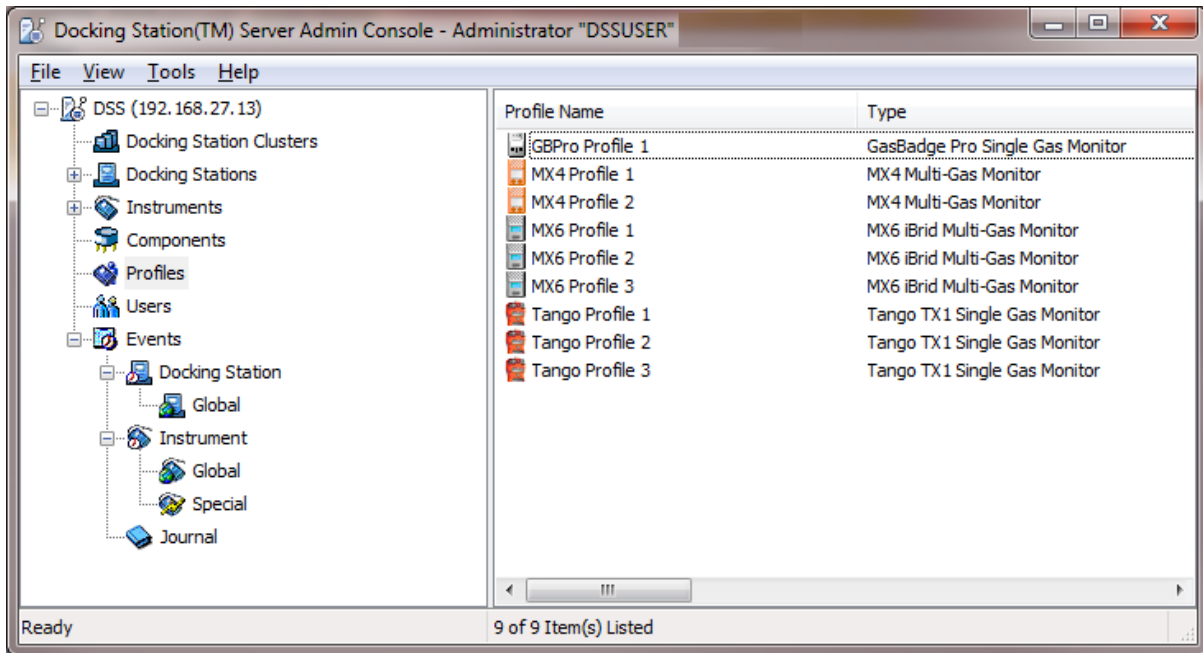
Figure 3-63. The Profiles Node in the Tree View

Whenever the Profiles node is selected, the File menu on the main menu bar will have an enabled "Apply Profile" menu option. Selecting the Apply Profile menu option opens the "Apply Profile" screen.
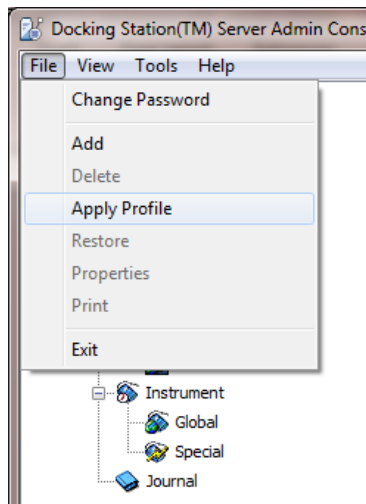
Figure 3-64. The Apply Profile Option of the File Menu

Selecting File from the menu bar while the Profiles node is selected will enable the Add sub menu. Right-clicking on the Profiles node will display a context menu which contains the Add option (for Administrators only) and Refresh option.

- Selecting the Add from the menu bar or from the context menu opens the Edit Profile screen in add mode.
- Selecting Refresh from the context menu refreshes the list of current profiles saved within DSS.

The Profiles list view displays information about the current profiles. The information is provided in two columns:

- **<u>Profile Name</u>** - This column will display the name for each available profile.

- **<u>Type</u>** - This column will display the type of instrument the profile has been created for. If the user clicks any column header in the right pane list, the list shall be sorted by that column. By default, the list view will be sorted alphabetically first on the Type column and then the Profile Name column.

If an Admin User double-clicks on any profile in the list, the "Edit Profile" screen will open. If an Admin User right-clicks on a Profile, a context menu which contains the following menu options will be displayed.

- Properties   (Single Selection)
- Remove from Service   (One or More Selected)

Selecting Properties from the context menu opens the Edit Profile screen in edit mode. Selecting Remove from Service from the context menu prompts the user to confirm the deletion of the Profile(s). If the user confirms the deletion, the profile(s) is permanently deleted.

3.14.10.   Applying Profiles – The Apply Profile Screen

The Apply Profile form is used to apply profiles to selected instruments of matching instrument type. The Apply Profile form has a list view of all the available profiles, a list view of instruments matching the profile instrument type, an Apply and Close button.
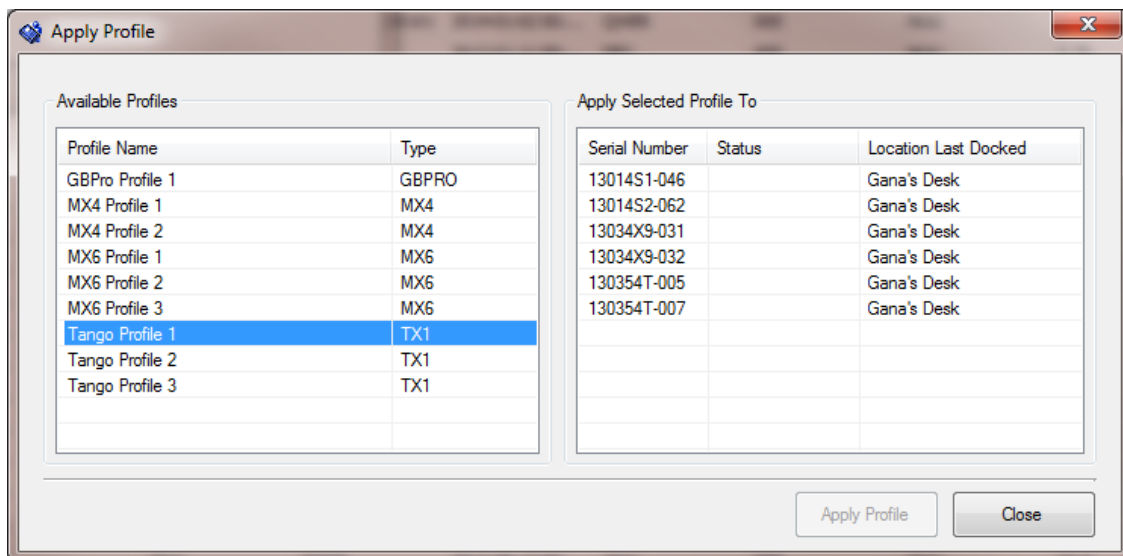
Figure 3-65. The Apply Profile Screen

Table 3-3. Components of the Apply Profile Screen

Component	Description
Available Profiles list view	The Available Profiles list view will display all of the currently created profiles. The Available Profiles list view has two columns: Profile Name and Type. If the user clicks any column header within the list view, the list is sorted by that column. By default, the list view is sorted alphabetically first on the Profile Name column. Double-clicking on any single profile opens that profile in the Edit Profile form.
Apply Selected Profile To list view	The "Apply Selected Profile To" list view displays all of the instruments associated with the currently selected profile type. It has three columns: Serial Number, Status and Location Last Docked. If the user clicks any column header within the list view, the list is sorted by that column. By default, the list view is sorted alphabetically first on the Profile Name column. Multiple instruments can be selected within the list view.
Apply Profile Button	**The Apply Profile button is disabled by default. Once one or more instruments are selected, it is enabled. Clicking the Apply Profile button applies the selected profile to the selected instruments. When the profile is successfully applied, the following message is displayed.** **Figure 3-66. Update Complete Message After Profile Is Successfully Applied**
Close Button	**Clicking the Close button will close the Apply Profile form.**

3.14.11. The Edit Profiles Screen – General Tab

The General tab of the Edit Profiles screen is shown below. It displays the profile name, password and profile type.
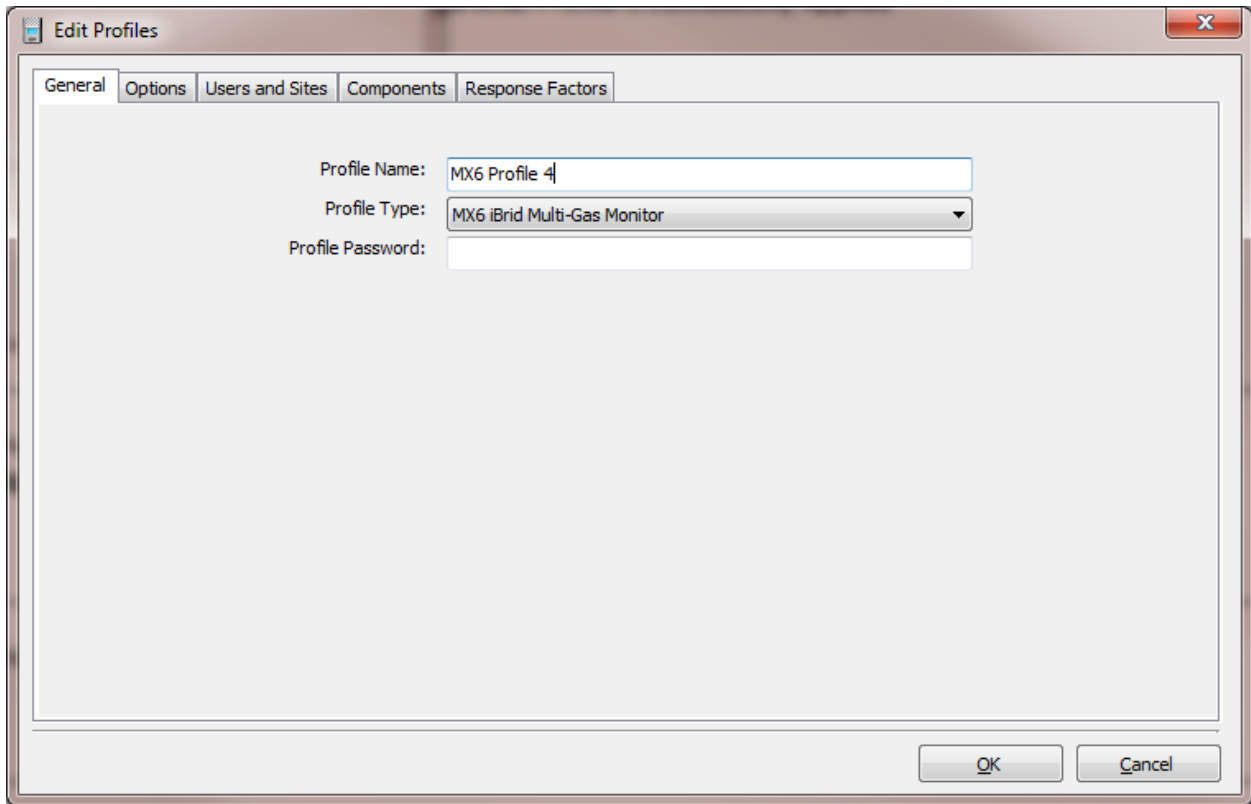
Figure 3-67. The Edit Profiles Screen – General Tab

Table 3-4. Components of the Edit Profiles Screen – General Tab

Component	Description
Profile Name	This is the user-defined name for the profile. A name MUST be specified, but can be no longer than 24 characters.
Profile Password	This field is used to specify an optional password needed to apply the profile when using the instrument. Password maximum length is 10 characters.
Profile Type	This field is a pre-populated drop-down list of dockable instruments. It determines which instrument types the selected profile may be applied to. This field is enabled during adding a new profile and is disabled when editing an existing profile. Changing this field removes existing options and components and re-configures the tabs to match the newly selected profile type.

The Options tab of the Edit Profiles screen is shown below. It defines which options will be set within the profile. This tab mimics the Options tab on the Edit Instrument Screen in functionality. Only group options relevant to the instrument type are enabled, and only Boolean options (true/false or on/off) relevant to the instrument type are shown within the tree node list. The individual group options are enabled depending on the instrument type.
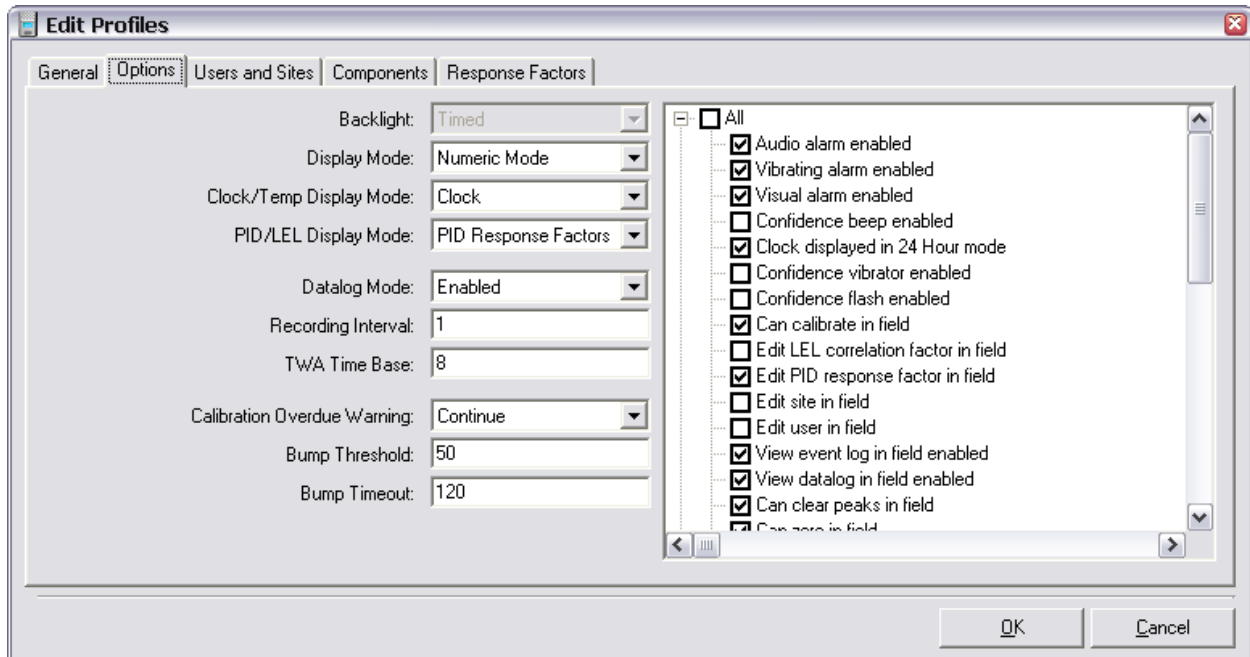
Figure 3-68. The Edit Profiles Screen – Options Tab

The following table indicates when the controls are enabled for the supported instruments.

Table 3-5. Controls Enabled on the Options Tab Based on Instrument

('X' indicates the absence of controls for specific instrument type)

Option	GBPro	MX4	MX6	Tango TX1
Bump Test Overdue Warning	X	X	v3.5 and Above	
Calibration Date on Start up	X	X		X
Calibration Display mode	X	v3.7 and above	v3.5 and Above	
Bump Interval	v2.0 and above		X	
Confidence Indicator Type	X		X	
Bump timeout				

The Users and Sites tab of the Edit Profiles screen is shown below. It displays the users and sites assigned within the profile. It displays all the users and sites currently available, the users and sites which are currently assigned to the profile, and the active user and site to be set within the profile. This tab mimics the Users and Sites tab on the Edit Instrument Screen in functionality.
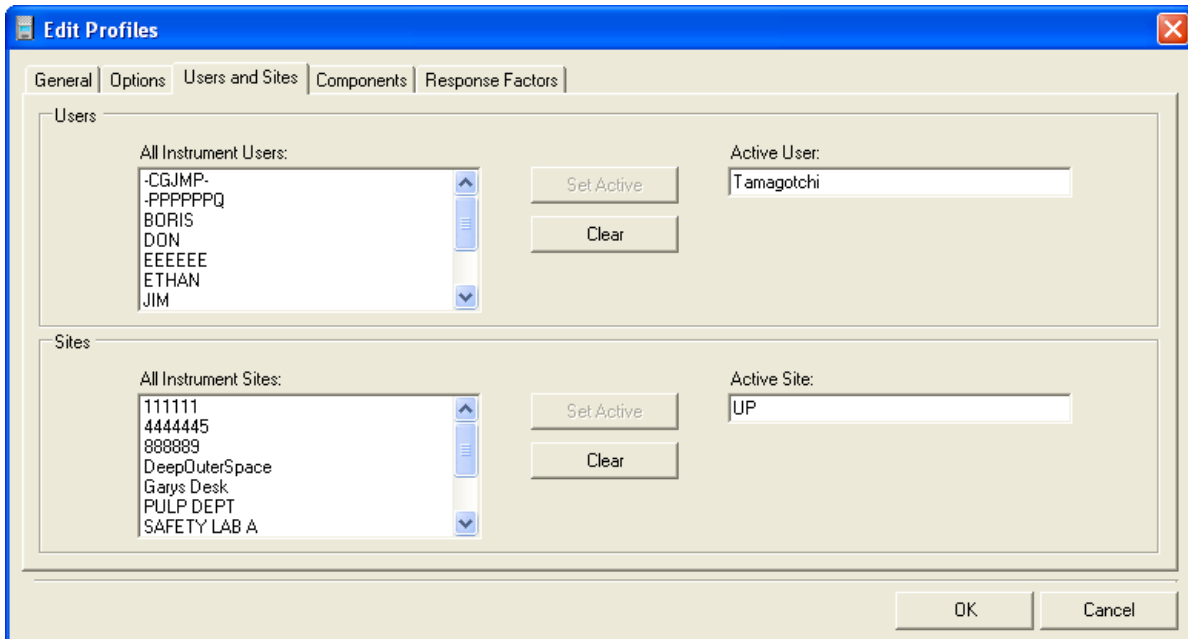
Figure 3-69. The Edit Profiles Screen – Users and Sites Tab

Table 3-6. Components of the Edit Profiles Screen – Users and Sites Tab

Component	Description
All Instrument Users list box	This list box displays all of the users which are available within the system and may be used in being assigned to a profile. The list comes from all of the users currently assigned to an instrument within the system. Double-clicking on a user within the All Instrument Users list makes it the current Active User.
Active User text box	This text box displays/sets the currently selected Active User for the selected profile. The maximum length allowed entered is 16 characters.
All Instrument Sites list box	This list box displays all of the sites which are available within the system and may be used in being assigned to a profile. The list comes from all of the sites currently assigned to an instrument within the system. Double-clicking on a site within the All Instrument Sites list will make it the current Active Site.
Active Site text box	This text box displays/sets the currently selected Active Site for the selected profile. The maximum length is 16 characters.

Component	Description
Set Active Button	The Set Active Button is used to indicate which user or site should be the active user/site within the instrument when the profile is applied. This button is disabled by default, but becomes enabled when a single user/site is selected from the All Instrument Users/Sites list.
Clear Button	The Clear button is used to clear the Active User/Site text box.

The Components tab of the Edit Profiles screen is shown below. This tab displays the profile component information. It contains a list of the component types assigned to the profile as well as an Install and Uninstall button.
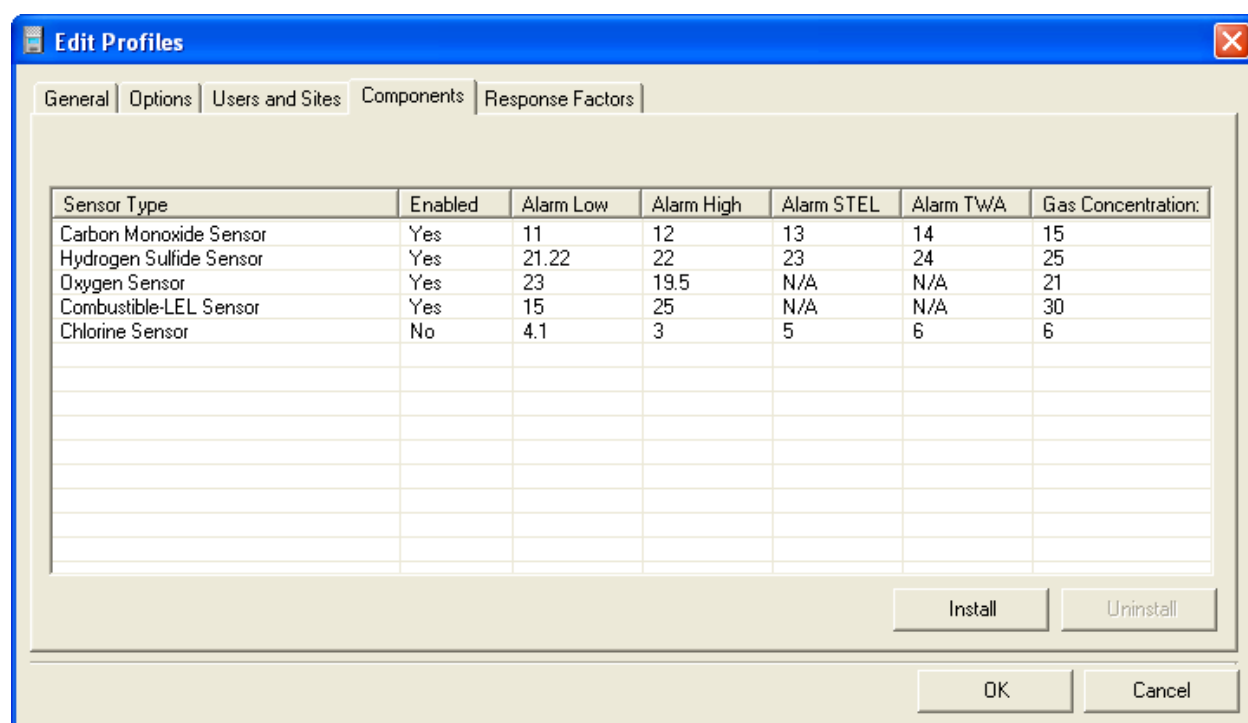
Figure 3-70. The Edit Profiles Screen – Components Tab

Table 3-7. Components of the Edit Profiles Screen – Components Tab

Component	Description
Component List View	The Component list view displays the component types assigned to the profile as well as the information about each one. The columns listed are Sensor Type, Enabled, Alarm Low, Alarm High, Alarm STEL, Alarm TWA, and Gas Concentration. When no component types are currently assigned to the profile, a single column is displayed with the heading "There is no component installed!".

Component	Description
	When one or more component types have been assigned, the data is displayed in the above mentioned columns.
	The list view is sorted by the Sensor Type column by default. Clicking any column heading resorts by that column. Clicking a column heading a second time reverses the sort order of that column.
	Double-clicking on any row within the list view opens the selected sensor type within the Edit Profile Component form.
Install Button	The Install Button is used to add new component types to the profile. It is only be enabled if the user has a role of ADMIN. Clicking the Install Button opens the Add Profile Component form.
Uninstall Button	The Uninstall Button is used to remove an existing sensor type from a profile. By default the Uninstall button is disabled.
	The Uninstall Button is enabled if the user has a role of ADMIN and one or more currently assigned sensor types have been selected.
	When the Uninstall button is clicked, the following message is displayed to confirm removing the components.
	Figure 3-71. Confirm Component Removal Screen
	If the user chooses Yes, then the selected components are removed from the profile. If the user chooses No, the action is canceled and the user is returned to the Components tab.

The Add Profile Component screen is used to assign a component to a profile. In addition, it assigns the Sensor type, alarms, and (if its an MX6 instrument type) whether the sensor should be enabled or not.

Figure 3-72. Add Profile Component Screen – Example 1 (CO Sensor)

Figure 3-73. Add Profile Component Screen – Example 2 (PID Sensor)
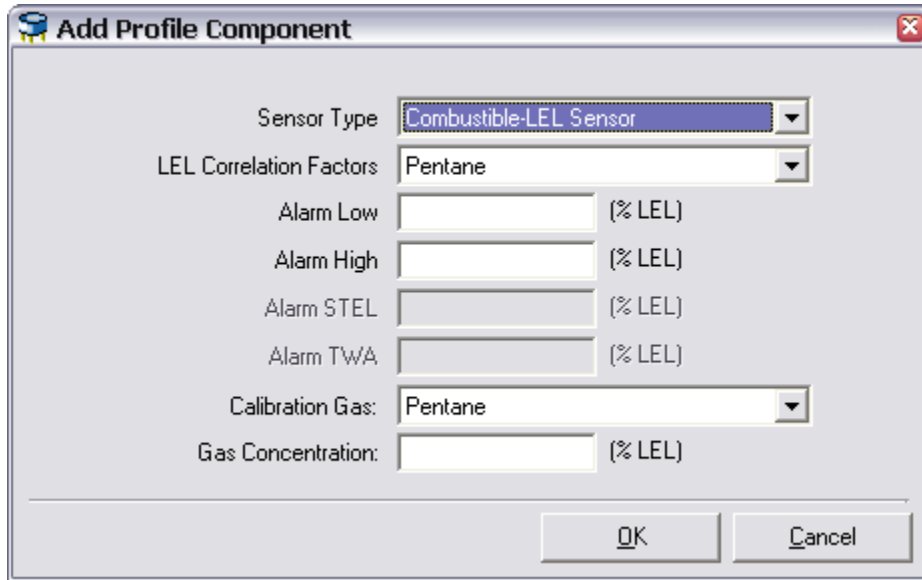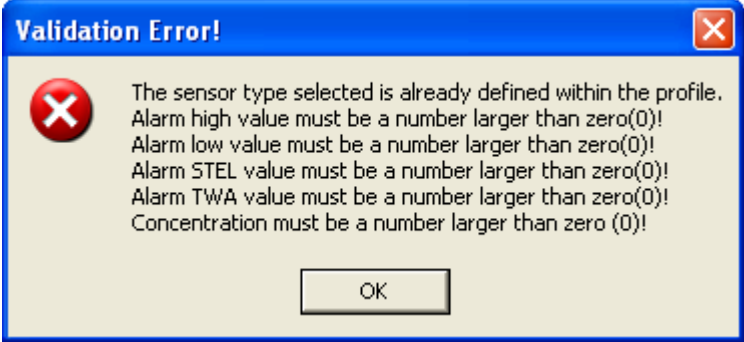
Figure 3-74. Add Profile Component Screen – Example 3 (Combustible LEL Sensor)

NOTE: Not all screen components are shown for every sensor type. For example, for non-PID an non-LEL sensors, no Response Factor or Correlation Factor field are shown.

Table 3-8. Components of the Add Profile Components Screen

Component	Description
Sensor type	This drop down list will be populate with the appropriate sensor types for the profile instrument type. Changing the sensor type will enable or disable the STEL and TWA text boxes depending on the selected sensor type.
Gas Response	Dropdown field is disabled for non-LEL and non-PID sensors. • For PID sensors, shows a list of all MX6 Response Factors, plus any Custom Response Factors that the user has created in the profile. • User must select an entry from the dropdown. • Default is "Isobutylene".
Gas Response	• For LEL sensors, shows a list of all MX6 Correlation Factors. • User must select an entry from the dropdown. • Default is "Pentane".
Enabled checkbox	The default value will be "Checked". This control will only be enabled for MX6 instrument types. For all prior instruments, this control will be "Checked" and Disabled.

Component	Description
PID Response Factor	This dropdown field will only appear for MX6 PID sensors. From this drop down, the user must select either a custom response factor or a 'built-in' response factor from the list to specify what type of gas the sensor should be configured to sense. Custom response factors will be sorted alphabetically within the list of built-in response factors.
LEL Correlation Factor	This dropdown field will only appear for MX6 LEL sensors. From this drop down, the user must select one of the provided correlation factors to specify what type of gas the sensor should be configured to sense.
Alarm Low text box	This field will hold the low alarm value to be applied to the senor type. The value in this text box cannot be empty nor zero or less. It also cannot have a decimal resolution of more than two.
Alarm High text box	This field will hold the high alarm value to be applied to the senor type. The value in this text box cannot be empty nor zero or less. It also cannot have a decimal resolution of more than two.
Alarm STEL text box	This field will hold the STEL alarm value to be applied to the senor type. The value in this text box cannot be empty nor zero or less. It also cannot have a decimal resolution of more than two. This text box will be disabled for O2 and Combustible sensor types.
Alarm TWA text box	This field will hold the TWA alarm value to be applied to the senor type. The value in this text box cannot be empty nor zero or less. It also cannot have a decimal resolution of more than two. This text box will be disabled for O2 and Combustible sensor types.
Cal Gas Concentration text box	This field will hold the Gas Concentration value to be applied to the senor type. The value in this text box cannot be empty nor zero or less.
Ok Button	Clicking the OK button will first validate the information entered by the user and if there are no errors, the sensor component will be added to or updated within the profile. If validation fails, a variant of the following message will be displayed. **Validation Error!** ⊗ ❌ The sensor type selected is already defined within the profile. Alarm high value must be a number larger than zero(0)! Alarm low value must be a number larger than zero(0)! Alarm STEL value must be a number larger than zero(0)! Alarm TWA value must be a number larger than zero(0)! Concentration must be a number larger than zero (0)! OK

Component	Description
Cancel Button	Clicking the cancel button will close the Add/Edit Profile Component form without applying any changes.

The Response Factors tab of the Edit Profiles screen is used to display the profile Response Factor information. It contains a list of the possible Response Factors, a list of custom response factors, and a list of favorite response factors for the instrument. Also, there is an Edit Custom button and Clear Favorites button.
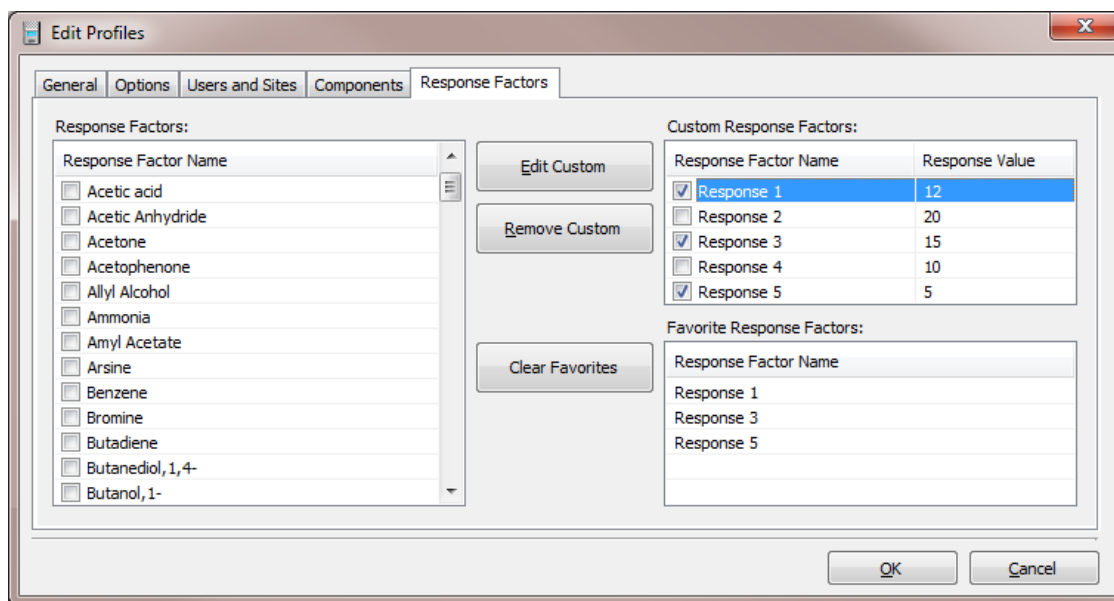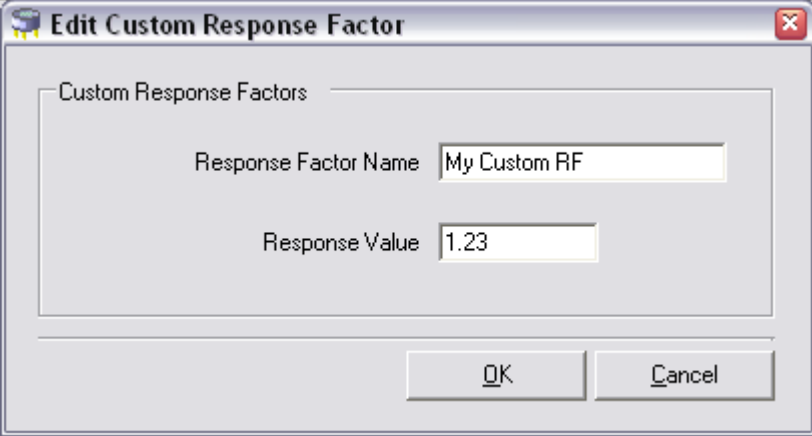
Figure 3-75. The Edit Profiles Screen – Response Factors Tab

Table 3-9. Components of the Response Factors Tab of the Edit Profiles Screen

Element	Description
Response Factors list	The Response Factors list displays all response factors available for the selected profile instrument type. Each item in the list has a checkbox. Clicking in the checkbox toggles the check on and off. Double-clicking on an item in the list also toggles the check on and off. "Checking" a response factor adds it to the Favorite Response Factor list. "Un-checking" a response factor removes it from the Favorite Response Factor list.
Custom Response Factors list	The Custom Response Factor list displays all of the custom response factors currently available within the selected profile as well as their response factor value. Each item in the list has a checkbox.

Element	Description
	Clicking in the checkbox toggles the check on and off. Double-clicking on an item in the list also toggles the check on and off.
	Checking" a custom response factor adds it to the Favorite Response Factor list. "Un-checking" a custom response factor removes it from the Favorite Response Factor list
Response Factor Name column	This is a customizable name for the custom response factor.
Response Value column	This is the response value for the custom response factor.
Edit Custom button	Used to edit the selected custom response factor.
Remove Custom button	Used to delete the selected custom response factor.
Favorite Response Factors list	Displays the selected response factors, standard or custom, which have been deemed a favorite. A maximum of 5 responses, in any combination of standard or custom, may be selected. The order in which the favorite responses are selected is the order in which they will be saved to the instrument.
Clear Favorites	Used for removing the checks from the selected responses and thereby removing them from the Favorite Responses list.
Edit Custom	Clicking the *Edit Custom* button opens the Edit Custom Response Factor form.
Edit Custom Response Factor form	The Edit Custom Response Factor form will be used to modify the name and or value of the custom response value. **Figure 3-76. The Edit Custom Response Factor Screen**
Response Factor Name	This is a customizable name for the custom response factor
Response Value	This is the response value for the custom response factor. The maximum length allowed entered is 16 characters. This can be a number from 0 to 99.99 inclusive.

3.15. Changing Your Password

You can change the DSSAC password that was assigned to you. You can change your password at any time. To change your password, follow the instructions listed below.

Step	Instruction
1.	Click on the File menu, and select Change Password.
2.	The Change Current Password dialog box appears. **Figure 3-77. Change Current Password Dialog Box**
3.	Enter your Current Password, your New Password, and your New Password Again for confirmation. Click the OK button. NOTE: Your password must be between 6 – 30 characters in length.
4.	Your password has been changed.

# # #

Chapter

4

Setting Up Users

4.1. Introduction

This chapter explains how to create, change, and remove users in the DSSAC. Only Systems Administrators can use this feature.

4.2. Understanding Roles

Before setting up users, you should have an understanding of the three roles that can be assigned to users. The roles determine the functions that a user is permitted to perform.

The roles in the DSSAC are:

- Systems Administrator - Can perform all functions in the DSSAC.

- Technician - Can perform functions related to configuration of instruments and IDSs, as well as change language settings and his/her own password. They cannot perform user management tasks, modify default alarm settings, modify default calibration gases, or configure iNet options.

- Guest - Can log in and view information in the DSSAC. This is a read-only role.
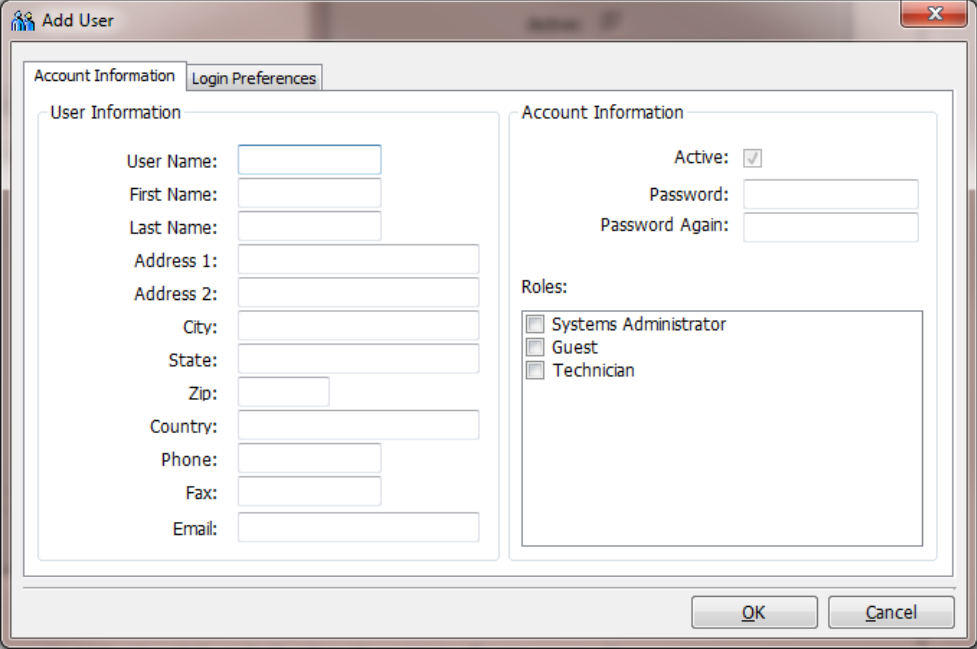
Typically, the Systems Administrator role should be given out to only select individuals. Most users can perform their functions adequately with the Technician role.

NOTE: You can assign all roles to a user, however the highest role applies when the user accesses the DSSAC.

4.3. Adding Users

In order to use the DSSAC, a user must have a user account set up for him or her. To add a user to the DSSAC, follow the instructions below.

Step	Instruction
1.	Open the DSSAC application.
2.	Click the Users option in the navigation pane of the DSSAC. A list of users appears in the contents pane.

3.	Click on the File menu, and select Add. Alternative: You can also right-click on Users, and select Add from the context menu.
4.	The Add User dialog box appears.
5.	Enter the user's information in the dialog box. Be sure to enter a unique user name for the person in the User Name field, and enter a password in both the Password and Password Again fields. **Figure 4-1. Add User Dialog Box** NOTE: The user is "Active" by default when it is first created.
6.	To select roles, click in the checkbox next to the role you wish to assign to the user. You must assign at least one role to the user.
7.	Click the OK button when complete. The user appears in the Users contents pane.

4.4. Changing User Properties

Once a user is created, you may need to update his/her personal information. For example, you may need to reset a password if the user forgets his/her current password or you may want to limit the information that the user can see to information only regarding his or her location..

To change user properties, follow the instructions listed below.

Step	Instruction
1.	Click the Users option in the navigation pane of the DSSAC. A list of users appears in the contents pane.

2.	Double-click on the user whose information you would like to change.
	Alternative: You can also right-click on the user and select Properties.
	Alternative: You can also select the user, and then click on the File menu, and select Properties.
3.	The Edit User dialog box appears.
	Figure 4-2. Edit User Dialog Box
4.	Change the data that needs to be updated.
	NOTE: You cannot change the User Name.
	NOTE: If you change the password, remember to enter it twice; once in the Password field and a second time in the Password Again field.
	NOTE: You cannot change the roles assigned to the account with which you are currently logged into the DSSAC. Also, the Active check box is grayed out and may not be edited for the current user.
5.	If you wish to inactivate the account, de-select the checkmark next to the Active option. This prevents the user from logging into the DSSAC. To re-activate an account, click the Active option so that a checkmark appears.
6.	Click the OK button to save your changes and return to the user list. If you click the Cancel button, your changes are not saved.

7.	If you wish to limit the locations from which the user can see information, click on the Login Preferences tab. The Login Preferences dialog box appears. All available locations or registered instruments and docking stations will be shown according to the Location column of the instrument or docking station listing.
8.	Check the boxes under Available Locations of the locations that user should be able to view information for. Checking the Show only selected box will limit the list for that user to those locations selected. If the selection has been previously limited, checking the Show all locations box will place all locations back in the user list.
9.	Click the OK button to save your changes and return to the user list. If you click the Cancel button, your changes are not saved.

4.5.   Removing Users

You may wish to remove a user account completely from the system. Only do this when you are sure that the user account is no longer going to be used. To remove a user account, follow the instructions below.

Step	Instruction
1.	Click the Users option in the navigation pane of the DSSAC. A list of users appears in the contents pane.
2.	Click on the user that you wish to remove. You can select multiple users by pressing the CTRL key on your keyboard while clicking on each user.
3.	Click on the File menu, and select Remove. *Alternative:* You can also right-click on the user and select Remove from the context menu.
4.	A confirmation prompt appears. Click Yes to confirm that you wish to remove the user(s). Otherwise, click No to cancel the action.
5.	The selected users are deleted from the system.

Note: You cannot delete the account with which you are currently logged in to the DSSAC. Also, you cannot delete the default DSS User account.

# # #

Chapter

5

Configuring Instruments

5.1.   Introduction

The DSX docking station was designed for use with several Industrial Scientific instruments. When these instruments are docked in the appropriate IDS, the docking station system automatically detects them. While docked, the instruments can take full advantage of automatic calibrations and bump tests, as well as datalog data management that docking station provides.

5.2.   Instrument Compatibility

The IDS only accepts the type of instrument it was designed for:

- GasBadge® Pro
- MX6 iBrid™ Multigas Monitor
- Tango™ TX1
- Ventis ™ Pro4
- Ventis ™ Pro5
- Ventis™ LS Multigas Monitor
- Ventis™ MX4 Multigas Monitor

Be sure that you are using the correct IDS for the instrument you are setting up.

Certain legacy instruments are not compatible with the DSX Docking Stations, but their information *can* be entered manually for record keeping.   The legacy instruments whose information can be entered into the system are listed in

Table 5-1. Legacy Instruments

Model Number	Legacy Instrument
ATX612	Multi-Gas Aspirated Monitor
ATX620	Multi-Gas Aspirated Monitor
CD210	Digital Methanometer
CD211	Methane Detector
CDU440	Carbon Monoxide Monitor

Model Number	Legacy Instrument
CL266	Chlorine Monitor
CMX270	Combination Oxygen/Methane/Carbon Monoxide Gas Monitor
CMX271	Combination Oxygen/LEL/Carbon Monoxide Gas Monitor
CO262	Carbon Monoxide Monitor
HMX271	Combination Oxygen/LEL/Hydrogen Sulfide Gas Monitor
HS110	Hydrogen Sulfide Monitor
HS560	Hydrogen Sulfide Monitor
LD322	Combustible Gas Monitor
LTX310	Multigas Monitor
LTX311	Multigas Monitor
LTX312	Multigas Monitor
MDU440	Dual-Range Methane Monitor
MG140	Four Gas Monitor
MX250	Combination Oxygen/Methane Gas Monitor
MX251	Combination Oxygen/LEL Gas Monitor
STX70	Single Gas Monitor/SewerGuard
T40	Rattler Single Gas Monitor
T80	Single Gas Monitor
TMX410	Multigas Monitor
TMX412	Multigas Monitor
TX418	Multigas Monitor

5.3. Setting Up an Instrument

The IDS contains a cradle that is designed to hold one of the compatible instruments (GasBadge Pro, Tango TX1, Ventis Pro4, Ventis Pro5, Ventis MX4 , Ventis LS, or the MX6 iBRID). The first time that an instrument is docked, the Docking Station Server detects it, and adds its information into the system.

The IDS only accepts the type of instrument it was designed for. Be sure that you are using the correct IDS for the instrument you are setting up.

To set up an instrument, follow the instructions listed below.

Step	Instruction
1.	Place the instrument securely into the IDS cradle.
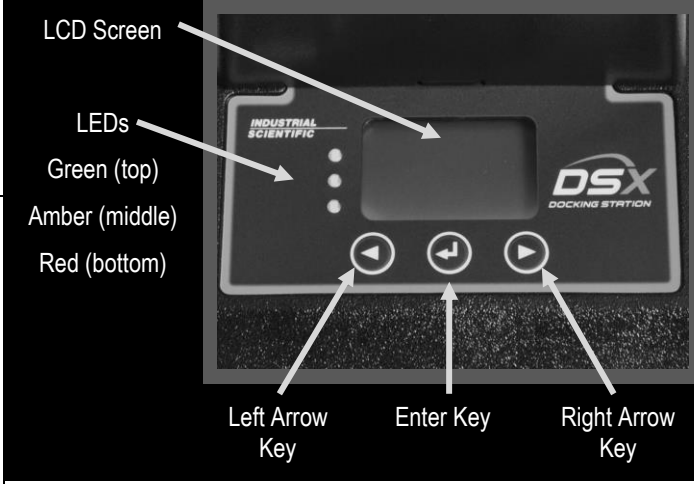
2.	Be sure that the IDS is powered on, and is connected to the network. (See Chapter 6 for information about setting up and configuring the IDS.)	
3.	The Docking Station Server detects the instrument and registers it in the system. The LCD screen on the IDS displays "Discovering." The yellow LED is illuminated.	
		Figure 5-1. Front Panel of a DSX-L

NOTE: When docking an instrument that has already been registered, the LCD on the IDS also displays "Discovering" while it determines which instrument has just been docked.

Step	Instruction
4.	When the LCD displays and the green LED is illuminated, the instrument has been registered and is now ready to be used in the docking station system.

If any events are scheduled for the instrument, they automatically occur after the instrument is docked. In order to successfully complete the calibrations and bump tests, ensure that the proper gas cylinders are connected and configured for use on the IDS. See section 6.6: Configuring Gas Cylinders for information about setting up an IDS to use gas cylinders.

NOTE: For information of adding legacy instruments, removing instruments, and using the find instrument feature, refer to section 5.17.

5.4.   Instrument Properties

Once the Docking Station Server has detected the instrument, and added the instrument's information into the system, the instrument's properties can be viewed in the DSSAC. The DSSAC can also be used to:

- update instrument options and alarms
- review calibration and bump test results
- view datalog data.

To view an instrument's properties, follow the instructions listed below.

Step	Instruction
1.	Open the DSSAC application.
2.	Click on the Instruments option in the navigation pane. The contents pane displays a list of instruments. NOTE: Any instrument that is currently docked appears in blue.
3.	Double-click on the instrument whose properties you wish to view. Alternative: You can also right-click on the instrument and select Properties from the context menu. Alternative: You can also select the instrument, and then click on the File menu, and select Properties.

Figure 5-2. Instruments Option in the Navigation Pane

Step	Instruction
4.	The Edit Instrument dialog box appears. Refer to Figure 5-3. NOTE: If you are viewing a compatible instrument, many of the fields cannot be changed since they are automatically configured by the system. If you are viewing a legacy instrument, additional fields can be modified.
5.	The Edit Instrument dialog box contains the tabs shown in Figure 5-. Each of these tabs is explained in the sections that follow.
6.	If you made any changes that you would like to save, click the OK button. Otherwise, click the Cancel button.
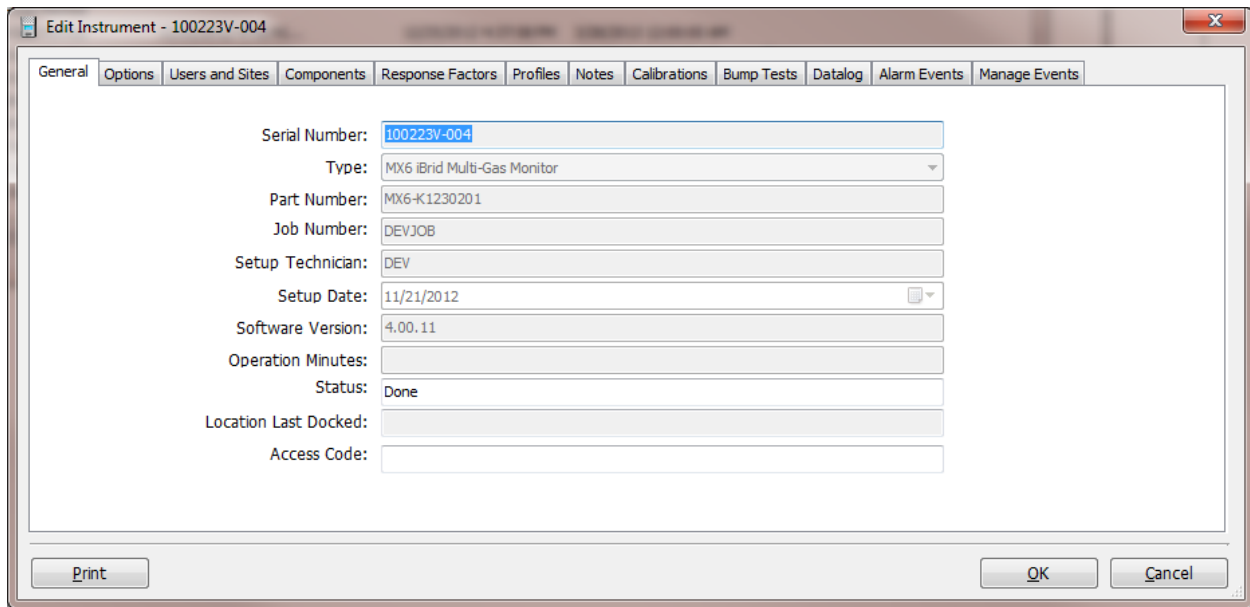
Figure 5-3. Edit Instrument Dialog Box

NOTE: Certain reserved characters may not be used in fields. Unacceptable characters include the following.

> \> greater than
> \< less than
> & ampersand
> % percent

If the user types any of these keys, nothing will appear. The application ignores these key-stokes if the user attempts to use them when creating a new user or new site (Users and Sites tab of the Edit Instrument screen), as well as on the Status field (General tab of the Edit Instrument screen) and Location field (General tab of the Edit Docking Station screen).

NOTE: The Datalog tab is only available for docking station compatible instruments.

5.5. Edit Instrument – The General Tab

The contents of the General Tab are explained in the table below.

Figure 5-4. Edit Instruments – General Tab

Table 5-2. Fields in the Event Journal Details Screen

Field	Description
Serial Number	Displays the serial number of the instrument.
Type	Displays the instrument type. For example: • GasBadge Pro Single-Gas Monitor • Tango TX1 Single-Gas Monitor • MX6 iBrid Multi-Gas Monitor • Ventis Pro4 • Ventis Pro5 • Ventis MX4 • Ventis LS • any one of the legacy instrument types. This is displayed as text via a drop-down box.
Part Number	Displays the Industrial Scientific part number for the instrument.
Job Number	The user-supplied job number associated with this instrument (optional).
Setup Technician	The name of the technician who configured this instrument (optional).
Setup Date	Displays the manufacture date of the instrument.
Software Version	Displays the current version of the software installed in the instrument.

Field	Description
Operation Minutes	Displays the number of minutes that the instrument has been in operation. This field does not apply to legacy instruments. For docking station compatible instruments, Operation Minutes is updated by the system.
Status	Displays a text field that can be used to identify the status of the instrument. The status displays in the instrument's contents pane in the DSSAC.
Location Last Docked	A read-only text box that displays the "Location" value of the docking station upon which it was last docked.
Access Code	The password required to use certain features of the instrument. Only users assigned to the Systems Administrator role can see the contents of the Access Code field.

5.6.   Edit Instrument – The Options Tab

Instrument options can be set in two ways:

- on the instrument itself
- by using the DSSAC application.

The options in the DSSAC will always take precedence over the settings on the instrument. If settings are changed on the instrument, they are overridden by the DSX-L docking station system when the instrument is next docked. If settings are changed using the DSSAC, they are transferred to the instrument when the instrument is next docked.

NOTE: Instrument options are only available for Docking station compatible instruments.

5.6.1.   Setting Instrument Options from the Instrument Itself

For information about the specific options for an instrument and their purposes, please refer to your Instruction Manual for the instrument. The Instruction Manual also describes how to change the settings on the instrument. This user guide only covers how to change instrument settings using the DSSAC.

5.6.2.   Setting Instrument Options from the DSSAC Application

To change instrument settings using the DSSAC, follow the instructions listed below.

Step	Instruction
1.	Open the DSSAC application.
2.	Click on the Instruments option in the navigation pane. The contents pane displays a list of instruments.
3.	Double-click on the instrument whose options you wish to change. Alternative: You can also right-click on the instrument and select Properties from the context menu. Alternative: You can also select the instrument, and click the File menu and select

Step	Instruction
	Properties.
4.	Click on the Options tab. Instrument options are displayed in separate fields on the left and a tree-like structure on the right. You can find any setting under the category All or in a specific category, such as Basic or Survey. A checkmark is displayed next to any setting that is enabled.
5.	To change a setting, click in the checkbox next to a setting or edit the appropriate fields. For check boxes, clicking in the checkbox toggles whether or not it is enabled/disabled. You can also select all settings in a category by clicking in the checkbox next to the category name. For example, to select all Survey options, click in the box next to Survey. You can then de-select individual options in the category, if desired.
6.	Click OK to save your changes. Otherwise, click Cancel to close the Edit Instrument dialog box without saving your changes.

NOTE: The Options tab is only available for Docking station compatible instruments.
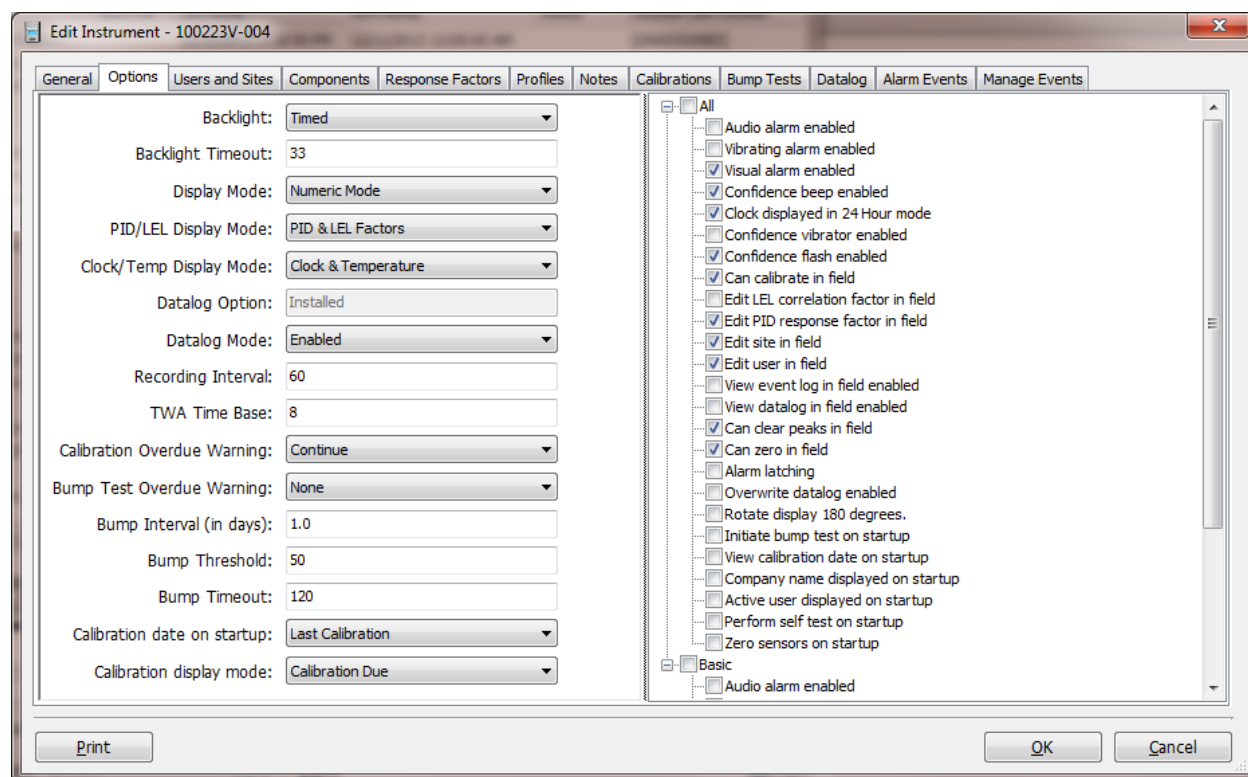
Figure 5-5. The Options Tab of the Edit Instrument Dialog Box

Key fields on this screen are shown in the table that follows.

NOTE: The settings update occurs after the instrument is docked. If you change settings while an instrument is docked, you must undock and then re-dock the instrument for the changes to take effect.

Table 5-3. Components of the Options Tab

Component	Description
Backlight	Displays "Timed". Dropdown is grayed out.
Backlight Timeout	Displays the Backlight timeout duration in seconds if Backlight mode is timed.
Display Mode	Displays the current Display Mode. Possible values are "Text", "Numeric" and "Graphical".
Clock/Temp Display Mode	Indicates whether the instrument will display the "Clock", "Temperature" or both.
PID/LEL Display Mode	Indicates whether the instrument will display the "PID Response Factor", the "LEL Correlation Factor" or both.
Datalog Option	Displays "Installed". Dropdown is grayed out.
Datalog Mode	Display whether the datalog mode is "Enabled", "Snapshot" or "Event Logging".
Recording Interval	Displays the current recording interval for the datalogger. This must be between 1 and 300 seconds in increments of 1 second. Default value: 60 seconds.
TWA Time Base	Displays the current TWA Time Base for the instrument. This field must be an integer between 0 and 40. Default value: 8.
Calibration Overdue	Displays the current Calibration Overdue Warning indication.
Bump Test Overdue	Displays the current Bump test Overdue Warning indication.
Bump Interval	Displays the current Bump interval in intervals of 0.5 days.
Bump Threshold	The percentage concentration of gas (from 50% to 99%) that must be seen in order for a bump test to pass. The default value for this field is 50%.
Bump Timeout	The maximum amount of time (from 30 to 300 seconds, given in 5-second increments) after a bump test is initiated that a docking station will wait to complete/pass the test, before ultimately aborting and failing the bump test. The default value for this field is 120 seconds.
Calibration Date on Startup	Displays the last/next Calibration date of display on instrument start up.
Calibration Display Mode	Displays the Calibration date display mode on instrument.
Magnetic field Duration	Displays the current magnetic field duration in seconds for TX1

	instruments only.
Confidence Indicator type	Displays the current confidence indication type for MX4 instruments only.
Dock overdue warning	Displays the dock overdue warning indication for Ventis Pro instruments only.
Dock Interval	Displays the number of Days between Docks in increments of 1 day for Ventis Pro instruments only. This field must be a whole number between 1 to 31.
Date format	Displays the Date Format display on instrument for Ventis Pro instruments only.
Toxic display units	Displays the toxic measurement unit type on the instrument for Ventis Pro instruments only.
Temperature units	Displays the Celsius-Fahrenheit mode of temperature display on the instrument for Ventis Pro instruments only.
Company Message	Displays the company Message text to be display on startup for Ventis Pro instruments only.
Man-Down Warning Interval	Displays the length of time between the man-down warning and man-down alarm for Ventis Pro instruments only. This field must be a whole number between 30 to 300.
Calibration Interval	Displays current calibration interval in increments of 1 day for Ventis Pro instruments only. This field must be a whole number between 1 to 365.

5.7.   Edit Instrument – The Users and Sites Tab

Some instruments have the ability to record user and site information with the datalog feature. This information can then be downloaded with the datalog data.

User and Site information can be maintained using the DSSAC, and then transferred to the instrument the next time it is docked.

To manage User and Site data, follow the instructions listed below.

Step	Instruction
1.	Open the DSSAC application.
2.	Click on the Instruments option in the navigation pane. The contents pane displays a list of instruments.

Step	Instruction
3.	Double-click on the instrument whose Users and Sites information you wish to view or change. Alternative: You can also right-click on the instrument and select Properties from the context menu. Alternative: You can also select the instrument, and click the File menu and select Properties.
4.	Click on the Users and Sites tab.
5.	User information is displayed in the top half of the dialog box, while Site information is displayed in the lower half of the dialog box. The instructions that follow can be applied to both the User section and the Site section.
6.	The Users / Sites section contains two lists. The list on the left (All Instrument Users / All Instrument Sites) displays the user or site names available in the system. The list on the right (Current Instrument Users / Current Instrument Sites) contains the users / sites stored in the current instrument.

NOTE: Only instruments that have a Users and Sites feature display this tab in DSSAC.
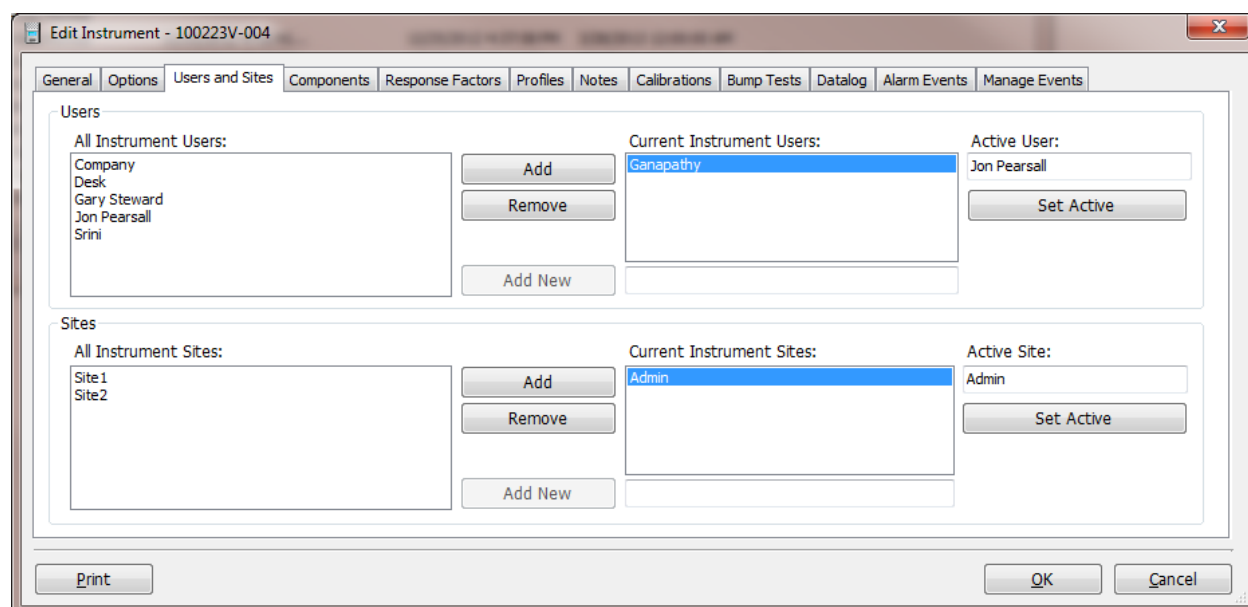
Figure 5-6. The Users and Sites Tab of the Edit Instrument Dialog Box

Step	Instruction
7.	To add a new User or Site, type the name in the text box under the Current Instrument Users or Current Instrument Sites field, and then click the Add New button. The name is added to the Current Instrument Users / Current Instrument Sites list. Once saved, the name can also be used on the Users and Sites tab for other instruments.

Step	Instruction
8.	To add a user or site from the existing names in the system, select the name in the All Instrument Users / All Instrument Sites list and click the Add button.
9.	To remove a user or site from the instrument, select the name you wish to remove from the Current Instrument Users / Current Instrument Sites list, and click the Remove button. The name is removed from the list.
10.	You can select multiple user or site names by pressing the CTRL key on your keyboard while clicking on each name that you would like to include.
11.	Click the OK button on the Edit Instrument dialog box to save your changes.

5.8.   Edit Instrument – The Components Tab

5.8.1. Overview

Instrument components are accessory parts of an instrument, such as batteries and sensors. Component information is maintained using the DSSAC. For compatible instruments, information about these components is automatically detected and stored in the DSX docking station system. For legacy instruments, component information can be manually added to the system using the **Edit Instrument** dialog box.

To view component information, follow the instructions listed below.

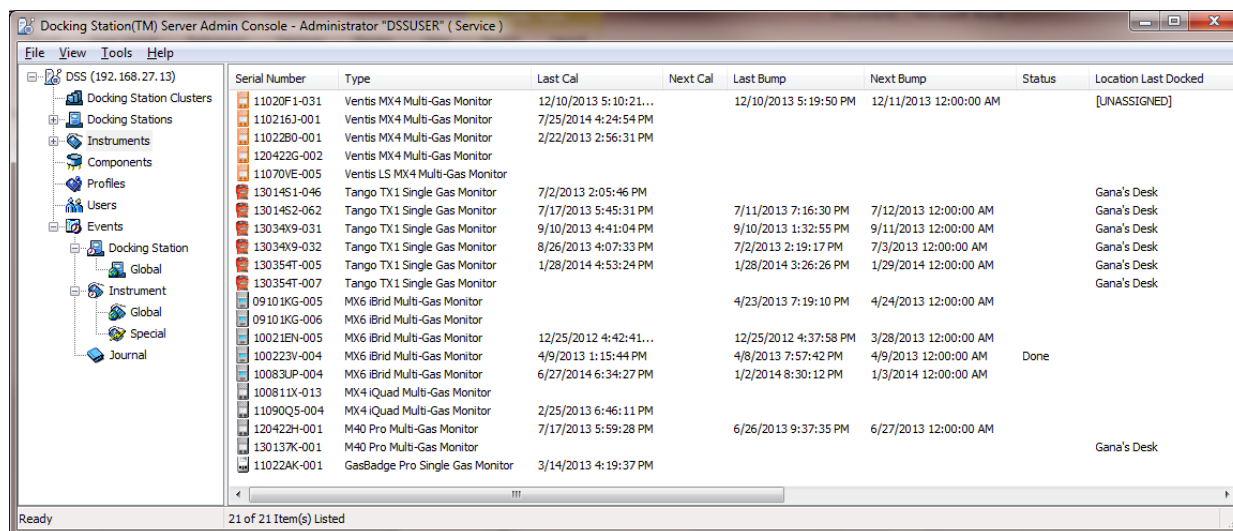| Step	Instruction
1.	Open the DSSAC application.
2.	Click on the Instruments option in the navigation pane. The contents pane displays a list of instruments.
3.	Double-click on the instrument whose components you wish to view or change. Alternative: You can also right-click on the instrument and select Properties from the context menu. Alternative: You can also select the instrument, and click the File menu and select Properties.

Step	Instruction
4.	Click on the Components tab. A screen containing a list of components appears. Installed components are shown in blue. The Uninstall Date column contains the date the component was uninstalled. If the component is currently installed, then this field is blank. The Components tab contains the following columns.

Field	Description
Type	Displays the type of device (i.e., battery pack, sensor, etc.).
Position	For MX6 instruments, this is the position of the sensor. Battery packs are shown as "N/A".
Enabled	This column indicates the status of the listed components. Only currently installed components will have a value in this column. Batteries will always show "N/A". Sensors will either show "Yes" for enabled or "No" for not. For all instrument except the MX6, this column will display "Yes" for all installed sensors. For the MX6, the column will reflect the actual state of the sensor.
Serial Number	Displays the serial number of the component.
Part Number	Displays the part number of the component.
Install Date	Shows the date and time when the component was installed.
Uninstall Date	Shows the date and time when the component was uninstalled.

Figure 5-7. The Components Tab of the Edit Instrument Dialog Box

Step	Instruction
5.	Optionally, select an option in the Filter By field. If you select "Batteries," then the list displays only batteries. If you select "Sensors," then the list displays only sensors. Selecting "All" displays the entire list of installed components.
6.	To view a component, double-click on its entry in the list.
7.	If you selected a battery, the Edit Battery dialog box appears. See the table below for an explanation of the fields on the Edit Battery tab. **Figure 5-8. The Edit Battery Dialog Box** NOTE: You cannot edit the properties of a battery once it is installed. If you need to change the properties, remove the battery, and then reinstall it.
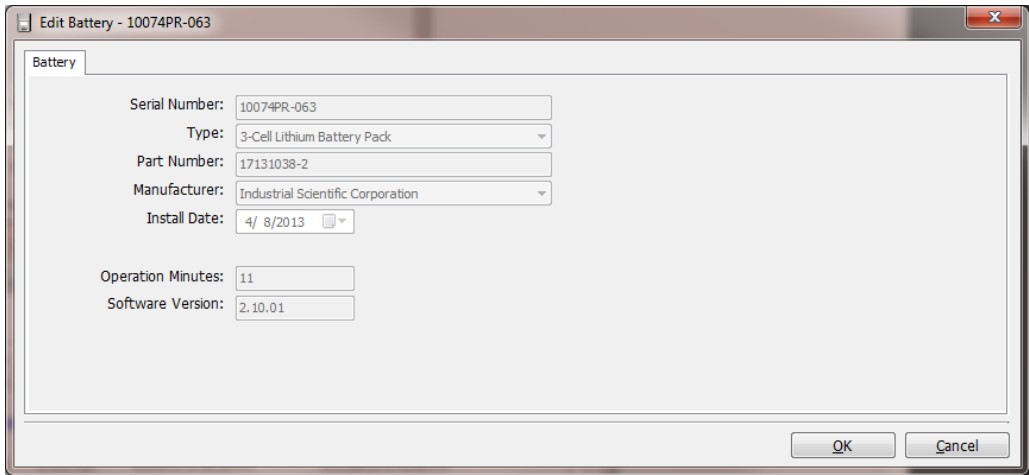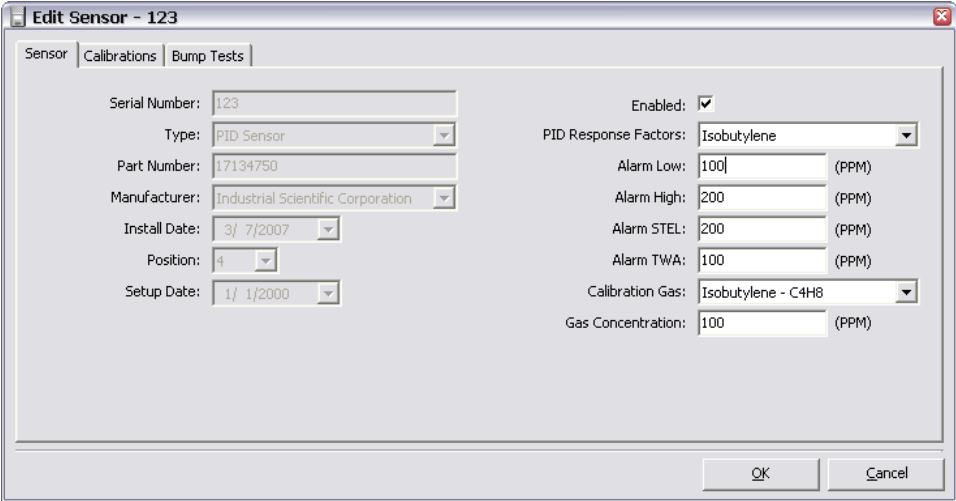
8.	If you selected a sensor, the Edit Sensor dialog box appears.
	Figure 5-9. The Edit Sensor Dialog Box

9.	The Edit Sensor dialog box contains three tabs.

Tab	Description
Sensor	Displays general sensor information.
Calibrations	Used to display results of calibration tests specific to the sensor.
Bump Tests	Used to display results of bump tests specific to the sensor.

10.	Click the OK button to close the Edit Battery or Edit Sensor dialog box.

Table 5-4. Fields in the Edit Battery Dialog Box

Field	Description
Serial Number	The serial number of the battery.
Type	The battery type.
Part Number	The part number for the battery.
Manufacturer	The manufacturer of the battery, e.g., Industrial Scientific Corporation.
Install Date	The date that the battery was first installed in the instrument. For docking station compatible instruments, this is the date that the DSS first detected the battery. For legacy instruments, it is the date that the battery was added using the DSSAC application.
Operation Minutes	The number of minutes that the battery has been in use.
Software Version	The software version of the battery (if available).

NOTE: The battery screens are grayed out (and therefore may not be edited) for dockable instruments.

Table 5-5. Fields in the Edit Sensor Dialog Box (Sensor Tab)

Field	Description
Serial Number	The serial number of the sensor.
Type	The sensor type, e.g., Chlorine Sensor, Carbon Monoxide Sensor.
Part Number	The part number for the sensor.
Manufacturer	The manufacturer of the sensor, e.g., Industrial Scientific Corporation.
Install Date	The date on which the sensor was first installed in the instrument. For Docking station compatible instruments, this is the date that the DSS first detected the sensor. For legacy instruments, it is the date that the sensor was added using the DSSAC application.
Position	The position of the sensor in the instrument.
Setup Date	The date on which the sensor was manufactured.
Enabled checkbox	This check box determines if the sensor type should be enabled or disabled within the instrument. This control will only be enabled for MX6 instrument types. For all other instruments, this control is "Checked" and Disabled. The default value is "Checked"
PID Response Factor	This dropdown field will only appear for MX6 PID sensors. From this drop down, the user must select either a custom response factor or a 'built-in' response factor from the list to specify what type of gas the sensor should be configured to sense. Custom response factors will be sorted alphabetically within the list of built-in response factors.
LEL Correlation Factor	This dropdown field will only appear for MX6 LEL sensors. From this drop down, the user must select one of the provided correlation factors to specify what type of gas the sensor should be configured to sense. NOTE: For non-PID an non-LEL sensors, no Response Factor or Correlation Factor field will be shown.
Calibration Gas	The type of calibration gas to use to calibrate the sensor.
Gas Concentration	The concentration of gas to use to calibrate the sensor.
Alarm High	The gas reading that triggers a high alarm.
Alarm Low	The gas reading that triggers a low alarm.
Alarm STEL	The threshold that a Short Term Exposure Limit (STEL) reading must cross to trigger an alarm.
Alarm TWA	The threshold that a Time Weighted Average (TWA) reading must cross to trigger an alarm.
Gas Alert	The gas reading that triggers a warning, which indicates the level of gas present may be approaching alarm levels. For O2 sensors, setting is supposed to be between low and high alarm.

5.8.2. Adding Components

If an instrument is not a docking station compatible instrument, you can manually add or remove component information.   To add components, follow the instructions listed below.

Step	Instruction
1.	Open the DSSAC application.
2.	Click on the Instruments option in the navigation pane. The contents pane displays a list of instruments.
3.	Double-click on the instrument for which you would like to add components. Alternative: You can also right-click on the instrument and select Properties from the context menu. Alternative: You can also select the instrument, and click the File menu and select Properties.
4.	Click on the Components tab. A screen containing a list of installed components appears.
5.	Click the Install button.
6.	The Add Battery or Add Sensor dialog box appears. Select the type of component you wish to add and complete the fields. See the tables above for the fields used to describe batteries and sensors.
7.	Click OK to add the component to the instrument.
8.	Click the OK button on the Edit Instrument dialog box to save your changes.

NOTE: The title of the dialog box will change depending on the type of component selected.
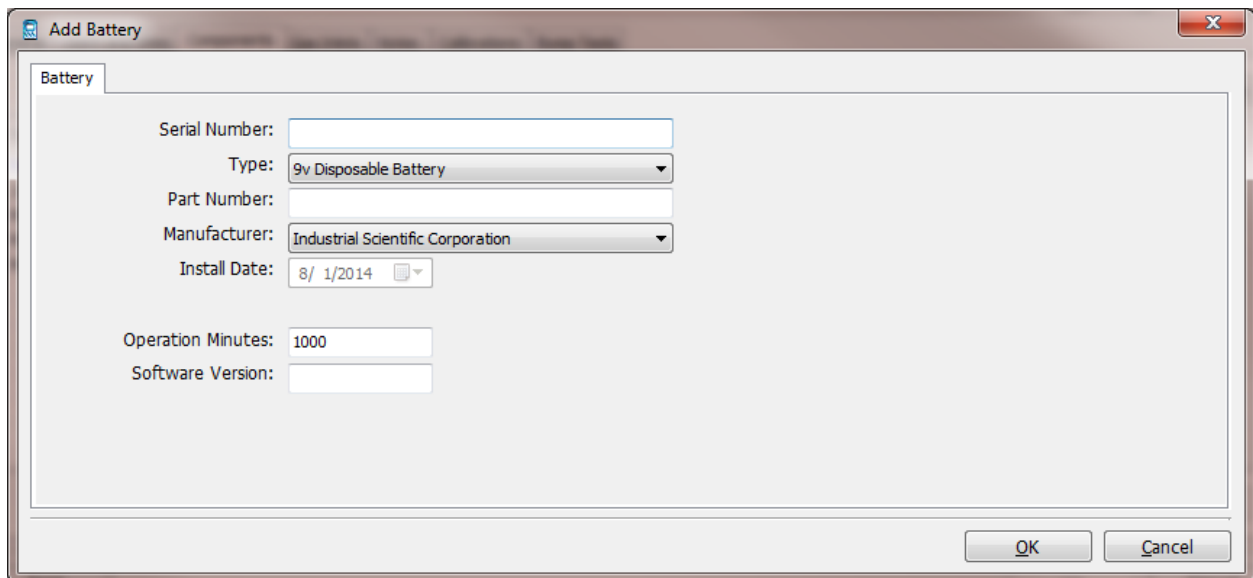
Figure 5-10. The Add Battery Dialog Box

5.8.3. Removing Components

If an instrument is not a Docking station compatible instrument, you can manually add or remove component information. To remove components, follow the instructions listed below.

Step	Instruction
1.	Open the DSSAC application.
2.	Click on the Instruments option in the navigation pane. The contents pane displays a list of instruments.
3.	Double-click on the instrument for which you would like to remove components. Alternative: You can also right-click on the instrument and select Properties from the context menu. Alternative: You can also select the instrument, and click the File menu and select Properties.
4.	Click on the Components tab. A screen containing a list of installed components appears.
5.	Select the component you would like to remove. You can select multiple components by pressing the CTRL key on your keyboard while clicking on each component.
6.	Click the Uninstall button.
7.	A confirmation prompt appears. Click Yes to remove the component.
8.	Click the OK button on the Edit Instrument dialog box to save your changes.

5.9.   Edit Instrument – The Response Factors Tab

The Response Factor Tab of the Edit Instrument screen displays the instrument Response Factor information. It contains a list of the possible Response factors, a list of custom response factors and a list of favorite response factors for the instrument. Also, there is an Edit Custom button and Clear Favorites button.
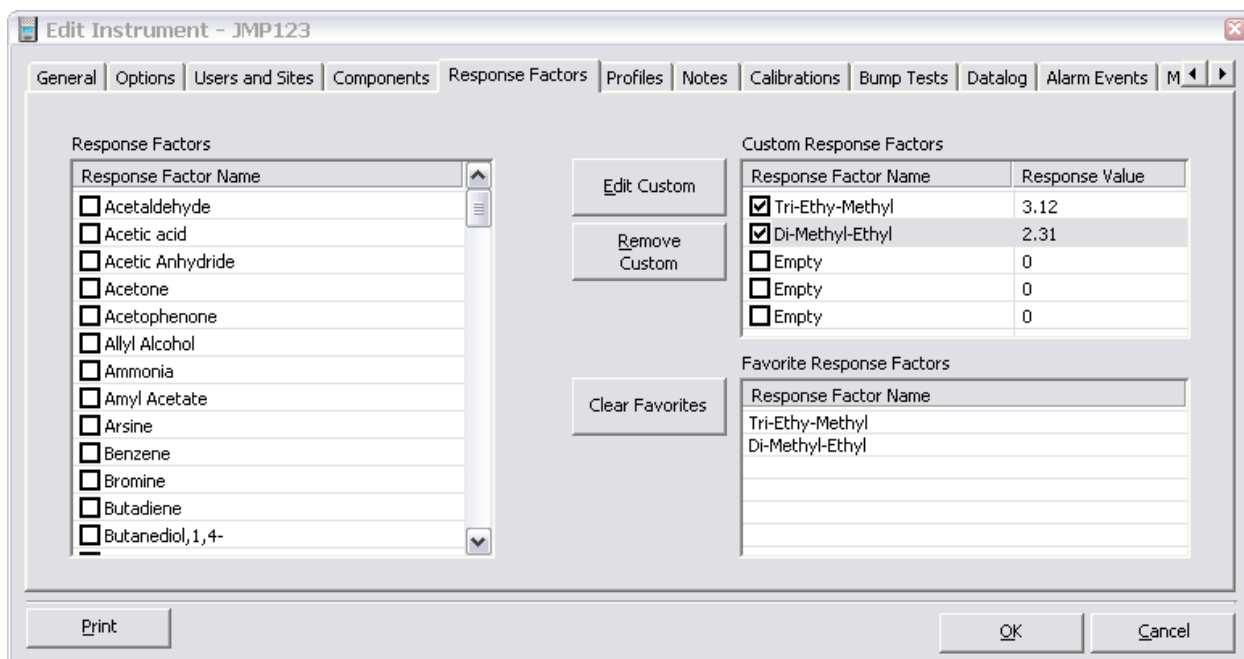
Figure 5-11. The Response Factors Tab of the Edit Instrument Screen

Table 5-6. Fields in the Edit Instrument Screen (Response Factors Tab)

Element	Description
Response Factors list	The Response Factor list displays all response factors available for the selected instrument type. Each item in the list has a checkbox.
	Clicking in the checkbox toggles the check on and off. Double-clicking on an item in the list toggles the check on and off. "Checking" a response factor will add it to the Favorite Response Factor list. "Un-checking" a response factor removes it to the Favorite Response Factor list.
Custom Response Factors list	The Custom Response Factor list displays all of the custom response factors currently available within the selected instrument as well as its response factor value. Each item in the list has a checkbox. Clicking in the checkbox toggles the check on and off. Double-clicking on an item in the list toggles the check on and off. "Checking" a custom response factor adds it to the Favorite Response Factor list. "Un-checking" a custom response factor removes it from the Favorite Response Factor list.
	Response Factor Name - This is a customizable name for the custom response factor. The maximum length allowed entered is 16 characters.
	Response Value - This is the response value for the custom response factor. Each item in the list has a checkbox. Clicking in the checkbox toggles the check on and off. This can be a number

Element	Description
	from 0 to 99.99 inclusive.
	Double-clicking on an item in the list toggles the check on and off. "Checking" a custom response factor adds it to the Favorite Response Factor list. "Un-checking" a custom response factor removes it to the Favorite Response Factor list.
Edit Custom Button	The Edit Custom button is used to edit the selected custom response factor. Clicking the edit Custom button opens the Edit Custom Response Factor form. The Edit Custom Response Factor form is used to modify the name and or value of the custom response value.
Remove Custom Button	The Remove Custom button is used to delete the selected custom response factor. When a Custom response factor is removed, then any installed PID sensor currently configured to use that custom response factor is automatically reverted back to Isobutylene.
Favorite Response Factors list	The Favorite Response Factor list displays the selected response factors, standard or custom, which have been deemed a favorite. A maximum of 5 responses, in any combination of standard or custom, may be selected. The order in which the favorite responses are selected is the order in which they are saved to the instrument
Clear Favorites Button	The Clear Favorites button is used for removing the checks from the selected responses, thus removing them from the Favorite Responses list.

5.10. Edit Instrument – The Profiles Tab

The Profiles tab within the Edit Instrument screen is present only for MX6 instruments. The Profiles tab allows an Admin User to assign up to five profiles to the current MX6 instrument.
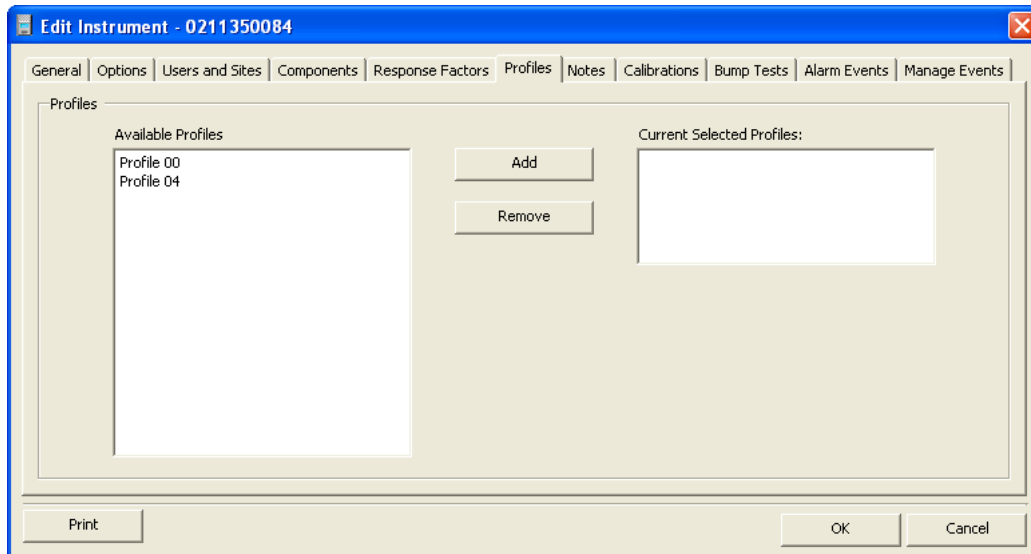
Figure 5-12. The Profiles Tab of the Edit Instrument Screen

Table 5-7. Fields in the Edit Instrument Screen (Profiles Tab)

Component	Description
Available Profiles list box	The Available Profiles list box displays all profiles currently available for the current instrument based on the instrument type. Double-clicking a Profile in the Available Profiles list box removes that Profile from the list and adds it to the Current Instrument Profiles list box.
Current Instrument Profiles list box	The Current Instrument Profiles list box displays the possible five profiles assigned to the current instrument. The Current Instrument Profiles list box shows 0 to 5 profiles, depending on how many are currently assigned the instrument. Double-clicking a Profile in the Current Instrument Profiles list box removes that Profile from the list and adds it to the Available Profiles list box. Double-clicking a Profile in the Available Profiles list box while there are already five Profiles listed in the Current Instrument Profiles list box, displays the following message and the profile is not moved.

Component	Description
	Figure 5-13. Validation Error Screen
Add button	The Add button assigns the selected profile to the instrument. If there is no profile selected in the Available Profiles list box when the user presses the Add button, nothing happens.
	Pressing the Add button while a Profile in the Available Profiles list box is selected removes that Profile from the list and adds it to the Current Instrument Profiles list box
	If the user presses the Add button while a Profile is selected in the Available Profiles list box and there are already five Profiles listed in the Current Instrument Profiles list box, the previous validation error message is displayed and the profile is not moved.
Remove button	The Remove button removes the selected profile from the assigned list. If there is no profile selected in the Current Instrument Profiles list box when the user presses the Remove button, nothing happens.
	Pressing the Remove button while a Profile in the Current Instrument Profiles list box is selected removes that Profile from the list and adds it back to the Available Profiles list box.

5.11. Edit Instrument – The Notes Tab

5.11.1. Overview

Instrument Notes are comments about an instrument that you can store in the system. You can also remove notes that no longer apply to the instrument. To maintain instrument notes, follow the instructions listed below.

Step	Instruction
1.	Open the DSSAC application.
2.	Click on the Instruments option in the navigation pane. The contents pane displays a list of instruments.
3.	Double-click on the instrument whose notes you wish to view or change.
	Alternative: You can also right-click on the instrument and select Properties from the context menu.
	Alternative: You can also select the instrument, and click the File menu and select Properties.
4.	Click on the Notes tab. A screen containing a list of notes appears.

Step	Instruction
5.	To view a note, double-click its entry in the list.
6.	To add a note, click the Add button. The Add Note dialog box appears.
7.	Enter your note and then click the OK button. The Note has been saved. NOTE: You may not change a note once it has been saved.
8.	To remove a note, select the note and then click the Remove button. A confirmation prompt appears. Click Yes to remove the note.
9.	Click the OK button or the Cancel button to close the Edit Instrument dialog box.
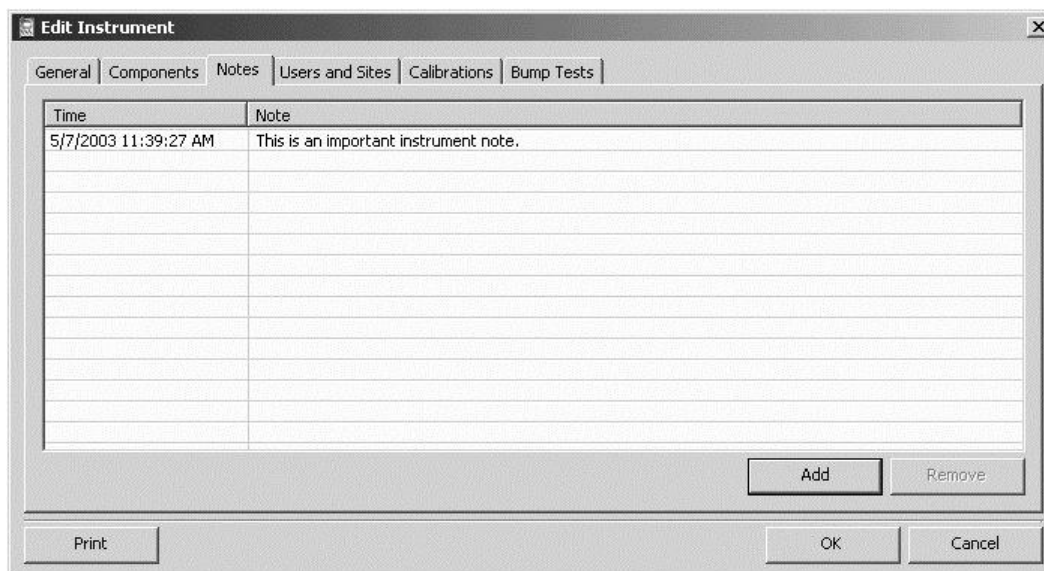
Figure 5-14. The Notes Tab of the Edit Instrument Dialog Box
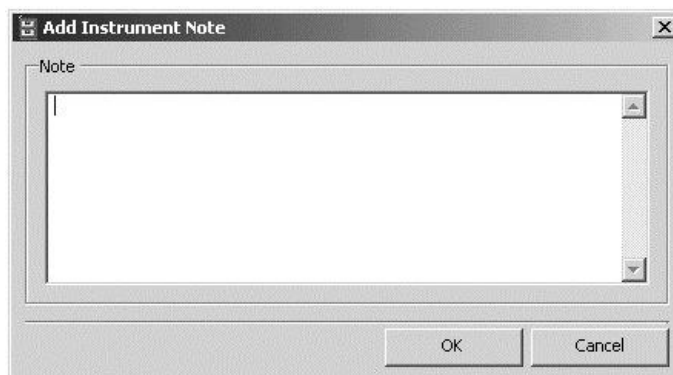
Figure 5-15. The Add Note Dialog Box

5.11.2. Sample Application Using Notes Field – iNet Exchange Instruments

In order to indicate that an instrument is a replacement for another instrument, the following must apply.

- The replacement instrument must be new to the DS2 Database in question. If the replacement instrument is already in the database (<u>even if "removed"</u>), it will not be recognized by the DSX.

- The serial number of the instrument being replaced should be entered into both the Active User and Active Site field of the replacement instrument before it is docked for the first time on the target system.

- For those dockable instruments in which DSX does not support Active User and Active Site, a list containing a single user and a list containing a single site should be entered, with both the user and the site being the serial number of the instrument to be replaced.

   Note: This would normally be done by ISC personnel before the instrument is sent to the customer. The customer system would be considered the target system.

   The replacement serial number can be entered into the user & site field either by DataLink or by manually using the keypad, if the instrument supports keypad entry.

   The replacement serial number should not be added to the user and site fields using DSSAC. Although this may work, it is not a recommended practice because the DSX may at that time trigger the replacement logic.

   For instruments with a list of users and sites, the list must contain only this 1 entry, which is the serial number of the instrument being replaced.

   The serial number must be exactly the same as the number programmed into the replacement instrument, including any dashes or lack of dashes.

   The serial number must be exactly the same in both the user and site field.

If all the above conditions are met, the DSX will trigger a replacement algorithm when the replacement instrument is docked for the first time. The new instrument will be given all the settings of the old instrument. The old instrument will be "removed" automatically. The old instrument will then act like any other "removed" instrument. The old instrument will be given a "Note" visible through DSSAC indicating when it was replaced and which instrument replaced it.
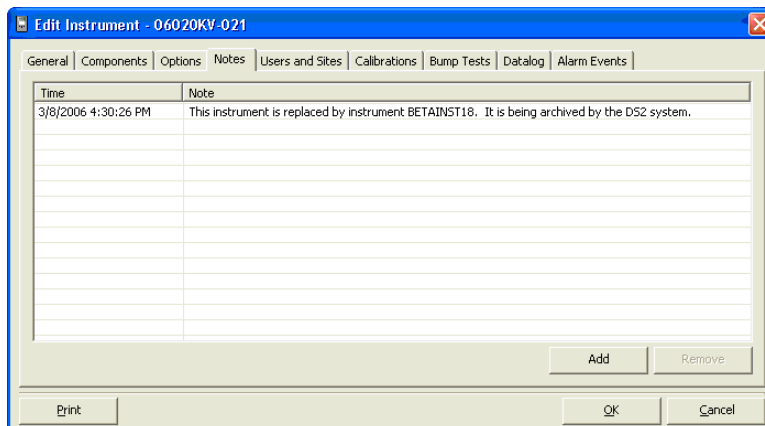
Figure 5-16. Sample Note for Exchanging Instruments

The following settings will be copied from the old instrument to the new one:

- Access code
- Backlight setting
- Language
- Location
- Recording interval
- Status
- TWA timebase
- All options
- All users
- All sites.

Copying of sensor settings occurs according to the following rules.

- When the replacement instrument has a sensor of the same sensor type in the same position as the original, the sensor settings will be copied.

  If the replacement instrument is missing 1 or more sensors that were present in the original instrument, the settings will still be copied for the sensors that are present.

  If the replacement instrument has a sensor of a type which was not present in the original instrument, the settings of that sensor will not be changed.

  If the replacement instrument has 1 sensor which is the same type as the original, but it is in a different position, the settings for that sensor will still be copied.

  If the replacement instrument has 2 sensors of same type, 1 in the same position as the original instrument, and 1 in a different position, only the sensor in the correct position will be modified.

  If original instrument has sensor of type A in positions 1 and 2, and replacement instrument has sensor of type A in position 1 only, then only the settings from position 1 should be copied to the replacement instrument.

- The sensor settings that will be copied are as follows:
    - Alarms settings
    - Calibration gas
    - Calibration gas concentration
    - Gas detected
    - Response Factor.

5.12. Edit Instrument – The Calibrations Tab

5.12.1. Overview

A calibration is a test that is used to detect inaccuracies in an instrument's sensors and make minor adjustments if necessary. When a calibration is performed on an IDS, the results are sent from the IDS to the docking station system.

Calibration results can be viewed in the DSSAC for an instrument, or for an individual sensor.

NOTE: Calibration data can also be entered into the system manually using the DSSAC. For example, if you performed a hand calibration on an instrument, you may wish to store the results in the docking station database.

To view calibration results for an instrument, follow the instructions listed below.

Step	Instruction
1.	Open the DSSAC application.
2.	Click on the Instruments option in the navigation pane. The contents pane displays a list of instruments.
3.	Double-click on the instrument whose calibration information you wish to view.
4.	Click on the Calibrations tab.
5.	Do one of the following: • Click the Show Last button to display the results of the last calibration for each of the sensors in the instrument. • Select a Start Date and an End Date, and then click the Display button to show calibration results for a specific date range.
6.	The calibration results appear in the list. Alternative: You can also right-click on the instrument and select Properties from the context menu. Alternative: You can also select the instrument, and click the File menu and select Properties.
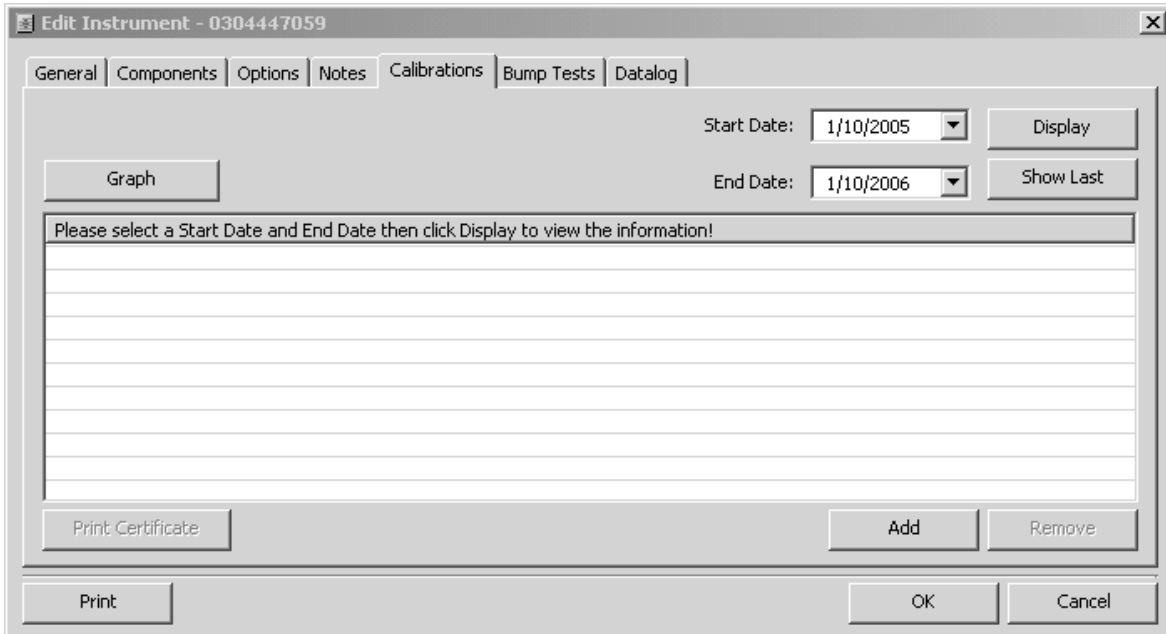
Figure 5-17. Calibrations Tab of the Edit Instrument Dialog Box
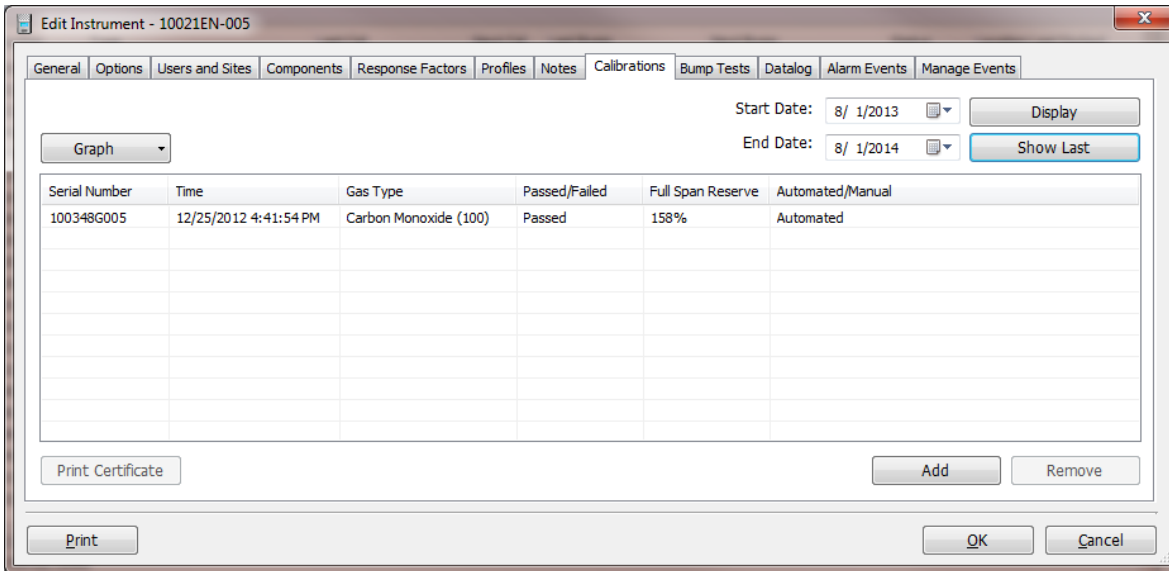
Figure 5-18. Displaying Calibration Information

The following information is displayed for each calibration:

- **Serial Number -**The serial number of the sensor
- **Time -**The date and time on which the calibration was performed
- **Gas Type -** The type of gas that was used for the calibration
- **Passed/Failed -**Whether or not the sensor passed the calibration. (Failed entries also display in red.) Options are "Passed", "Span failed" (if the instrument times out before

the IDS does), and "Failed" (if the IDS times out before the instrument does), although the user should only ever see "Passed" or "Span failed."

- **Full Span Reserve -** The Full Span Reserve measurement of the sensor at the time of the calibration.
- **Automated/Manual** – Whether the calibration was performed automatically on the docking station, or manually by the user.

To view the details of a calibration, follow the instructions listed below.

Step	Instruction
1.	To view the details of a calibration, double-click on its entry in the list. Alternative: You can also right-click on the entry and select Properties from the context menu.
2.	The Gas Responses dialog box appears. See the table below for an explanation of the fields in the Gas Responses dialog box.
3.	Click OK or Cancel to return to the Edit Instrument dialog box.
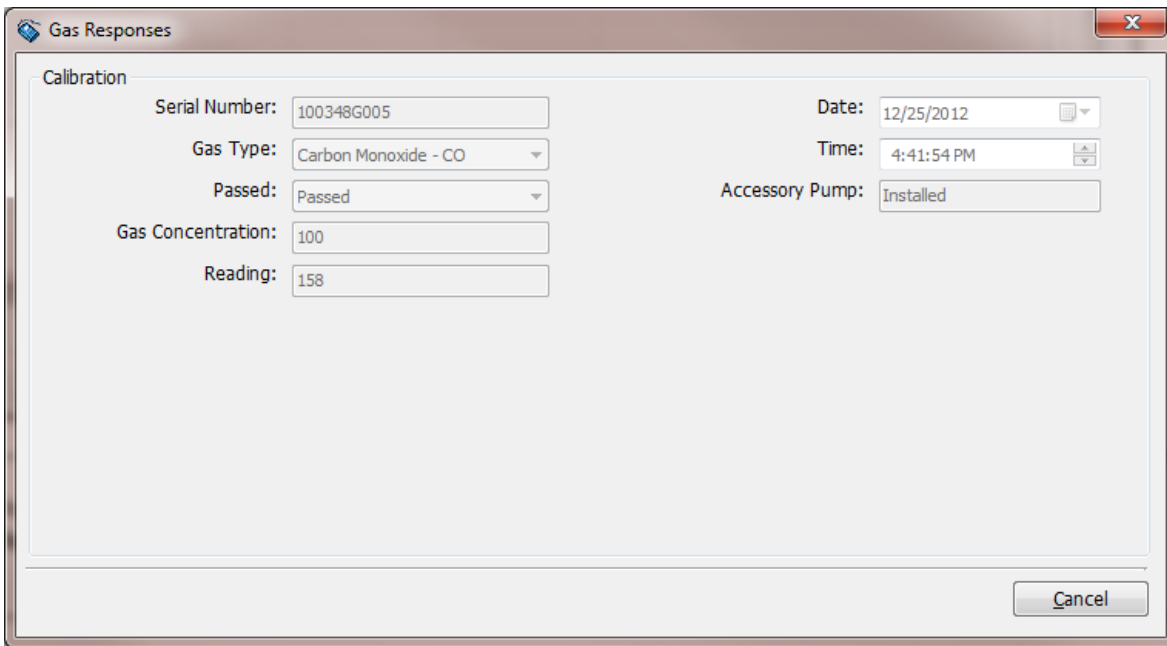
Figure 5-19. The Gas Responses Dialog Box

You can also view calibration results for each individual sensor in an instrument that contains multiple sensors.

To view calibration results for an individual sensor, follow the instructions listed below.

Table 5-8. Fields in the Gas Responses Dialog Box (Calibrations Tab)

Field	Description
Serial Number	The serial number of the sensor.
Gas Type	The type of gas that is used to perform the calibration
Passed	Whether or not the sensor passed the calibration. Values can be "Passed" or "Failed."
Gas Concentration	The concentration of gas in the gas cylinder.
Reading	The concentration reading that the instrument took during the calibration.
Date	The date on which the calibration was performed.
Time	The time at which the calibration was performed.
Accessory Pump	Whether or not the instrument has an accessory pump.

Step	Instruction
1.	Open the DSSAC application.
2.	Click on the Instruments option in the navigation pane. The contents pane displays a list of instruments.
3.	Double-click on the instrument whose calibration information you wish to view. Alternative: You can also right-click on the instrument and select Properties from the context menu. Alternative: You can also select the instrument, and click the File menu and select Properties.
4.	Click on the Components tab.
5.	Double-click on the sensor whose calibration results you wish to view. Alternative: You can also right-click on the sensor entry and select Properties from the context menu.
6.	The Edit Sensor dialog box appears. Click on the Calibrations tab.
7.	Do one of the following: • Click the Show Last button to display the results of the last calibration. • Select a Start Date and an End Date, and then click the Display button to show calibration results for a specific date range.
8.	The calibration results appear in the list. You can sort the calibration results by clicking on the column heading by which you would like to sort.
9.	To view the details of a calibration, double-click on its entry in the list. Alternative: You can also right-click on the entry and select Properties from the context menu.

Step	Instruction
10.	The Gas Responses dialog box appears. See the table above for an explanation of the fields in the Gas Responses dialog box.
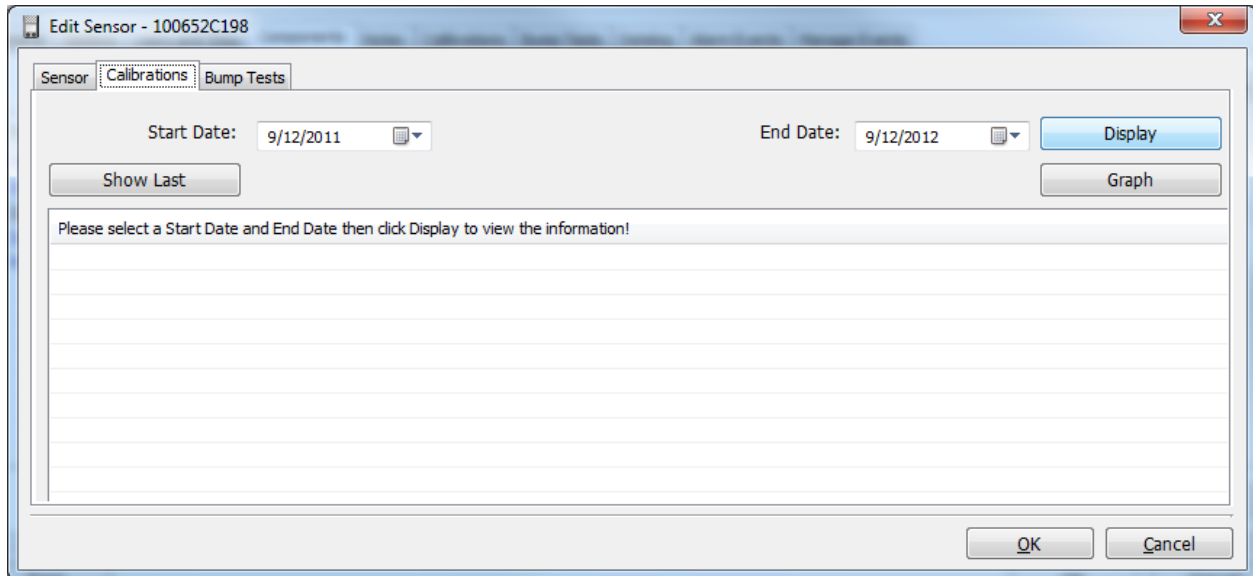
Figure 5-20. The Calibrations Dialog Box

5.12.2. Adding Calibration Data

You can also manually add calibration data to the system. You can use the instrument properties or the properties of an individual sensor to add calibration data.

NOTE: For legacy instruments, be sure that you have added sensor information to the Components tab of the instrument before you add calibration data. Refer to section 5.8 The Components Tab for more information about adding sensor information.

To add calibration data using instrument properties, follow the instructions below.

Step	Instruction
1.	Open the DSSAC application.
2.	Click on the Instruments option in the navigation pane. The contents pane displays a list of instruments.
3.	Double-click on the instrument for which you would like to add calibration data. Alternative: You can also right-click on the instrument and select Properties from the context menu. Alternative: You can also select the instrument, and click the File menu and select Properties.

4.	Click on the Calibrations tab.
5.	Click the Add button. The Gas Responses dialog box appears.
6.	Enter the data for each calibration, and then click the Add button to add it to the list.
7.	Click the OK button when you have finished adding calibration results in order to save them to the system. The results display on the Calibrations tab.

Figure 5-21. The Gas Responses Dialog Box – Serial Number Field

To add calibration data to an individual sensor, follow the instruction listed below.

Step	Instruction
1.	Open the DSSAC application.
2.	Click on the Instruments option in the navigation pane. The contents pane displays a list of instruments.
3.	Double-click on the instrument for which you would like to add calibration information. Alternative: You can also right-click on the instrument and select Properties from the context menu. Alternative: You can also select the instrument, and click the File menu and select Properties.
4.	Click on the Components tab.
5.	Double-click on the sensor for which you would like to add calibration information. Alternative: You can also right-click on the sensor entry and select Properties from the context menu.
6.	The Edit Sensor dialog box appears. Click on the Calibrations tab.
7.	Click the Add button. The Gas Responses dialog box appears.
8.	Enter the data for the calibration, and then click the OK button to save the entry. The new calibration data displays on the Calibrations tab.
9.	Click the OK or Close button to close the Edit Sensor dialog box.

NOTE: If you are an iNet customer, calibration information that is added manually to the system will not be downloaded to iNet.

5.12.3. Removing Calibration Data

You can remove calibration data from the system by using the Calibration tab in the instrument properties or in the properties of an individual sensor.

To remove calibration data from the instrument, follow the instructions listed below.

Step	Instruction
1.	Open the DSSAC application.
2.	Click on the Instruments option in the navigation pane. The contents pane displays a list of instruments.
3.	Double-click on the instrument that contains calibration results you wish to remove. Alternative: You can also right-click on the instrument and select Properties from the context menu. Alternative: You can also select the instrument, and click the File menu and select Properties.
4.	Click on the Calibrations tab.
5.	Do one of the following to locate the calibration results: - Click the Show Last button to display the results of the last calibration. - Select a Start Date and an End Date, and then click the Display button to show calibration results for a specific date range.
6.	The calibration results appear in the list.
7.	Select the calibration result you wish to remove. You can select multiple calibration results by pressing the CTRL key on your keyboard while clicking on each entry.
8.	Right click on the calibration result(s) and select Remove.
9.	The system displays a confirmation prompt. Click Yes to remove the calibration entries.
10.	Click OK to close the Edit Instrument dialog box.

5.12.4. Graphing Calibration Data

You can display a graph that shows the results of calibrations over a period of time. The graph can be used to view the trend of sensor degradation over a period of time.

To view a calibration data as a graph, follow the instructions listed below.

Step	Instruction
1.	Open the DSSAC application.
2.	Click on the Instruments option in the navigation pane. The contents pane displays a list of instruments.
3.	Double-click on the instrument whose calibration information you wish to view. Alternative: You can also right-click on the instrument and select Properties from the context menu. Alternative: You can also select the instrument, and click the File menu and select Properties.
4.	Click on the Calibrations tab.
5.	Select a Start Date and an End Date. You may optionally click the Display button to view the data that you are about to graph.

NOTE: The Graph feature does not necessarily graph the data that is displayed in the list of calibration results on the Calibration tab. It will graph the data that is between the dates selected in the **Start Date** and **End Date** fields.

Step	Instruction
6.	Click the Graph button.
7.	A graph of the calibration results that were in the selected date range appears in the Span Reserve Trend window. The graph shows the Span Reserve Values of the sensor(s) over the selected time range. You can modify the appearance of the graph by using the Graph Toolbar
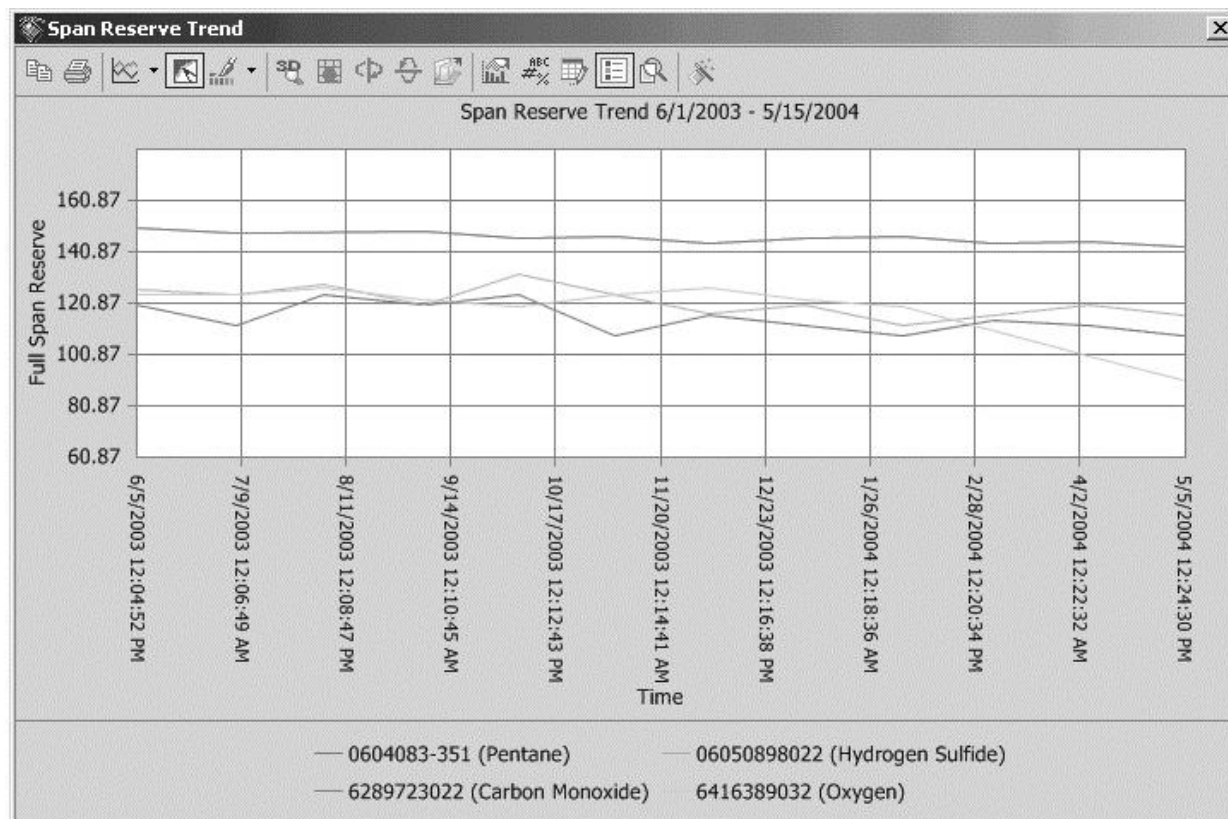
Figure 5-22. The Span Reserve Trend Window

Step	Instruction
8.	Click the close button (✖) in the top right corner of the window to close the graph.
9.	Click the Cancel button to close the Edit Instrument dialog box.

5.13. Edit Instrument – The Bump Tests Tab

5.13.1. Overview

A bump test, also known as a functional test, is a procedure that verifies that an instrument is able to detect gas. In a bump test, an instrument is exposed to a concentration of gas that is above the lowest alarm setting to verify that the alarm is functioning properly. Results of bump tests performed on an instrument while docked are downloaded to the docking station system, and can be viewed in the DSSAC.

Bump test results can be viewed in the DSSAC for an instrument, or for an individual sensor.

NOTE: Bump test data can also be entered into the system manually using the DSSAC.

To view bump test results for an instrument, follow the instructions listed below.

| Step	Instruction
1.	Open the DSSAC application.
2.	Click on the Instruments option in the navigation pane. The contents pane displays a list of instruments.
3.	Double-click on the instrument whose bump test information you wish to view. Alternative: You can also right-click on the instrument and select Properties from the context menu. Alternative: You can also select the instrument, and click the File menu and select Properties.
4.	Click on the Bump Tests tab.
5.	Do one of the following: • Click the Show Last button to display the results of the last bump test. • Select a Start Date and an End Date, and then click the Display button to show bump test results for a specific date range.
6.	The bump test results appear in the list.
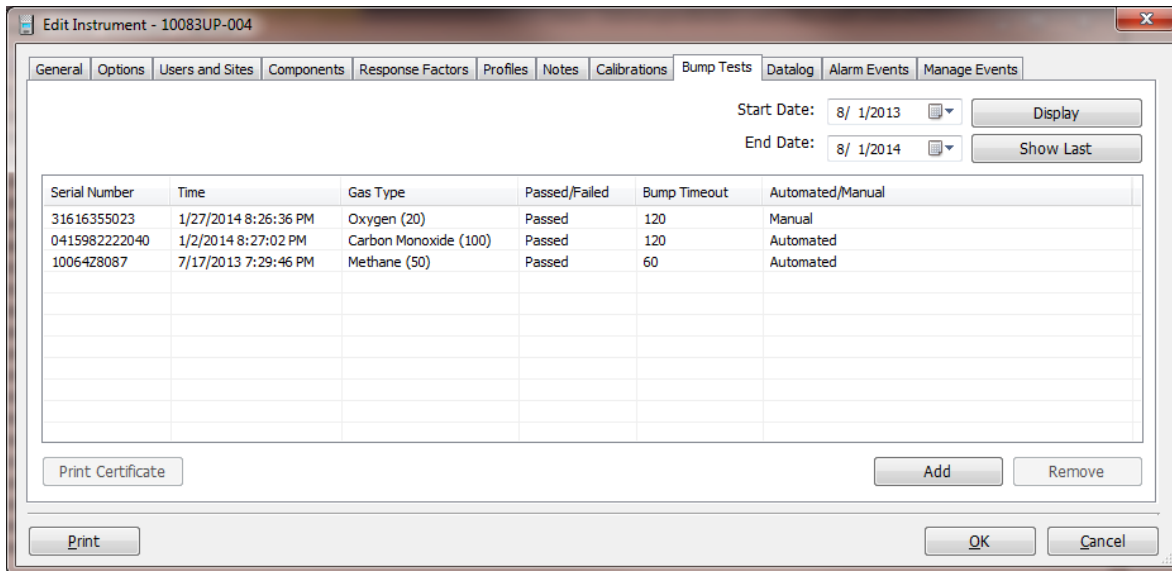
Figure 5-23. The Bump Test Tab of the Edit Instrument Dialog Box with Sample Results

Step	Instruction
7.	You can sort the bump test results by clicking on the column heading by which you would like to sort.
8.	The following information is displayed for each bump test.

Item	Description
Serial Number	The serial number of the sensor
Time	The date and time when the bump test was performed
Gas Type	The type of gas that was used for the bump test
Passed/Failed	Whether or not the sensor passed the bump test. (Failed entries also display in red.)
Bump Threshold	The bump threshold for the bump record. If no value has been recorded, the column will display the default value of 50.
Bump Timeout	The bump timeout for the bump record. If no value has been recorded (pre-5.0 docking stations), the column will display "N/A", since some older docking stations bump with a timeout of two minutes, and others at 90 seconds.
Automated/Manual	Whether the calibration was performed automatically on the docking station or manually by the user.

Step	Instruction
9.	To view the details of a bump test, double-click on its entry in the list. Alternative: You can also right-click on the entry and select Properties from the context menu.
10.	The Gas Responses dialog box appears. See the table below for an explanation of the fields in the Gas Responses dialog box.

Figure 5-24. The Gas Responses Dialog Box

Table 5-9. Fields in the Gas Responses Dialog Box (Bump Test Tab)

Button	Description
Serial Number	The serial number of the sensor.
Gas Type	The type of gas that is used to perform the bump test.
Passed	Whether or not the sensor passed the bump test. Values can be "Yes" or "No."
Gas Concentration	The concentration of gas in the gas cylinder.
Date	The date on which the bump test was performed.
Time	The time at which the bump test was performed.
Accessory Pump	Whether or not the instrument has an accessory pump.
Bump Threshold	Bump threshold of instrument.
Bump Timeout	Bump timeout of instrument.

You can also view bump test results for each individual sensor in an instrument that contains multiple sensors. To view bump test results for an individual sensor, follow the steps listed below.

| Step	Instruction
1.	Open the DSSAC application.
2.	Click on the Instruments option in the navigation pane. The contents pane displays a list of instruments.
3.	Double-click on the instrument whose bump test information you wish to view.
	Alternative: You can also right-click on the instrument and select Properties from the context menu.
	Alternative: You can also select the instrument, and click the File menu and select Properties.
4.	Click on the Components tab.
5.	Double-click on the sensor whose bump test results you wish to view.
	Alternative: You can also right-click on the sensor entry and select Properties from the context menu.
6.	The Edit Sensor dialog box appears. Click on the Bump Tests tab.
7.	Do one of the following:
	• Click the Show Last button to display the results of the last bump test.
	• Select a Start Date and an End Date, and then click the Display button to show bump test results for a specific date range.
8.	The bump test results appear in the list.
9.	To view the details of a bump test, double-click on its entry in the list.
	Alternative: You can also right-click on the entry and select Properties from the context menu.
10.	The Gas Responses dialog box appears. See the table above for an explanation of the fields in the Gas Responses dialog box.

Figure 5-25. The Bump Tests Tab of the Edit Senor Dialog Box
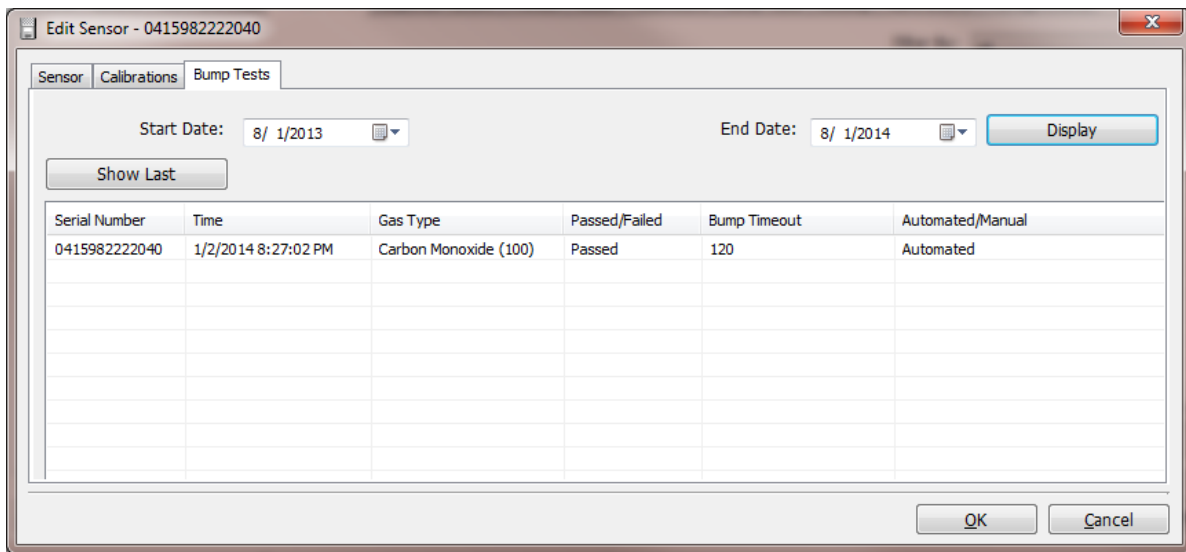
Figure 5-26. Sample Bump Test Data

NOTE: In the event of a failed sensor (CL2, HCL, or NH3), the docking station ignores any large reading that are above the sensor's maximum reading. In addition, the docking station ignores any negative readings whose absolute value is larger than the sensor's maximum reading.

NOTE: For bump tests, the IDS does not purge gas lines immediately before, during, or immediately after a bump test. The exception is the MX6 iBrid instruments that have an attached pump. For these, a 30-second gas line purge occurs at the end of all bump tests.

5.13.2. Adding Bump Test Data

You can also manually add bump test data to the system. You can use the instrument properties or the properties of an individual sensor to add bump test data.

NOTE: For legacy instruments, be sure that you have added sensor information to the Components tab of the instrument before you add bump test data. Refer to the Instrument Components section for more information about adding sensor data.

To add bump test data using instrument properties, follow the instructions listed below.

Step	Instruction
1.	Open the DSSAC application.
2.	Click on the Instruments option in the navigation pane. The contents pane displays a list of instruments.
3.	Double-click on the instrument for which you would like to add bump test information. Alternatives: You can also right-click on the instrument and select Properties from the context menu. You can also select the instrument, and click the File menu and select Properties.
4.	Click on the Bump Tests tab.
5.	Click the Add button. The Gas Responses dialog box appears.
6.	Enter the data for each bump test, and then click the Add button to add it to the list.
7.	Click the OK button to save the bump test results. The results display on the Bump Test tab.
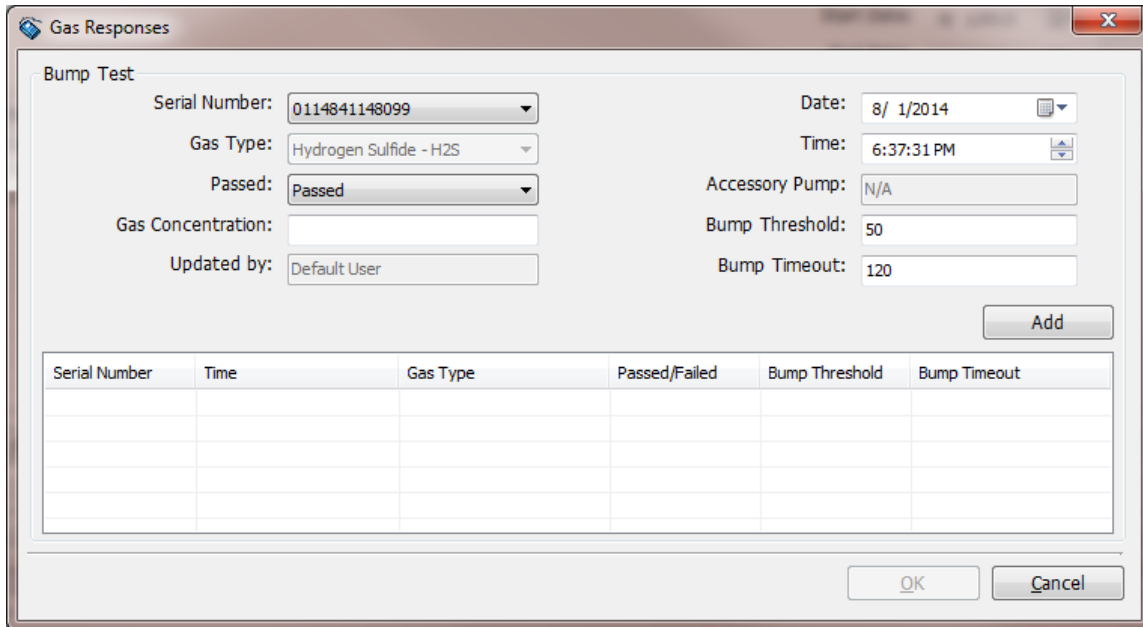
Figure 5-27. Adding Bump Test Data Using Instrument Properties

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NOTE: If you are an iNet customer, bump test information that is added manually to the system will not be downloaded to iNet.

5.13.3. Removing Bump Test Data

You can remove bump test data from the system. You can use the instrument properties or the properties of an individual sensor to remove bump test data.

To remove bump test data from the instrument, follow the instructions listed below.

Step	Instruction
1.	Open the DSSAC application.
2.	Click on the Instruments option in the navigation pane. The contents pane displays a list of instruments.
3.	Double-click on the instrument that has bump test data you wish to remove. Alternative: You can also right-click on the instrument and select Properties from the context menu. Alternative: You can also select the instrument, and click the File menu and select Properties.
4.	Click on the Bump Tests tab.
5.	Do one of the following to locate the bump test results: • Click the Show Last button to display the results of the last bump test. • Select a Start Date and an End Date, and then click the Display button to show bump test results for a specific date range.

Step	Instruction
6.	The bump test results appear in the list.
7.	Select the bump test result you wish to remove. You can select multiple bump test results by pressing the CTRL key on your keyboard while clicking on each entry.
8.	Right click on the bump test result(s) and select Remove.
9.	The system displays a confirmation prompt. Click Yes to remove the bump test results.
10.	Click OK to close the Edit Instrument dialog box.

To remove bump test data from a specific sensor, follow the instructions listed below.

Step	Instruction
1.	Open the DSSAC application.
2.	Click on the Instruments option in the navigation pane. The contents pane displays a list of instruments.
3.	Double-click on the instrument that contains bump test data you wish to remove. Alternative: You can also right-click on the instrument and select Properties from the context menu. Alternative: You can also select the instrument, and click the File menu and select Properties.
4.	Click on the Components tab.
5.	Double-click on the sensor that contains bump test data you wish to remove. Alternative: You can also right-click on the sensor entry and select Properties from the context menu.
6.	The Edit Sensor dialog box appears. Click on the Bump Tests tab.
7.	Do one of the following: • Click the Show Last button to display the results of the last bump test. • Select a Start Date and an End Date, and then click the Display button to show bump test results for a specific date range.
8.	The bump test results appear in the list.
9.	Select the bump test result you wish to remove. You can select multiple bump test results by pressing the CTRL key on your keyboard while clicking on each entry.
10.	Right click on the bump test result(s) and select Remove.
11.	The system displays a confirmation prompt. Click Yes to remove the bump test results.
12.	Click OK to close the Edit Sensor dialog box. Click OK to close the Edit Instrument dialog box.

5.14. Edit Instrument – The Datalog Tab

5.14.1. Overview

Datalog data is information that is recorded during an instrument's normal operation. This data are used to compute the STEL and TWA values over a period of time. For compatible instruments, datalog data are downloaded into the docking station system and can be viewed using the DSSAC. Components of the Datalog tab are explained below.
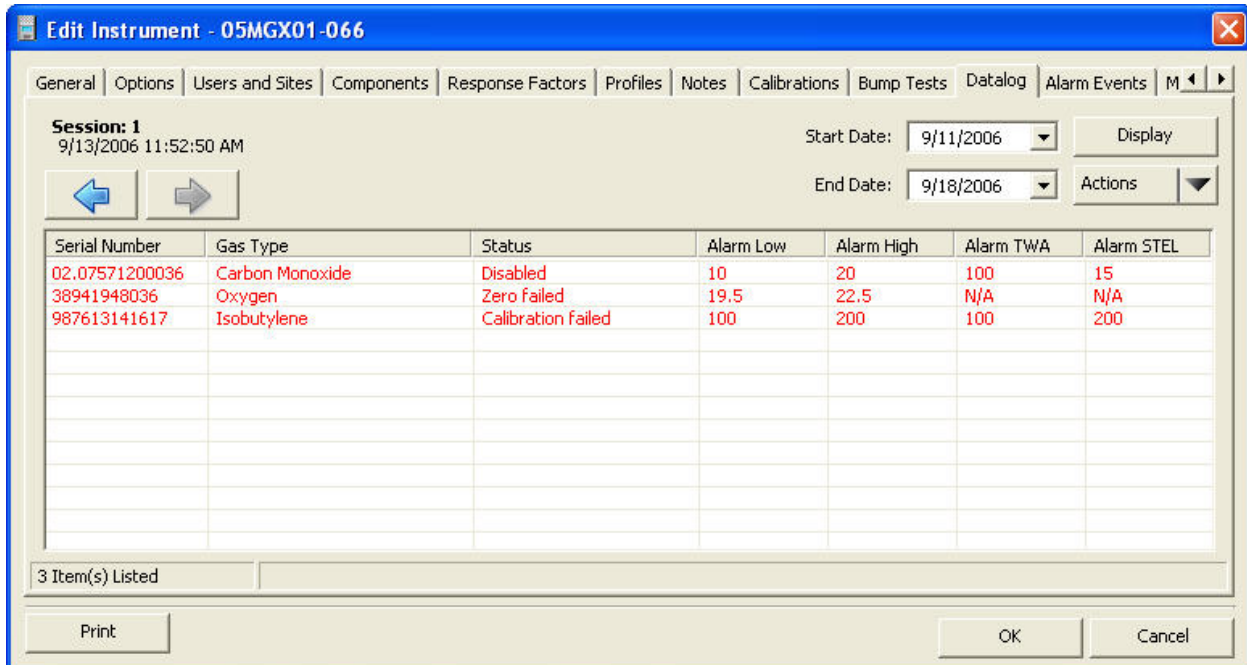
Figure 5-28. Datalog Tab

Table 5-10. Elements of the Datalog Tab

Element	Description
Session	This field shows the current session number. Below it are the associated date and time.
Forward/Back Arrow Buttons	The forward and back buttons are located on the left side of the screen and allow the user to navigate through different data session screens.
Start Date and End Date	These fields define selection criteria for session data. Select a **Start Date** and an **End Date**, and then click the **Display** button to show datalog data sessions for the specified date range in the **Session Window**.
Display Button	Displays session data in the **Session Window**. To view only those sessions within a selected date range, use the **Start Date** and **End Date** fields.
Actions Button	The **Actions** button (or clicking the right mouse button over the list control) displays the **Actions Context Menu**.
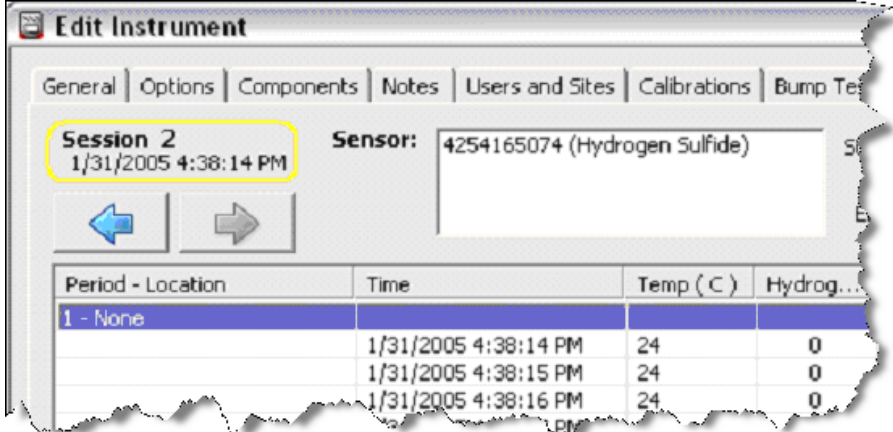
Element	Description
Print Button	Prints the current screen to the selected printer.
OK Button	Displays specific device data for the session selected in the **Session Window**.
Cancel Button	Pressing the **Cancel** button returns the user to the Session selection screen of the Datalog tab with no change to the data shown.
Status Bar	The status bar (located at the bottom of the screen) indicates any filters that may be applied.
Sessions Window	Scrollable window in which session data is displayed. Columns of the **Session Window** are listed and explained in the following table. If the user selects and double clicks a session, the window will change to show the session details. (Alternative is to select **Show Selected Components** from the **Actions** button.) If the datalog data has a session number, this number appears above the session date. **Figure 5-29. Session Details Window Showing Session Number** **NOTE:** Datalog session numbers are uploaded to iNet as part of datalog uploads. Refer to the iNet section for more information.

Table 5-11. Elements of the Sessions Window

Column	Description
Serial Number	This column lists the serial number of the sensor.
Gas Type	This column lists the type of gas that the sensor was detecting. It is not the type of sensor. For example, if a PID sensor is configured to use a "Hexane" response factor, then a gas type name of "Hexane" will appear in this column.
Status	This column lists the state of the sensor when the session was recorded. (Note: It is always empty for non-MX6 instruments). • States are any combination of the following: "**Disabled**", "**Zero failed**",

Column	Description
	"**Bump failed**" or "**Calibration failed**". The sensor will have no readings associated with it in the session if it has any of these three states. • A sensor may have more than one state, separated by commas; e.g. "**Disabled, Zero failed**".
Alarm Low	The gas reading that triggers a low alarm.
Alarm High	The gas reading that triggers a high alarm.
Alarm TWA	The threshold that a Time Weighted Average (TWA) reading must cross to trigger an alarm.
Alarm STEL	The threshold that a Short Term Exposure Limit (STEL) reading must cross to trigger an alarm.
Bump failed	The instrument failed the bump test.

NOTE: If a sensor was Disabled, or was in Cal Failure or Zero Failure mode during recording of the session, then the sensor information appears in red in the session window.

NOTE: If session contains a PID sensor that was using a Custom Response Factor (CRF) at the time of datalog recording, then that CRF is displayed in the DSSAC. The CRFs name and value are displayed in the column that normally displays the gas type for sensor. For example, instead of "02 – Oxygen", the column would contain something like "My Custom RF – 1.01".

NOTE: Users are able to select multiple sensors on the Session/Sensor screen.

NOTE: If two sensors are installed in the Tango TX1 when the data are logged, the docking station system will download data for three sensors. Data from the installed sensors are logged and downloaded as sensor 1 and sensor 2 data. Data that are logged and downloaded as sensor 3 (or VIRTUAL) are algorithm-calculated values that are based on sensor 1 and sensor 2 data. DSSAC displays only the VIRTUAL data.

 If only one sensor is installed or working when the data are logged, the downloaded and DSSAC-displayed data will contain only information for that sensor.

Figure 5-30. Actions Context Menu

Table 5-12. Elements of the Actions Context Menu

Item	Description
Show Selected Components	Causes the sessions window to change to the session details window. If the datalog data has a session number, this number appears above the session date as shown in Figure 5-5. Selecting one or more sensors will enable this option on the context menu. Selecting this option or double-clicking on any single selection will display the Session/Data screen.
Find User/Location	Presents the user with the Find form which is used to filter session data by user, location, and date. For additional information, refer to the Find User/Location section that follows.
View/Edit Comments	Displays a form in which comments for the selected session can be viewed, entered and/or edited. It is disabled until a session is selected.
Graph Session Data	Presents a graph of the selected session's data. The graph displays data from all of the sensors in the session.
Graph Period Data	Presents a graph of the selected period's data. The graph displays data from all of the periods in the session.
Print Data	Prints a Detail Report of the selected session data. This option is disabled until a session is selected.
Print Summary	Prints a Datalog Summary Report of the selected session data. This option is disabled until a session is selected.

Item	Description
Export	The Export option exports all data for the selected sensors. This option is disabled until one or more sensors are selected.

5.14.2. Find User/Location

The **Find User/Location** option of the Actions context menu displays the Find User/Location form which is used to filter session data by user, location, and date.
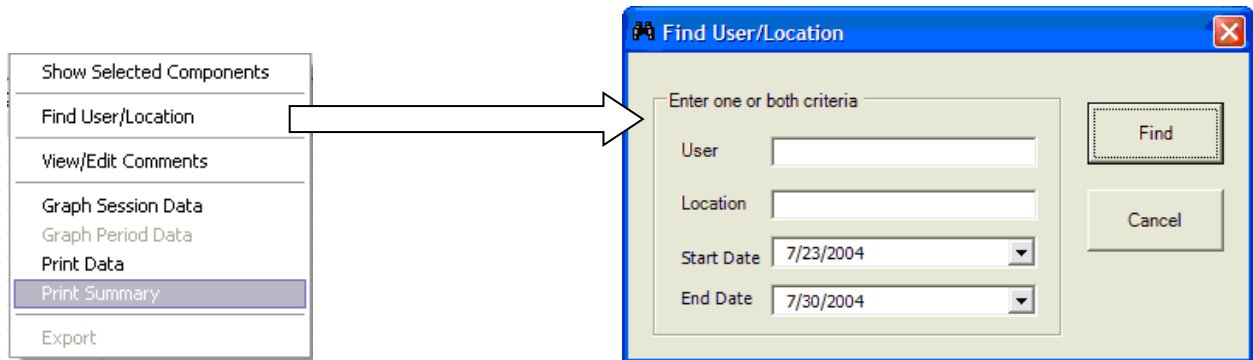
Figure 5-31. Find User/Location Form

Table 5-13. Elements of the Find User/Location Form

Element	Description
User field	Use this field to specify user text search criteria.
Location field	Use this field to specify location text search criteria.
Start Date and End Date fields	The **Start** and **End** dates reflect the values from the datalog tab. If these dates are changed on this screen, the Start and Stop drop-down boxes on the datalog tab will reflect those changes after the Find button is pressed. Entering nothing in the User and Location fields and pressing the Find button will be the same as selecting dates on the Datalog tab and pressing the Display button.
Cancel button	Pressing the **Cancel** button returns the user to the Session selection screen of the Datalog tab with no change to the data shown.
Find button	Pressing the **Find** button after entering user and/or location search criteria will return the user to the Session selection screen of the Datalog tab. The data shown will be filtered with only sessions that meet the selected criteria of user, location, and date(s).

NOTE: Search filtering does implicit wildcarding on the entered user and location fields. For example, if the user types in "smith", the filtering will show both "Joe Smith" and "Smithers" records.

NOTE: If both a user and location are specified, the search will logically "AND" these fields. That is, it will find all matches that have *both* the specified user *and* the specified location.

NOTE: The status bar on the Datalog tab indicates if there is a filter applied.

5.14.3. Graph Session Data

You can display a graph that shows datalog data over a period of time. There are two ways to graph datalog data: you can display a graph of an entire datalog session (**Graph Session Data**), or you can graph each period within the session for a particular sensor (**Graph Period Data**).

The **Graph Session Data** option of the Actions context menu displays the Datalog graph shown below. In the header of the graph, the datalog graph contains the instrument serial number, and the session date. The legend of the graph contains the sensor serial numbers and sensor types.
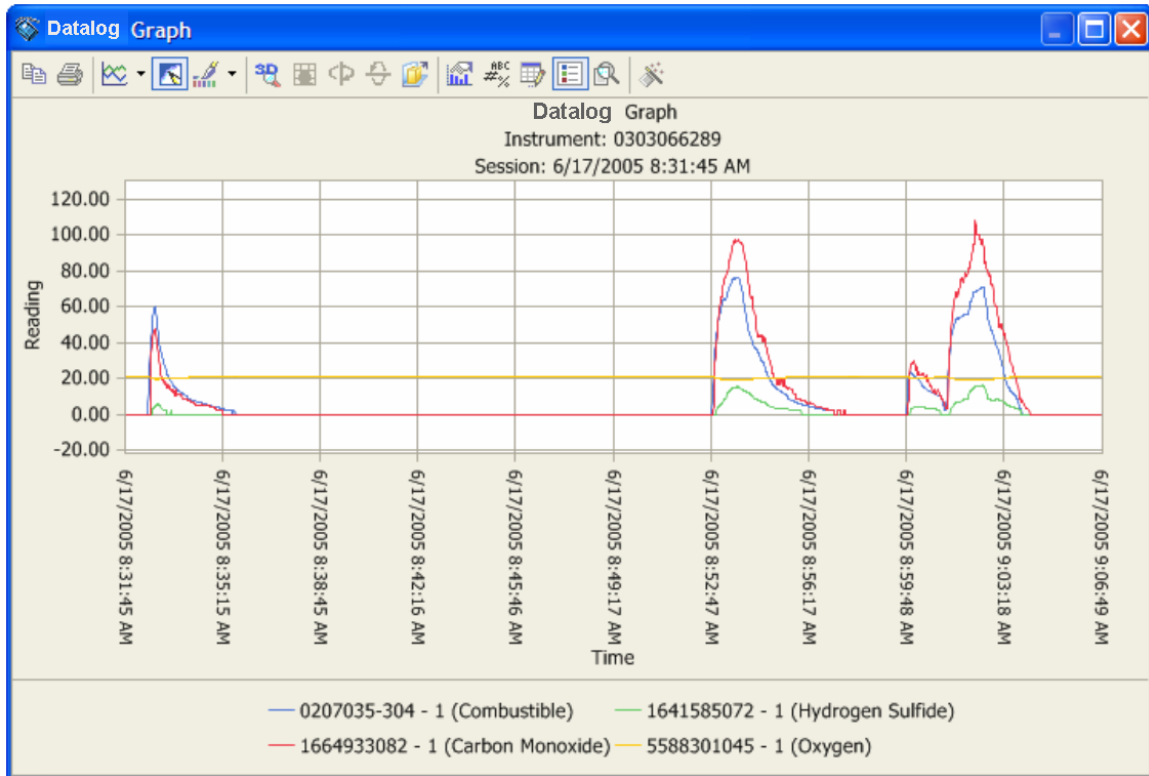
Figure 5-32. Sample Datalog Graph (No User Name Associated)
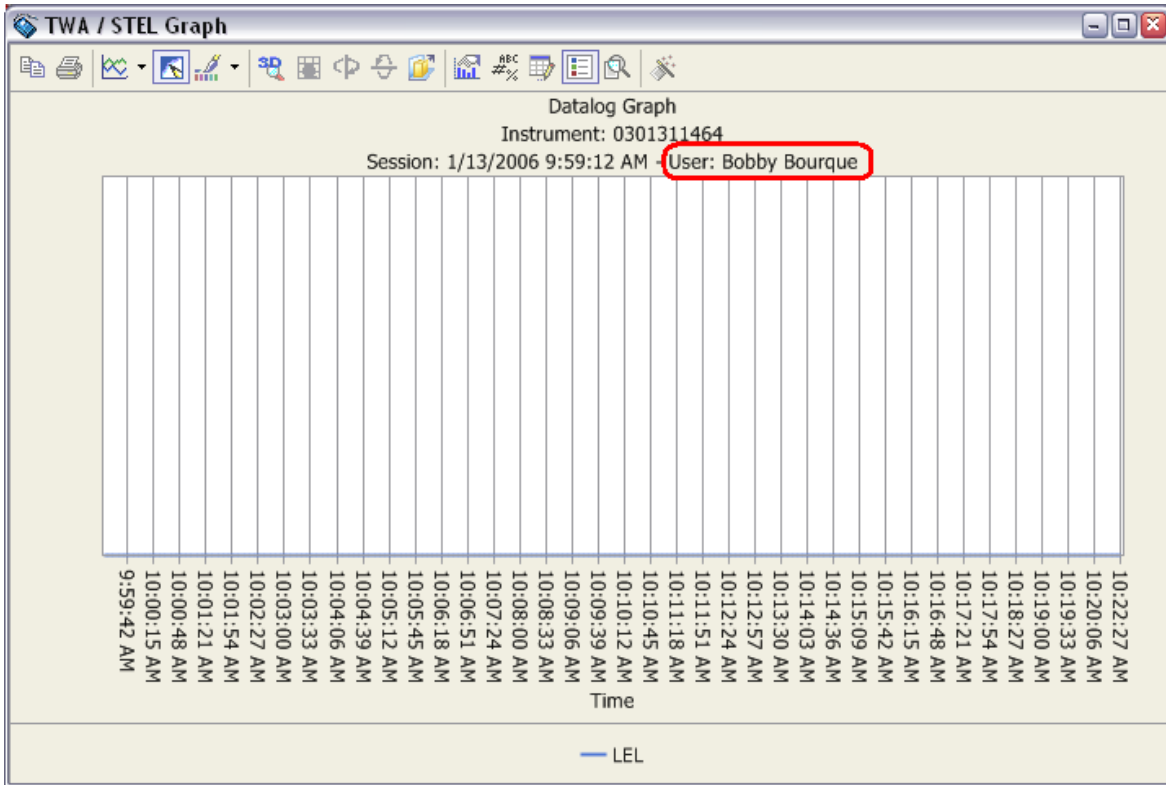
Figure 5-33. Sample Datalog Graph (With an Associated User Name)

5.14.4. Graph Period Data

You can display a graph that shows datalog data over a period of time. There are two ways to graph datalog data: you can display a graph of an entire datalog session (**Graph Session Data**), or you can graph each period within the session for a particular sensor (**Graph Period Data**).

The **Graph Period Data** option of the Actions context menu displays the TWA/STEL graph. One or more sensors are selected, then period information is displayed. The Session/Data screen shows the selected sensors and sensor data. A new list box displays the selected sensors.
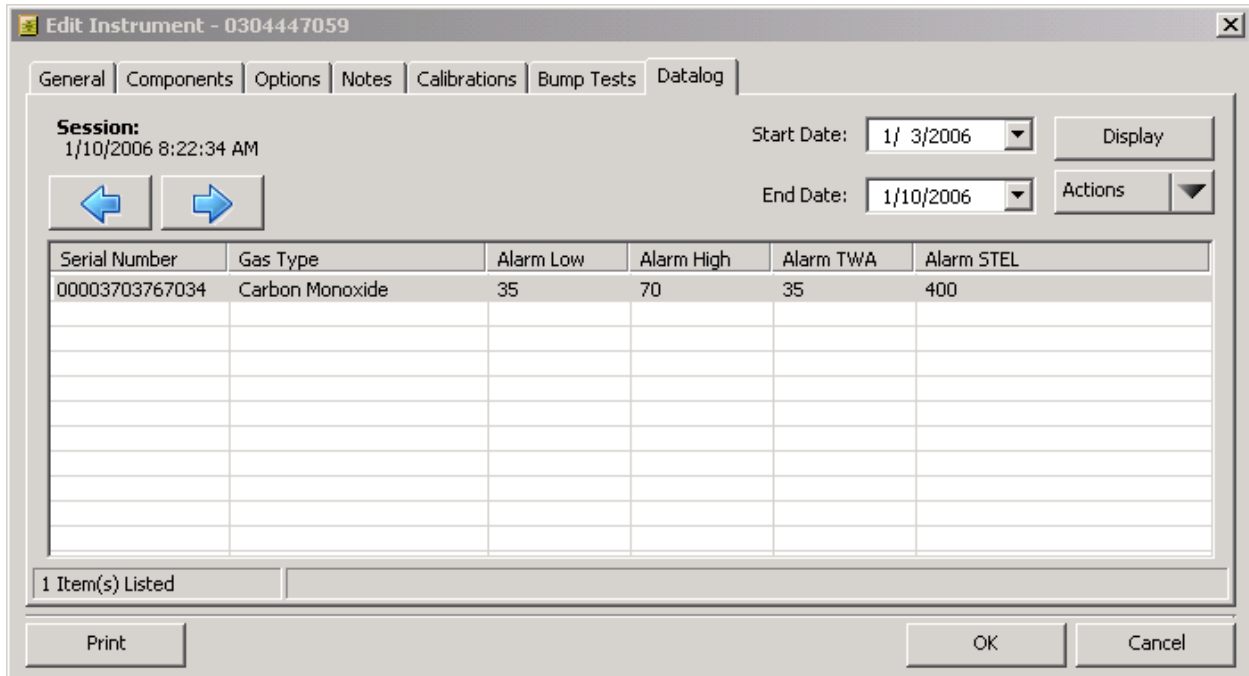
Figure 5-34. Selecting Sensors to Graph Period Data

Information recorded for each sensor is displayed. To return to the previous screen, use the back button. The following information is displayed for each sensor.

Table 5-14. Descriptions of Displayed Sensor Information

Item	Description
Serial Number	The serial number of the sensor
Gas Type	The type of gas that was being monitored.
Alarm Low	The Low Alarm setting on the sensor for the session.
Alarm High	The High Alarm setting on the sensor for the session.
Alarm TWA	The TWA Alarm setting on the sensor for the session.
Alarm STEL	The STEL Alarm setting on the sensor for the session.

NOTE: Selecting one or more sensors enables the Export Data and Show Selected Components options of the Actions menu.

NOTE: Selecting the Show Selected Components option (or double clicking any single selection) displays the Session Data screen.
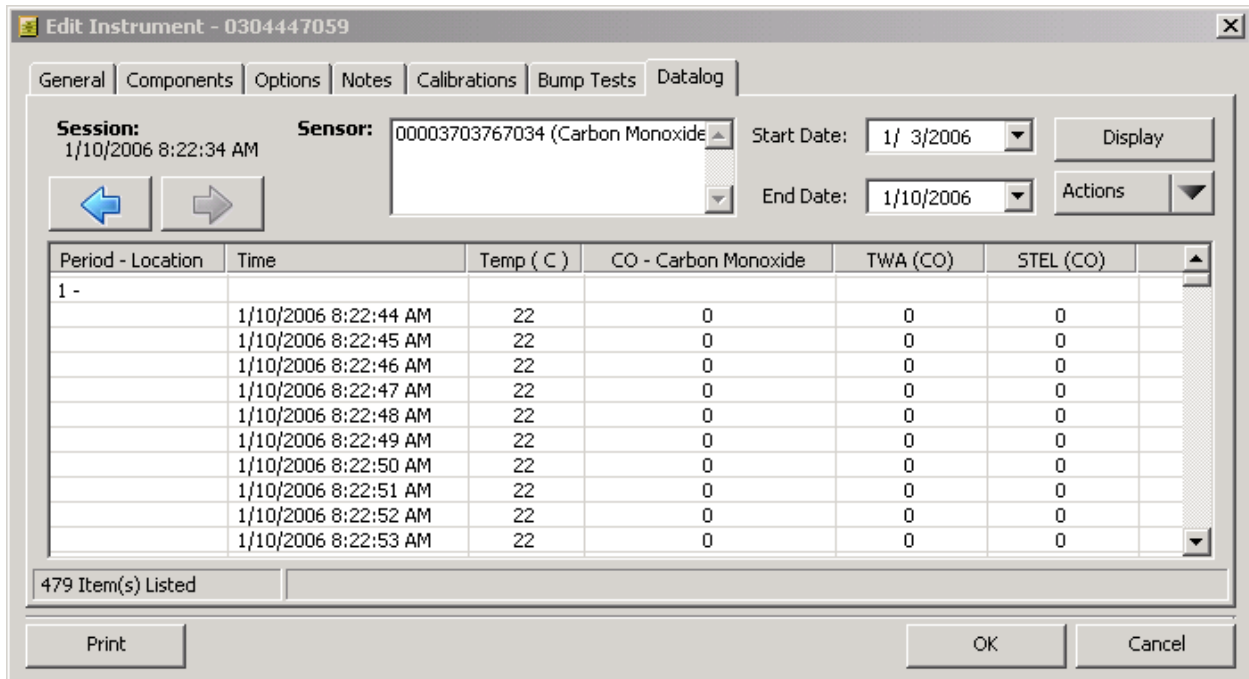
Figure 5-35. Period Data and List Box Showing the Sensor List Box

The following period information is displayed for each sensor.

Table 5-15. Descriptions of Displayed Period Information

Item	Description
Period-Location	The period and site, if any, for which the readings were taken. NOTE: The T82 Single Gas Monitor does not record Site data, so only the period number displays in the Period-Location column for the T82.
Time	The time of the reading.
Reading	The actual reading that was taken by the instrument.
Temp (C)	The temperature (in Celsius) at the time of the reading.
TWA	The Time Weighed Average (TWA) value at the time of the reading.
STEL	The Short Term Exposure Limit (STEL) value at the time of the reading.

Selecting the **Graph Selected Period Data** from the Actions button displays a graph of all the sensors selected on previous screen.
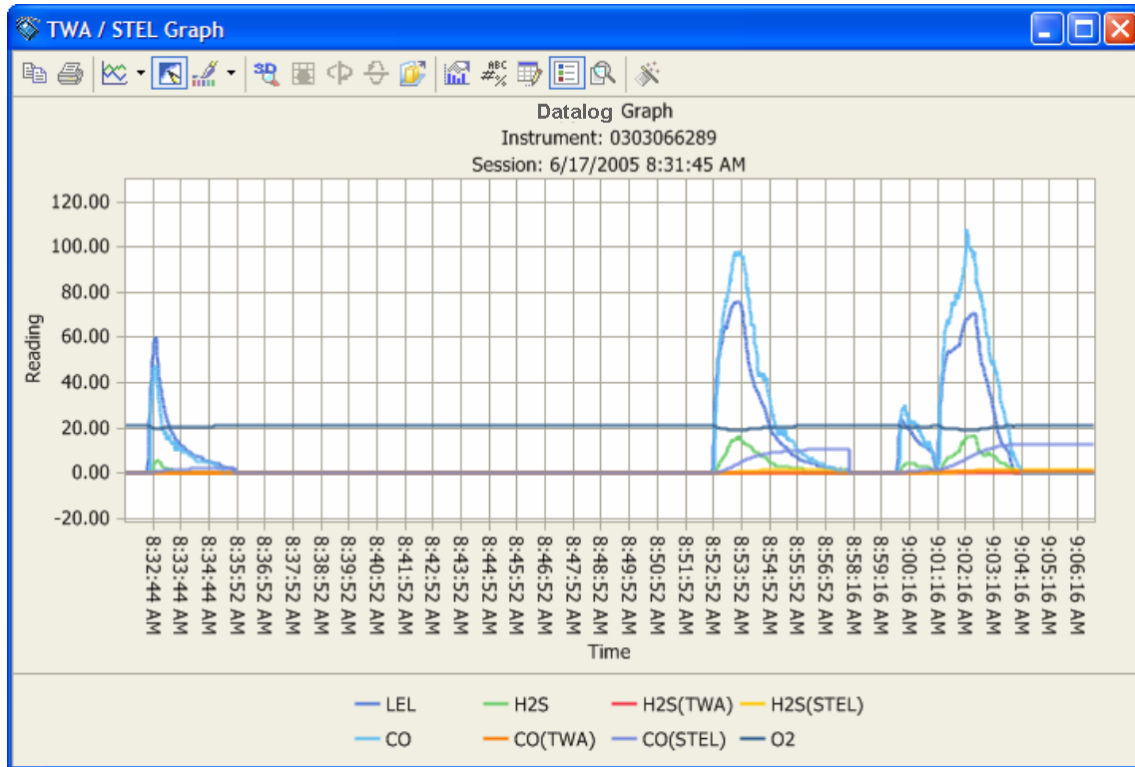
Figure 5-36. TWA/STEL Graph

5.14.5. Print Summary

The Print Summary option of the Actions button prints the Datalog report illustrated below. Highlighting any displayed session enables this option. This option is disabled by default and whenever no session is currently selected.
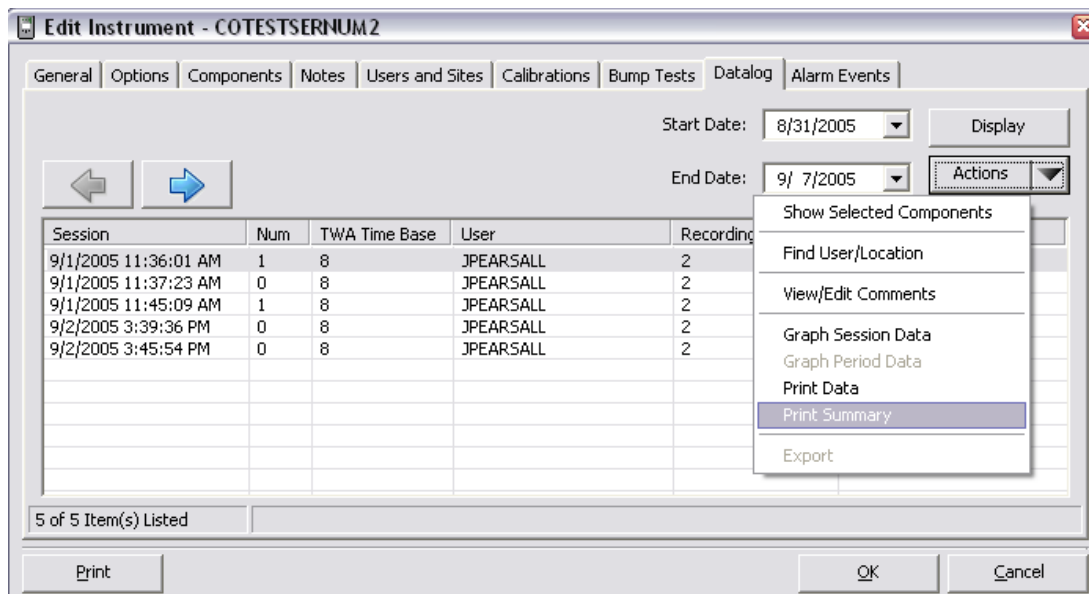
Figure 5-37. Selecting the Print Summary Option

Session	3/13/2014 1:27:19 PM					
Instrument	10083UP-004					
TWA Time Base	8					
Recording Interval	1					

Sensor Sessions

Sensor	Gas Type (Status)	Alarm Low		Alarm High	Alarm TWA	Alarm STEL
0116163203060	Hydrogen Sulfide	10		20	10	15
1 -	Time	Reading	Value			
	3/13/2014 1:27:19 PM	Min Reading	0			
	3/13/2014 1:27:19 PM	Max Reading	0			
	3/13/2014 1:39:43 PM	Final TWA	0			
	3/13/2014 1:27:19 PM	Min STEL	0			
	3/13/2014 1:27:19 PM	Max STEL	0			
2 -	Time	Reading	Value			
	3/13/2014 2:31:23 PM	Min Reading	0			
	3/13/2014 2:31:23 PM	Max Reading	0			
	3/14/2014 1:26:04 AM	Final TWA	0			
	3/13/2014 2:31:23 PM	Min STEL	0			
	3/13/2014 2:31:23 PM	Max STEL	0			

Sensor	Gas Type (Status)	Alarm Low		Alarm High	Alarm TWA	Alarm STEL
0415982222040	Carbon Monoxide	35		70	35	400
1 -	Time	Reading	Value			
	3/13/2014 1:27:19 PM	Min Reading	0			
	3/13/2014 1:27:19 PM	Max Reading	0			
	3/13/2014 1:39:43 PM	Final TWA	0			
	3/13/2014 1:27:19 PM	Min STEL	0			
	3/13/2014 1:27:19 PM	Max STEL	0			

Figure 5-38. Sample Datalog Summary Report

5.14.6. Export

The Export option of the Actions button is used to send sensor datalog information to an external file in comma separated variable (CSV) format. Upon successful completion, the following message is displayed:

"Exporting sensor datalog information completed successfully."

If an error occurs during the export process, the following message is displayed:

"The Docking Station Server Administration Console could not export datalog information! Please contact your System Administrator for assistance."

5.15. Edit Instrument – Alarm Events Tab

The Alarm Events tab displays alarm events downloaded from the instrument during a schedule Alarm Events Download Event. The contents of the Alarm Events Tab are explained below.
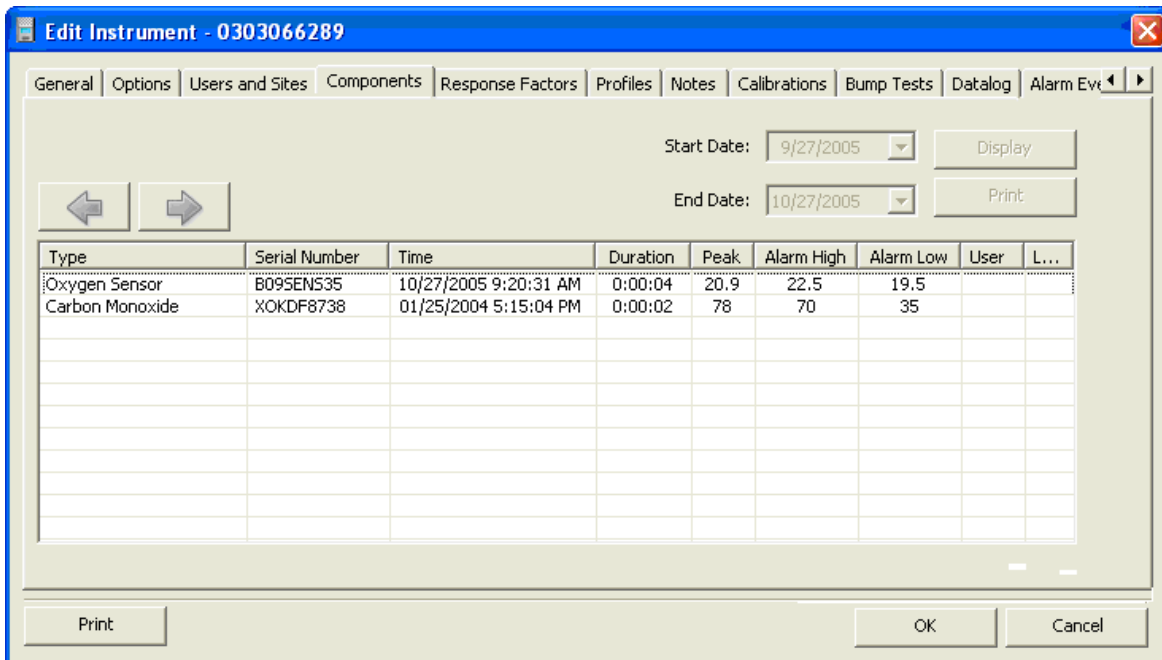
Figure 5-39. Edit Instruments – Alarm Events Tab

Table 5-16. Components of the Alarm Events Tab of the Edit Instrument Screen

Component	Description
Forward/Back Arrow Buttons	**The forward and back buttons are located on the left side of the screen and allow the user to navigate through different alarm event screens.**
Start Date and End Date	These fields define selection criteria for session data. Select a Start Date and an End Date, and then click the Display button to show alarm information for the specified date range in the Session Window.
Display Button	Displays alarm data in the Session Window. To view only those sessions within a selected date range, use the Start Date and End Date fields.
Print Button	Prints the current screen to the default printer.
OK Button	Displays specific alarm data for the sensor selected.
Cancel Button	Pressing the Cancel button returns the user to the Session selection screen of the Alarm Events tab with no change to the data shown.
Alarm Events Window	Scrollable window in which alarm data is displayed. Columns of the Alarm Events Window include sensor type, serial number, the time the alarm event was reported, the duration of the alarm event, and peak, high, and low alarm values.

NOTE: If two sensors are installed in the Tango TX1 when the data are logged, the docking station system will download data for three sensors. Data from the installed sensors are logged and downloaded as sensor 1 and sensor 2. Data that are logged and downloaded as sensor 3 (or VIRTUAL) are algorithm-calculated values that are based on sensor 1 and sensor 2 data. DSSAC displays only the VIRTUAL data.

If only one sensor is installed or working when the data are logged, the downloaded and DSSAC- displayed data will contain only information for that sensor.
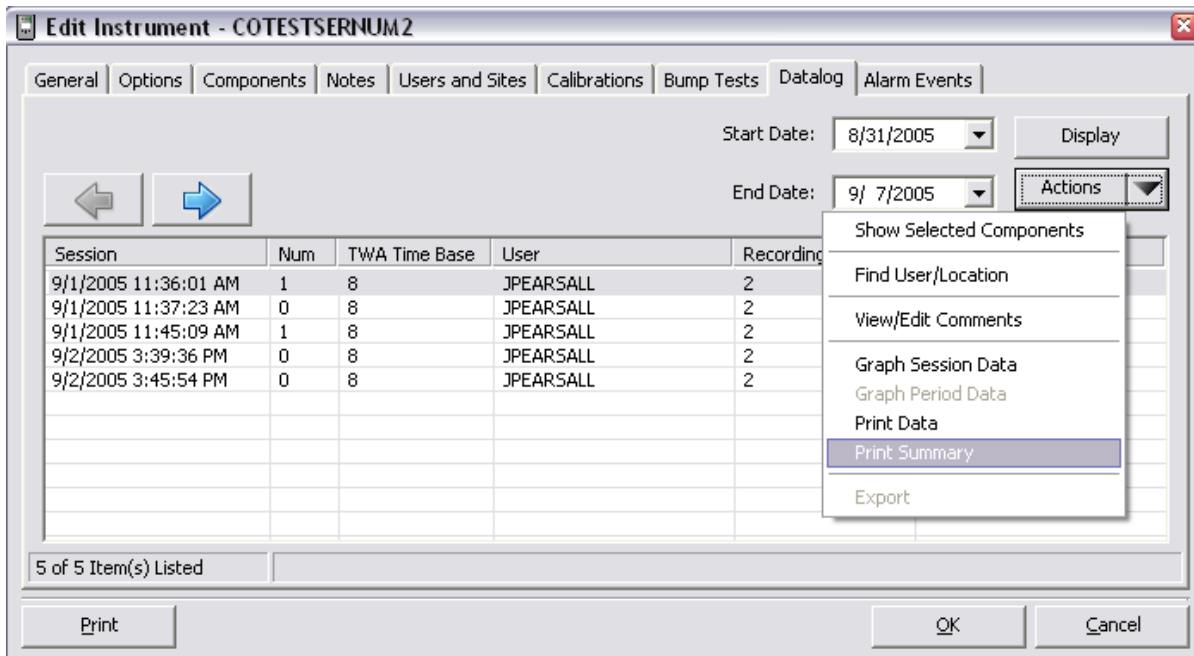
Table 5-17.1. Components of the Alarm Messages Tab of the Edit Instrument Screen

For Ventis Pro4 and Ventis Pro5, each sensor type can have its own unique set of alarm messages, and for a given sensor type, the messages can be unique for each event type (gas alert warning, gas low alarm, gas high alarm, TWA alarm, and STEL alarm). The instrument is capable of storing messages for up to 4 or 5 sensor types, for the Ventis Pro4 and Ventis Pro 5, respectively.
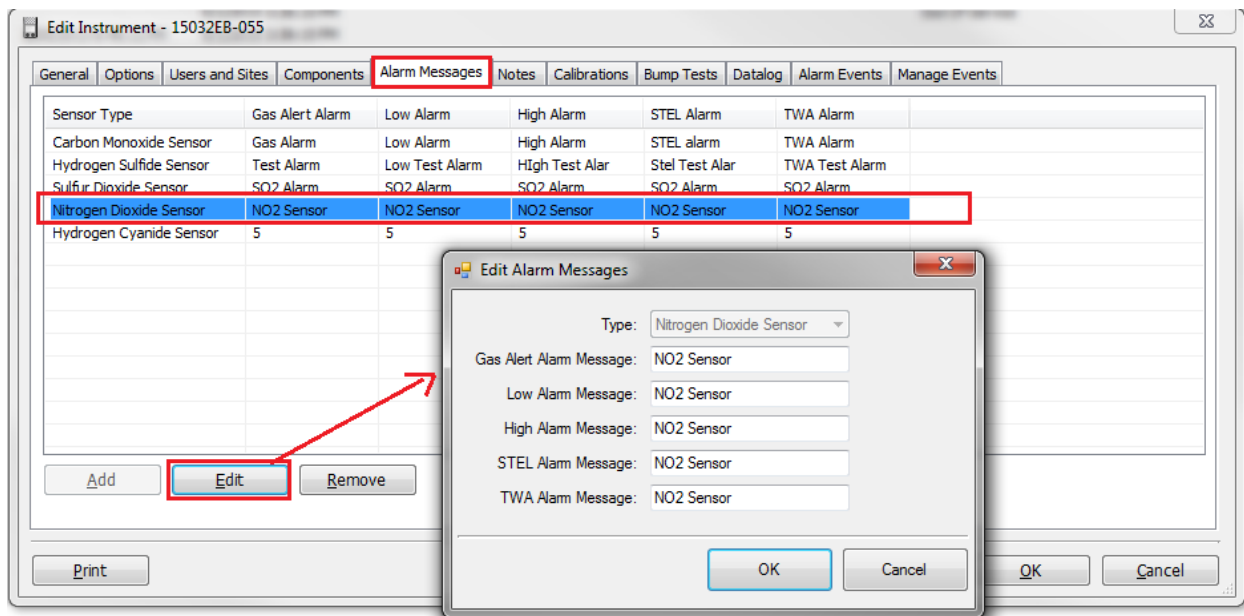
Figure 5-39.1. Edit Instruments – Alarm Messages Tab

5.16. Edit Instrument – Manage Events Tab

The Manage Events tab of the Edit Instrument screen displays the journal events for the current instrument. The Manage Events tab has a Journal Entries frame and a Force Event frame. The contents of this tab are explained below.
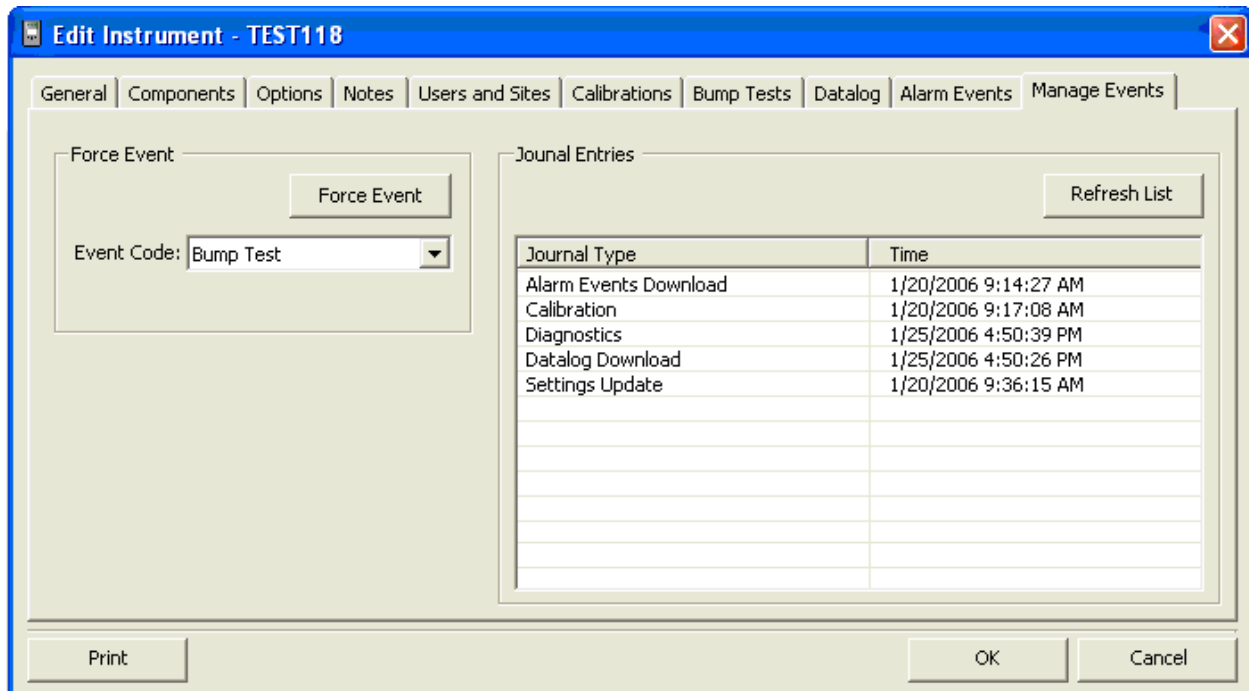
Figure 5-40. Edit Instruments – Manage Events Tab

Table 5-18. Components of the Manage Events Tab of the Edit Instrument Screen

Element	Description
Force Event frame	Inside the *Force Event* frame will be a drop-down list of all the possible events which may be forced and a button which will force the selected event.
Event Code Drop-down	The *Event Code* selection drop-down box lists the available events for that instrument. It also includes a "None" as the first entry.
	The drop-down element "*all the possible events*" is defined as any event that has been performed by the instrument and now has a journal entry.
	The "None" entry is the default.

Element	Description
Force Event button	The *Force Event* button is disabled while "None" is the current selection of the *Event Code* drop-down box. Selecting an *Event Code* other than "None" enables the button. Pressing the *Force Event* button after an event code is selected removes the selected event from the *Journal Entry* listview and *Event Code* dropdown and then sets the currently selected *Event Code* to "None". The following error messages are displayed when the user attempts to force an event in any of these cases. - "Instrument failed its last calibration" - "Docking Station unavailable due to leak detected" - "Instrument not docked" Forced event will not take place in these cases. Forced events will not occur if the matching Global Event is currently disabled.
Journal Entries frame	Inside the *Journal Entries* frame is a list view which displays all journal entries for the current instrument and a *Refresh List* button.
Refresh List Button	The *Refresh List* button forces the DSSAC to re-query the journal entries for the current instrument and updates the *Journal Entry* list view.
Journal Entry list view	The *Journal Entry* list view displays the *Journal Type* and *Time* for all journal entries for the current instrument. The list is sorted alphabetically by journal type. Double-clicking on any journal entry opens the *Event Journal Details* screen. **Figure 5-41. Event Journal Details Screen**

NOTE: The docking station system will download bump test date for physical sensors only. There will be no data logged or DSSAC-displayed for sensor 3 (or VIRTUAL).

5.17. Special Features

5.17.1. Adding Legacy Instruments
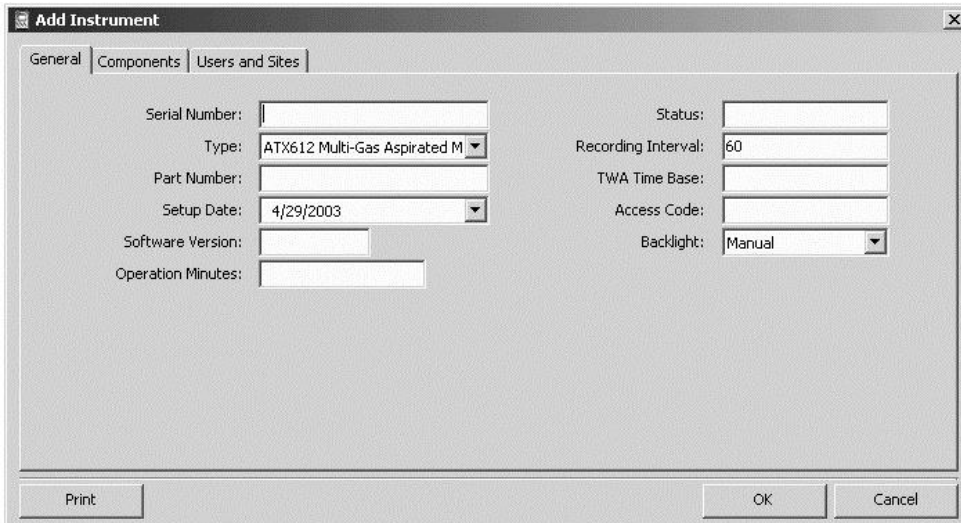
Legacy instruments are those instruments that cannot be docked in the DSX. See section 5.2 Instrument Compatibility for a list of the instruments that are not docking station compatible, but can be entered into the docking station system.

You can enter information about these legacy instruments into the system so that all of your instrument information is stored in a central location.

NOTE: The system provides an "Other Instrument" option for instruments that are not specified on the list of non-docking station compatible instruments.

To add a legacy instrument to the system, follow the instructions listed below.

Step	Instruction
1.	Open the DSSAC application.
2.	Click on the Instruments option in the navigation pane. The contents pane displays a list of instruments.
3.	Click on the File menu and select Add. Alternative: You can also right click on the Instruments option in the navigation pane and select Add from the context menu.
4.	The Add Instrument dialog box appears, displaying the General tab.

Figure 5-42. Adding a Legacy Instrument to the System

Step	Instruction
5.	Enter the serial number of the instrument and select an instrument type. Complete the remaining fields. See the Instrument Properties section for a description of each of the fields on the General tab.
6.	Click on the Components tab. Enter the batteries and sensors that are used in the instrument. See the Instrument Components section for detailed instructions for adding instrument components.
7.	Click on the Users and Sites tab to enter User and Site information for the instrument. See the Users and Sites section for detailed instructions for adding user and site data.
8.	Click OK to save your changes. The instrument information has been added to the system.

5.17.2. Removing an Instrument

You can also remove an instrument from the system using the DSSAC. However, if you remove a docking station compatible instrument, the system will detect it the next time it is docked, and re-add it to the system.

To remove an instrument, follow the instructions listed below.

Step	Instruction
1.	Open the DSSAC application.
2.	Click on the Instruments option in the navigation pane. The contents pane displays a list of instruments.
3.	Select the instrument you would like to remove. You can select multiple instruments by pressing the CTRL key on your keyboard while selecting each instrument.
4.	Click on the File menu and select Remove. Alternative: You can also right click on the instrument(s) you have selected and select Remove from the context menu.
5.	A confirmation prompt appears. Select Yes to remove the instrument. If you select No, the instrument is not removed.
6.	The instrument is removed from the system.

5.17.4 Manual Instrument Registration

Instruments typically are registered into the docking station system automatically. However, in some cases system administrators wish to prevent instruments from coming into the system automatically. This may be the case for example, when an instrument user from outside the system wishes to use the docking station to calibrate his instrument. The Manual Registration feature is designed to handle this case.

To use the Manual Registration feature, follow the instructions listed below.

Step	Instruction
1.	Open the DSSAC application.
2.	Click on the View option in the main tool bar. Select Configuration from the context menu.
3.	The Configuration dialog box appears.
4.	Select the Registration tab within the Configuration dialog box. • Click on the Enforce Manual Registration button. Once the manual registration option is selected, users will now be informed on the docking station display that their instrument is unregistered and should contact the system administrator. **Unregistered** **Instrument** **Contact** **Administrator** **SN: XXXXXXX-XXX**
5.	When the Enforce Manual Registration feature is selected and Unregistered instruments list will now appear under the Instruments heading in the Navigation Pane. Right clicking on one or more of the options in the "Unregistered" list in the contents pane will provide the option to register previously unwanted instruments into the system.
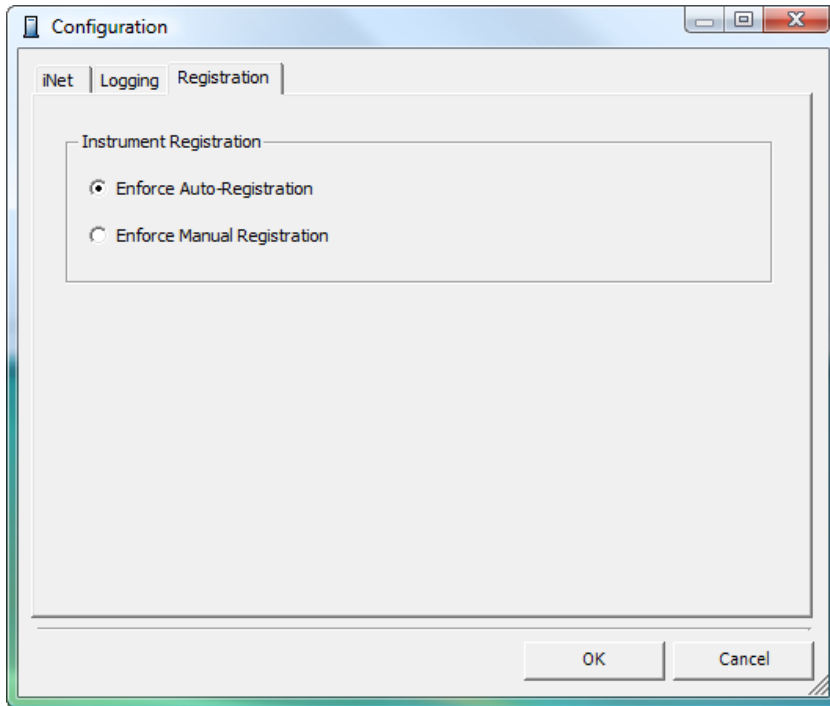
Figure 5-43. Instrument Configuration Dialog Box

5.17.3. Using the Find Instrument Feature

The Find Instrument feature allows you to display instruments that meet certain criteria, such as those instruments that are overdue for calibration, are due for calibration by a particular date, or failed their last calibration. You can also print a report that displays the instruments meeting the criteria rather than displaying the results on your screen.

To use the Find Instrument feature, follow the instructions listed below.

Step	Instruction
1.	Open the DSSAC application.
2.	Right click on the Instruments option in the navigation pane. Select Find from the context menu.
3.	The Find Instruments dialog box appears.
4.	Select one of the options below. • Due for Calibration – If you select this option, you must also select a date in the By Date field. This option displays instruments that are due for a calibration by the specified date. • Overdue for Calibration – Select this option to view all instruments whose calibration is overdue based on today's date. • Failed Last Calibration – Select this option to view all instruments for which the last calibration failed. • Marginal Calibration – Select this option to view all instruments for which the last calibration was marginal. • Overdue for bump test – Select this option to view all instruments for which the bump test is overdue based on today's date.
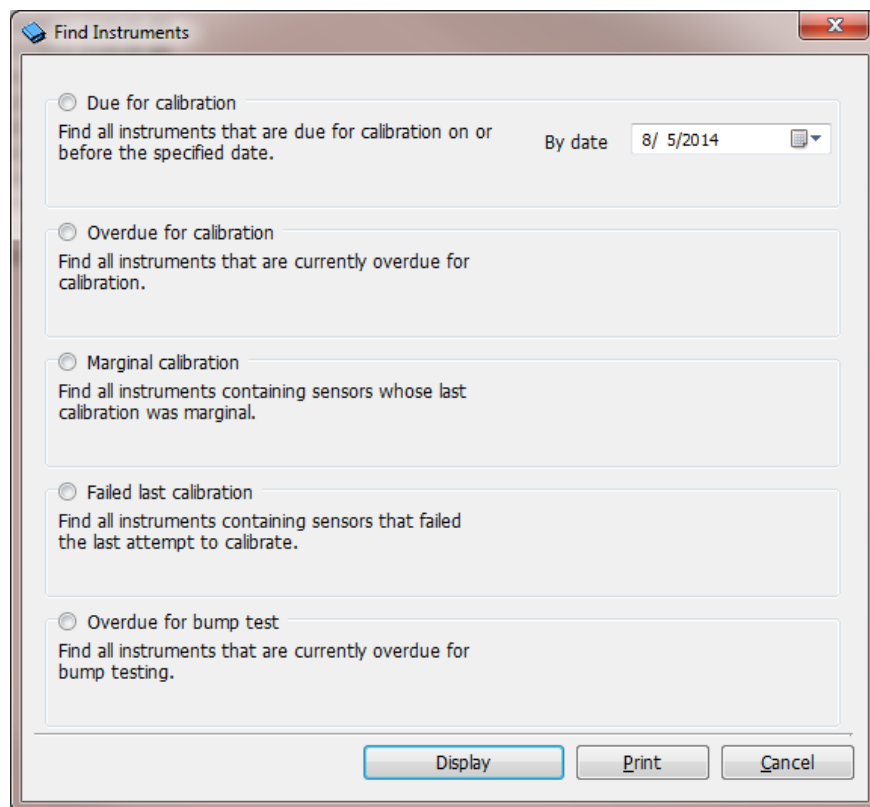
Figure 5-44. Finding Instruments Dialog Box

Step	Instruction
5.	Do one of the following: • Click Display to view only the instruments that meet the criteria in the Instruments contents pane. This option works as a filter, displaying only the instruments that match, and hiding those that do not. After you are done viewing the instruments, you must turn off the filter to view all instruments. To turn the filter off, right-click on the Instruments option in the navigation pane, and select Cancel find from the context menu. • Click Print to print a report that lists the instruments that meet the selected criteria. • Click Cancel to close the dialog box and not perform the instrument find.

# # #

Chapter

Configuring the Docking Station

6

6.1. Introduction

This chapter explains information about how to set up an Instrument Docking Station (IDS), from plugging it in, to configuring it to use gas cylinders for calibrations and bump tests, to viewing its status in the DSSAC.

Before you set up an IDS, be sure that the Docking Station Server (DSS) is running on your network, since the IDS requires the DSS in order to function. Each IDS also requires an Ethernet connection to your network as well as a power outlet.

6.2. Instrument Docking Station Hardware Overview

Below is a diagram that shows all of the connections on the back of an IDS. The details about how to use these connections are explained later in this chapter.

Port Set 4 (left)
Port Set 5(middle)
Port Set 6 (right)

Port Set 1* (left)
Port Set 2 (middle)
Port Set 3 (right)

*Use port set 1 only for zero-grade-air cylinders (or a fresh air fitting), not for calibration gas.

Power supply port (12 VDC)

USB port (USB) for firmware upgrades only

Network connection (LAN PORT)

Air inlet (ZERO AIR, blue)

Cable port for iGas tubing-and-card-reader assembly

Calibration gas inlet (CAL GAS, white)

Cable port for iGas tubing-and-card-reader assembly

Zero-air port set (left) and calibration gas port set (right)

Figure 6-1. DSX-L Back Panel (6-PORT UNIT SHOWN)

Note: The port sets 1, 2, and 3 are positioned in the same location on the 3-port unit.

The table below briefly describes the connections on the back of an IDS.

Table 6-1. Connections on the Back of an IDS

Connection	Description
ZERO AIR and CAL GAS	Connects the IDS to cylinders using gas tubing.
iGas 1, 2, and 3 (or up to 6 for a 6-port IDS)	If you are using iGas, these ports are used to connect the Smart Card reader to the IDS.
Service Port	A serial port that is used by Industrial Scientific technicians to service the IDS.
DC (12-volt) Power Inlet	Connects the IDS to a 12-volt power source.
AC Power Inlet	Connects the IDS to an AC power source.
USB Port	A port used to accept USB drives. USB drives are used to connect a compatible printer or to upload future software updates to the Docking Station.
Network Port	A standard Ethernet port to connect the IDS to your network.

NOTE: Industrial Scientific recommends that gas tubing should be ester-based polyurethane type 85A. The maximum length for tubing is 3.05 m (10'); however, for Chlorine (Cl2), Ammonia (NH3) and Hydrogen Chloride (HCl) gases, the gas tube length should not exceed .91 m (3').

The front of the IDS contains the cradle into which an instrument is docked. It also contains an LCD screen, a series of LED lights, and a keypad.

The LCD screen contains information about the activity of the IDS. The IDS contains three LED lights: red, yellow, and green. In general, if the red LED is illuminated, there is a problem with the IDS or the instrument that is currently docked. The yellow LED indicates that the IDS is busy performing a task, such as calibrating an instrument or downloading data. The green LED lights when the IDS is ready to receive instructions, either from the Docking Station Server, or from the IDS menu.

NOTE: Do not either dock or undock an instrument on the IDS when the yellow LED is illuminated, except when the instrument battery is charging.

Please refer to the LED and Alarm Signals section for more detail about the meanings of LED indicators, LCD messages, and alarm signals.
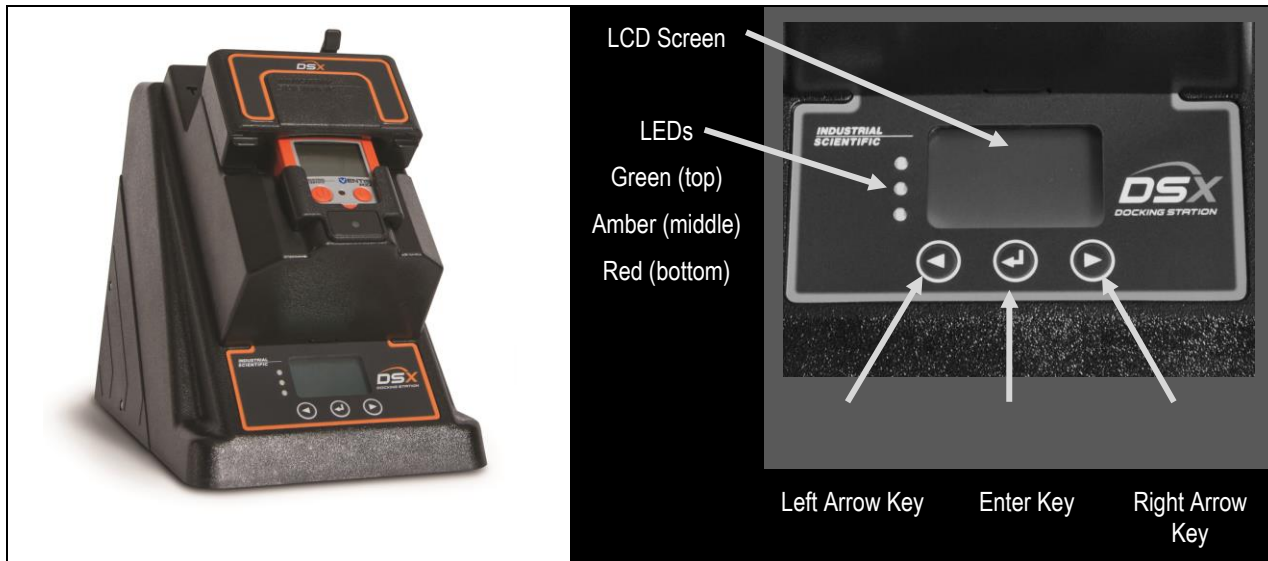
Figure 6-2. . Front Panel of a DSX-L

6.3. Setting Up an Instrument Docking Station

To prepare the IDS hardware for operation, follow the instructions listed below.

Step	Instruction
1.	Be sure that the DSS is running on your network, and that you have a connection to the network for the IDS.
2.	Connect the network cable into a network connection. Plug the other end of the cable to the LAN Port located on the back of the IDS.
3.	Remove the power supply's cover: press the lever and slide the cover in the direction indicated. The adapter plug (or dedicated power cord, if ordered) replaces the cover.
4.	Plug the power cord into a suitable outlet. The IDS automatically turns on when you plug it in.

NOTE: When the IDS is first plugged in, the three LEDs simultaneously flash. There is then a 40-second delay while the IDS boots. During the boot-up phase, the yellow LED is illuminated. When the IDS has completed booting, the backlight on the LCD panel turns on and the IDS emits a short beep.

Step	Instruction
5.	After the IDS has finished booting, the DSS automatically detects the IDS on the network. The LCD on the IDS displays "Discovering." The yellow LED illuminates.
6.	When the LCD on the IDS displays the current date and time and the green LED is illuminated, the IDS has been configured in DSSAC and is now set up and ready for further configuration.

6.4. Instrument Docking Station Status and Properties

When an IDS has been connected to the network and powered on for the first time, the DSS detects it and gathers its information to store in the system.
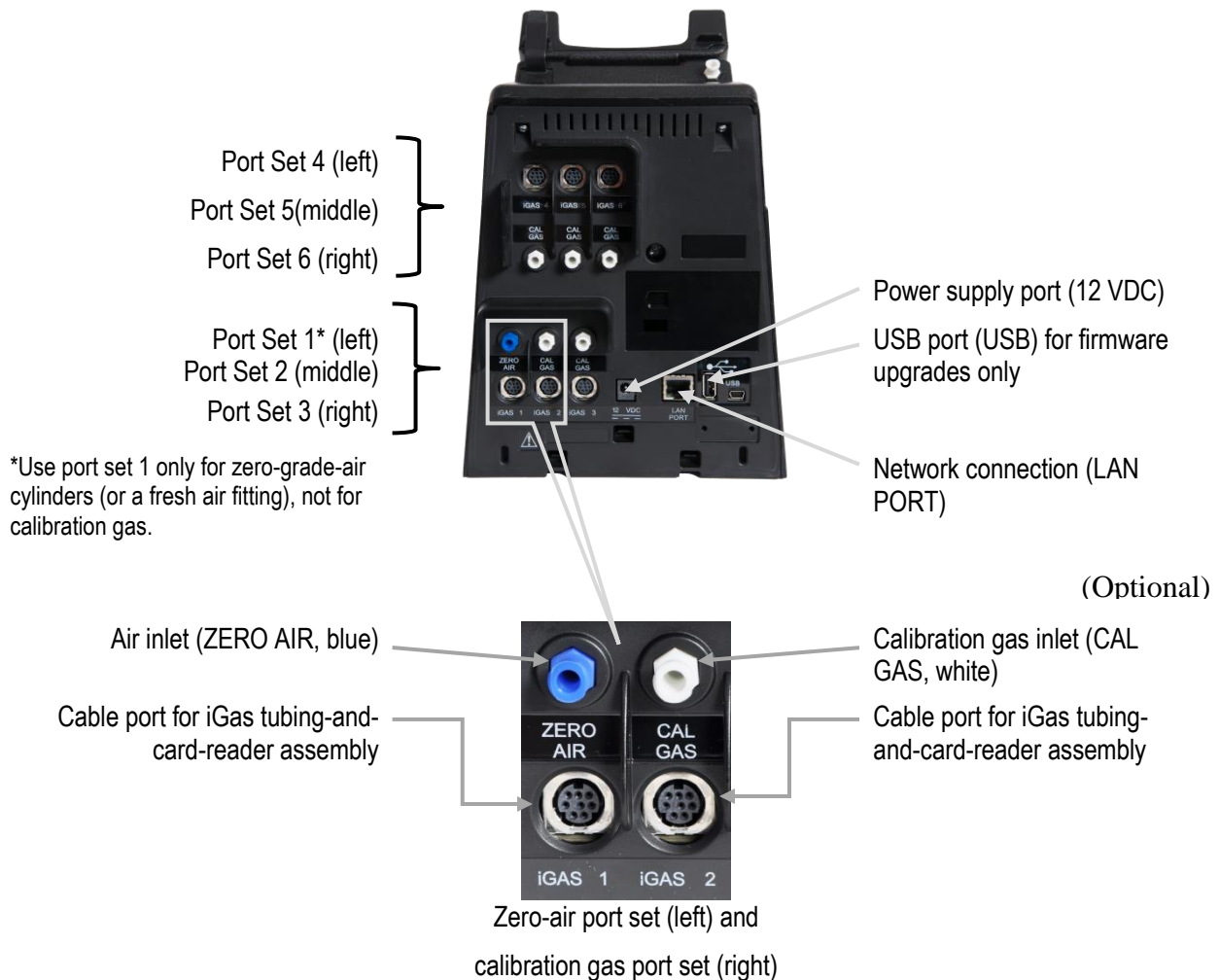
Figure 6-1. DSX-L Back Panel (6-PORT UNIT SHOWN)

Note: The port sets 1, 2, and 3 are positioned in the same location on the 3-port unit.

To view the current status of the IDS in the DSSAC, follow the instructions listed below.

Step	Instruction
1.	Launch the DSSAC application.
2.	Click on the DSS option in the navigation pane.
3.	The contents pane displays a list of IDSs and their current status. It also displays the serial number of the instrument that is currently docked, if any, and the date and time of the last connection.
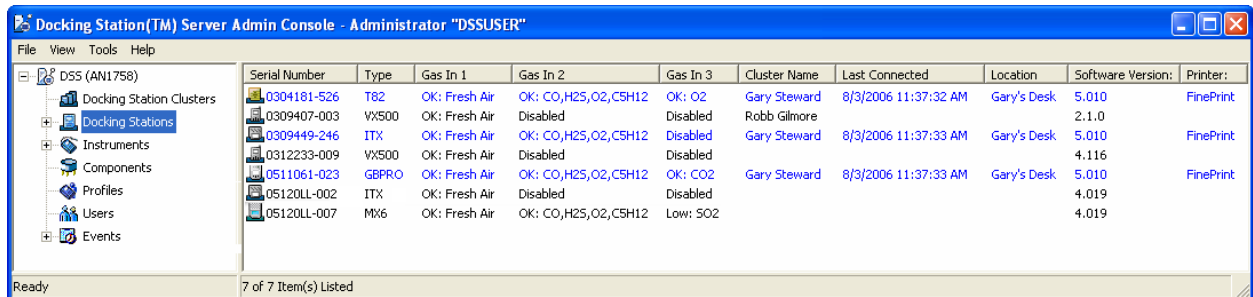
Figure 6-2. Contents Pane Showing IDSs and Current Status

NOTE: This screen will automatically update with the most recent information every 30 seconds. If you would like to see the most current information immediately, you can refresh the screen by right-clicking on the DSS option in the navigation pane and selecting **Refresh**. You can also press the F5 function key on your keyboard.

Step	Instruction
4.	You can double-click on an entry in the list to view the properties of the IDS or of the instrument that is docked. If there is no instrument docked on the IDS, the DSSAC displays the Edit Docking Station dialog box. See below for more information about the IDS properties. If an instrument is docked on the IDS, the Select Device dialog appears. **Figure 6-3. Select Device Dialog Box**

Step	Instruction
5.	Select whether you wish to view the IDS or instrument properties. If you select View instrument properties and then click OK, the Edit Instrument dialog box appears. If you select View Docking Station properties and then click OK, the Edit Docking Station dialog box appears.

You can also view the IDS properties in the DSSAC. To do this, follow the instructions listed below.

Step	Instruction
1.	Click the Docking Stations option in the navigation pane.
2.	The contents pane displays a list of IDSs that have been configured in the system. Any IDS that is currently active appears in blue.
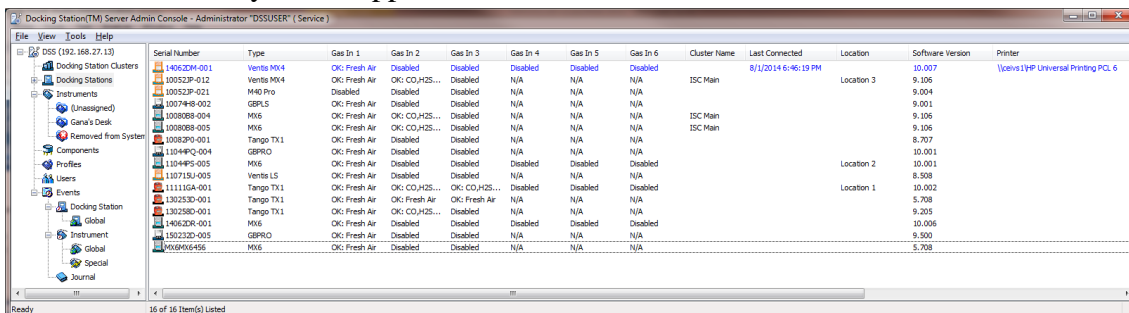
Figure 6-4. Sample Contents Pane

Column Title	Description
Serial Number	Serial number of the docking station as well as an icon to indicate a docking station type.
Type	Indicates the instrument type for the docking station: GasBadge Pro, MX6 iBrid, Tango TX1, Ventis Pro4, Ventis Pro5, Ventis LS, or Ventis MX4.
Gas In <x>	Indicates the type of gas, if any, currently assigned to port *x* and its current status. The status of a Gas In connection can be "OK", "Low", "Empty", "Due to Expire", "Expired", "Disabled" or "N/A".
Last Connected	The Date/Time stamp for the last time the docking station talked to the Docking Station Server.
Location	Current location assigned to the Docking Station.
Software Version	The version of the Docking Station software that the docking station is currently running.
Printer	The printer that the docking station will automatically print calibration reports to.

3.	Double-click on the IDS whose properties you wish to view. *Alternative:* You can also right-click on the IDS and select Properties from the context menu. *Alternative:* You can also select the IDS, and then click the File menu, and select Properties.
4.	The Edit Docking Station dialog box appears.

5.	The Edit Docking Station dialog box contains two tabs.
	General - This tab contains information about the IDS. Since IDSs are automatically configured by the Docking Station Server, many of the fields cannot be changed. You can, however, change the Language Setting, Location, Menu Locked and IDS Printer fields. See the table below for an explanation of each field on the General tab.
	Gas Inlets - This tab is used to configure the Gas In connections on the IDS. See section 6.6 Configuring Gas Cylinders for information about using the Gas Inlets tab.
	Manage Events - This tab displays the journal events for the current Docking Station.
	NOTE: The optional iGas feature can automatically configure your gas cylinders in the DSSAC for you. See section 6.11 Using iGas for more information about iGas.

Figure 6-5. Edit Docking Station Dialog Box – General Tab

Step	Instruction
6.	If you make any changes, click the OK button to save your changes. Otherwise, click the Cancel button to return to the list of IDSs without making any changes.

Table 6-2. Fields in the Edit Docking Station Dialog Box (General Tab)

Field	Description
Serial Number	The serial number of the IDS.
Type	The type of instrument that the IDS supports. Possible options are GasBadge Pro Single Gas Monitor, MX6 iBrid Multi-Gas Monitor, Tango TX1 Single-gas Monitor, Ventis LS, or Ventis MX4 Multi-Gas Monitor.
Part Number	The Industrial Scientific part number for the IDS.
Setup Date	The manufactured date of the IDS.
Software Version	The version of the IDS software that is running on the IDS.
Language Setting	The language that is used on the IDS menu. Options are: "English," "Français," "Espanol" "Deutsch," "Czech," "Polish," or "Russian."
Location	Use this field to identify the physical location of the IDS.
Menu Locked	Indicates if the menu can be used on the IDS. If "No" is selected, then the IDS menu can be used. If "Yes" is selected, then the IDS menu cannot be used.
IDS Printer	A non-editable dropdown list of all printers configured on the DSS server machine. A blank selection (the default) means "none" (i.e., no printer selected). Whenever a calibration takes place on the IDS, a calibration certificate is printed automatically to the selected printer, if a printer has been chosen. Whenever a bump test takes place on the IDS, a bump certificate will be printed automatically to the selected printer, if a printer has been chosen. If no printer has been chosen, the certificates will not print automatically. NOTE: In DSSAC, if the "Print" button for calibration or bump certificates is pressed, the user will be presented with his/her web browser with the certificate rendered within. The user chooses the printer to print to, and prints, using the browser's print/print setup functions.
Network Info	A label displaying the network information of the docking station.
Audible Alarm	Enables or disables the docking station buzzer.

Figure 6-6. Edit Docking Station Dialog Box – Manage Events Tab

The Edit Docking Station screen will have a new tab which displays the journal events for the current Docking Station. The Manage Events tab has Journal Entries and Force Event frames.

Table 6-3. Fields in the Edit Docking Station Dialog Box (Manage Events Tab)

Field	Description
Force Event frame	Inside the *Force Event* frame is a drop-down list of all the possible events which may be forced and a button which forces the selected event.
Event Code Drop-down	The *Event Code* selection drop-down box lists the available events for that Docking Station. It also includes a "None" as the first entry.
	The "*all the possible events*" option is defined as any event that has been performed by the Docking Station and now has a journal entry. The "None" entry is the default.

Field	Description
Force Event button	The *Force Event* button is disabled while "None" is the current selection of the *Event Code* drop-down box. Selecting an *Event Code* other than "None" enables the button. Pressing the *Force Event* button after an event code is selected removes the selected event from the *Journal Entry* listview and *Event Code* dropdown and then sets the currently selected *Event Code* to "None". The following error message is displayed when the user attempts to force an event in any of these cases. **"Docking Station unavailable due to leak detected"** Forced event will not take place in those cases. Similarly, forced events will not occur if the matching Global Event is currently disabled.
Journal Entries frame	Inside the *Journal Entries* frame is a list view which displays all journal entries for the current docking dtation and a *Display* button.
Refresh List Button	The *Refresh List* button forces the DSSAC to re-query the journal entries for the current docking station and updates the *Journal Entry* list view.
Journal Entry list view	The *Journal Entry* list view displays the *Journal Type* and *Time* for all journal entries for the current Docking Station. The list is sorted alphabetically by journal type. Double-clicking on any journal entry opens the *Event Journal Details* screen (same functionality as the original Journal node)
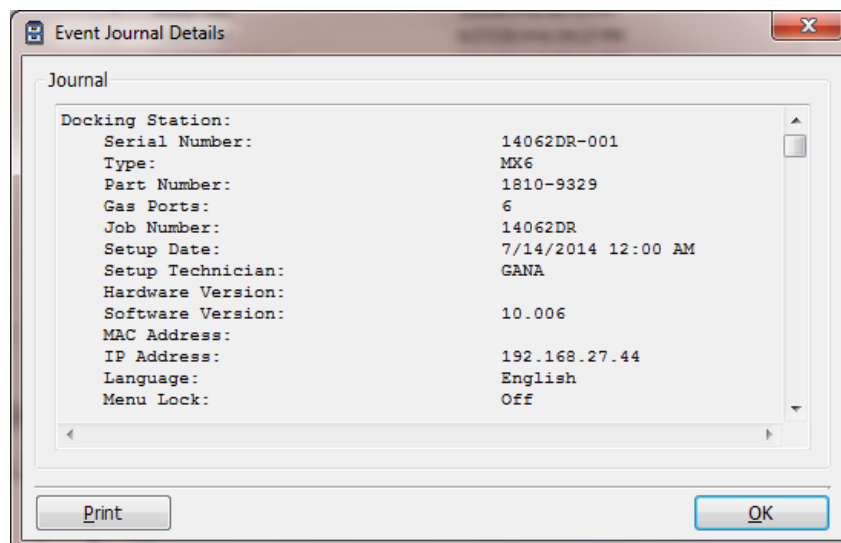
Figure 6-7. Event Journal Details Screen

6.5. Removing an Instrument Docking Station

You can remove an IDS from the DSSAC. However, the next time that the IDS is connected to the network, the Docking Station Server detects it and adds it back into the list of IDSs in the DSSAC.

You may need to remove an IDS if it is no longer in use or it is being moved to another docking station network.

To remove an IDS, follow the instructions listed below.

Step	Instruction
1.	Launch the DSSAC application.
2.	Click the Docking Stations option in the navigation pane.
3.	Select the IDS that you wish to remove. You can select multiple IDSs by pressing the CTRL key on your keyboard while clicking on each IDS.
4.	Click on the File menu and select Remove. Alternative: You can also right click on the selected IDS(s) and select Remove from the drop-down menu.
5.	A confirmation prompt appears. Click Yes to remove the IDS(s). Click No to cancel the removal.

6.6. Configuring Gas Cylinders

In order to perform calibrations and bump tests, the IDS gas connections must be configured to use gas cylinders. Configuring gas cylinders involves two steps: (1) setting up the physical hardware, i.e., the IDS and cylinders, and (2) configuring the Gas In connection in the DSSAC.

Each IDS has three or six port sets. Port set 1 is used to connect a fresh air fitting or a zero-grade-air cylinder. Port sets 2 – 6 are used to connect to gas cylinders.

The DSX docking station requires that a demand flow regulator be used on calibration gas cylinders that are connected to an IDS.

NOTE: If you are using iGas, you do not need to follow the instructions below. Please refer to section 6.11 Using iGas.

CAUTION: Compressed gas cylinders and their contents may present specific hazards to the user. Use only in a well-ventilated area. Use only in accordance with the instructions and warnings marked on the cylinder and the appropriate Material Safety Data Sheets.

To configure an IDS Gas In connection to use calibration gas, follow the instructions below.

Step	Instruction
1.	Connect the demand flow regulator to the gas cylinder. With the gauge facing away from you, place the regulator on top of the cylinder and turn the cylinder until it is connected tightly.
2.	Connect the open end of polyurethane gas tubing to the fitting on the demand flow regulator. Connect the other end of the tubing to the CAL GAS (or ZERO AIR) port on the back of the station; turn the leur clockwise to tighten.

NOTE: For Chlorine (Cl2), Ammonia (NH3) and Hydrogen Chloride (HCl) gases, the gas tube length should not exceed three (3) feet.

NOTE: Industrial Scientific recommends that gas tubing should be ester-based polyurethane type 85A. The maximum length for tubing is 3.05 m (10'); however, for Chlorine (Cl2), Ammonia (NH3) and Hydrogen Chloride (HCl) gases, the gas tube length should not exceed .91 m (3').

Step	Instruction
3.	Launch the DSSAC application. Click the Docking Stations option in the navigation pane.
4.	Double-click on the IDS whose Gas In connections you wish to configure. Alternative: You can also right-click on the IDS and select Properties from the context menu. Alternative: You can also select the IDS, and then click the File menu, and select Properties.
5.	The Edit Docking Station dialog box appears. Click on the Gas Inlets tab. The Gas Inlets tab contains either three (3) or six (6) tabs based on the number of gas ports available on the docking station. There is a tab for each Gas In connection on the IDS.

NOTE: Each Gas In tab contains an icon to identify the status of the connection. See Table 6-4 for a description of each of the icons.

Port Set 4 (left)

Port Set 5(middle)

Port Set 6 (right)

Port Set 1* (left)

Port Set 2 (middle)

Port Set 3 (right)

*Use port set 1 only for zero-grade-air cylinders (or a fresh air fitting), not for calibration gas.

Power supply port (12 VDC)

USB port (USB) for firmware upgrades only

Network connection (LAN PORT)

Air inlet (ZERO AIR, blue)

Cable port for iGas tubing-and-card-reader assembly

Calibration gas inlet (CAL GAS, white)

Cable port for iGas tubing-and-card-reader assembly

Zero-air port set (left) and

calibration gas port set (right)

Figure 6-1. DSX-L Back Panel (6-PORT UNIT SHOWN)

Note: The port sets 1, 2, and 3 are positioned in the same location on the 3-port unit.

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Step	Instruction
6.	Click on the Gas In tab that corresponds to the Gas In connection to which you have connected the gas cylinder.

Figure 6-2. Gas Inlets Tab

Step	Instruction
7.	Click the Assign button. A menu of options appears. Choose from the options below.

• Fresh Air – Configures the Gas In connection to use fresh ambient air, or for a Zero Air cylinder.

• ISC – Configures the Gas In connection to use an Industrial Scientific gas cylinder. See the Using ISC gas section for specific procedures for adding ISC gas.

• Non-ISC – Configures the Gas In connection to use a gas cylinder that was not purchased from Industrial Scientific. See the Using non-ISC gas for the specific procedures for adding non-ISC gas.

• Disabled – Configures the Gas In connection to be disabled, i.e., not using either a gas cylinder or fresh air. |
| 8. | The settings you have chosen appear in the dialog box on the Gas In tab that you had selected. If the Gas In connection is configured with gas, then the Gas Name, Concentration and Gas Symbol displays on the screen. The expiration date of the gas cylinder appears above the list of gases. |
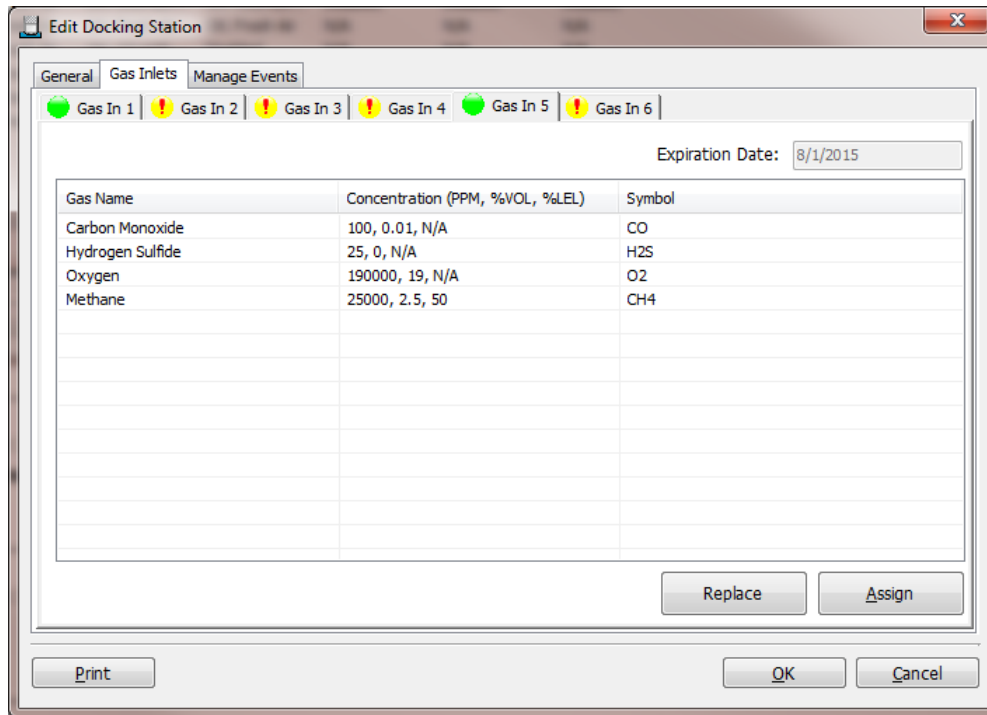
Figure 6-3. A Configured Gas In Tab

Step	Instruction
9.	Click the OK button from the Edit Docking Station dialog box to save your changes.
10.	The gas cylinder is now ready to be used.

CAUTION: When configuring Gas In connections, be careful that you have configured the correct gas type in the DSSAC that matches the gas type in the cylinder connected to the Gas In connection on the IDS. If this setup is incorrect, your calibrations may be run with the incorrect gas, rendering the results inaccurate.

Table 6-4. Gas Inlets Tab Icons

Icon	Description	Explanation
	Solid Green Circle	The cylinder is ok or is using fresh air.
	Solid Yellow Circle	The cylinder is low.
	Solid Red Circle	The cylinder is empty.
	Yellow Circle with a Rex X	The cylinder will expire within 30 days.

⊗	Red Circle with a White X	The cylinder is expired.
❗	Yellow Circle with an exclamation point	The Gas In connection is disabled.

NOTE: If you hover your mouse pointer over one of the icons on the Gas Inlets tab, the status of the cylinder or Gas In connection displays.

6.7. Adding Gas from Industrial Scientific

To add an ISC gas, follow the instructions below.

Step	Instruction
1.	From the Edit Docking Station dialog box, click on the Gas Inlets tab.
2.	Select the tab corresponding to the Gas In connection that you are configuring.
3.	Click the Assign button and select ISC.
4.	The Cylinder Configuration dialog box appears.
5.	Select an Expired Date for the gas. NOTE: You cannot enter a date for the Expired Date that is earlier than today's date.
6.	Select an ISC gas type from the list.
7.	Click OK. The cylinder information is added to the Gas In tab.
8.	Optionally enter a cylinder serial number. (This field may be left blank.) This field is editable when the user is manually adding a cylinder (both for ISC and NON-ISC cylinders). NOTE: Valid characters include any combination of alphanumeric characters, dashes, and period, up to 30 characters in length. Invalid characters include "%", "&", "<", and ">". Leading or trailing spaces will be trimmed from the data entered in this field. Data entered in this field is saved to the Cylinder table in the DS2 Database, but is NOT sent to iNet.
9.	Click OK from the Edit Docking Station dialog box to save your changes. If any of the Gas In tabs contain a disabled configuration, the system displays a Confirm Save Docking Station message. Click Yes to save the IDS information.
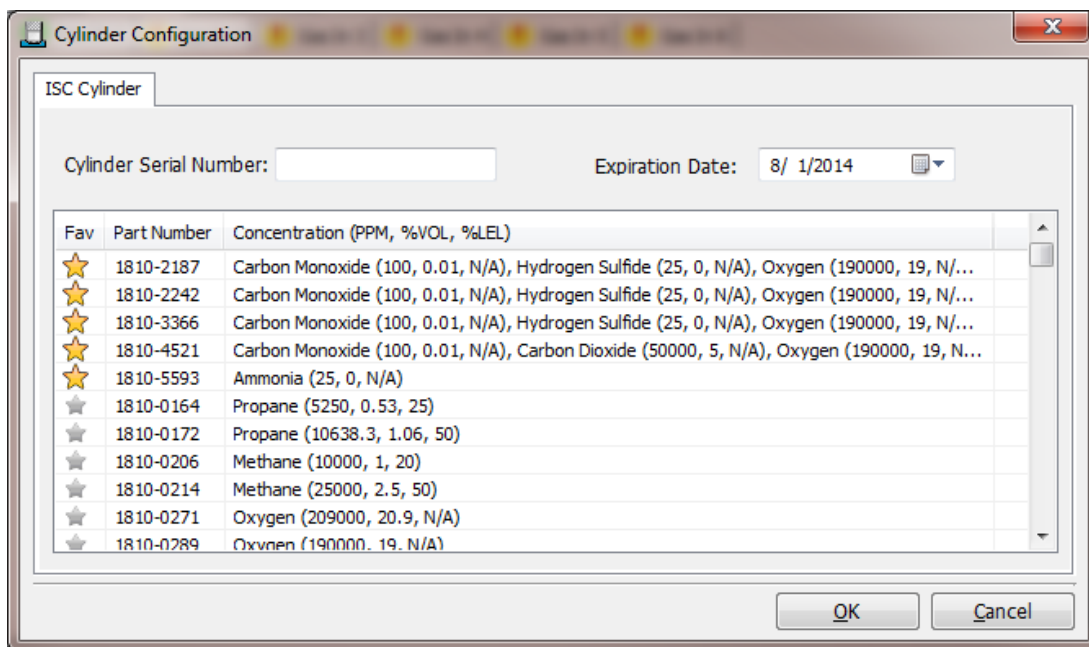
Figure 6-4. Adding Gas from Industrial Scientific

6.8. Adding Gas from a Third Party

To add a gas from a company other than Industrial Scientific, follow the instructions below.

Step	Instruction
1.	From the Edit Docking Station dialog box, click on the Gas Inlets tab.
2.	Select the tab corresponding to the Gas In connection that you are configuring.
3.	Click the Assign button and select non-ISC.
4.	The Cylinder Configuration dialog box appears.
5.	Select an Expired Date for the gas. NOTE: You cannot enter a date for the Expired Date that is earlier than today's date.
6.	Click the Add button. The Concentration dialog box appears.
7.	Select a Gas, and enter a value for PPM, %VOL or %LEL (if applicable). Click OK.
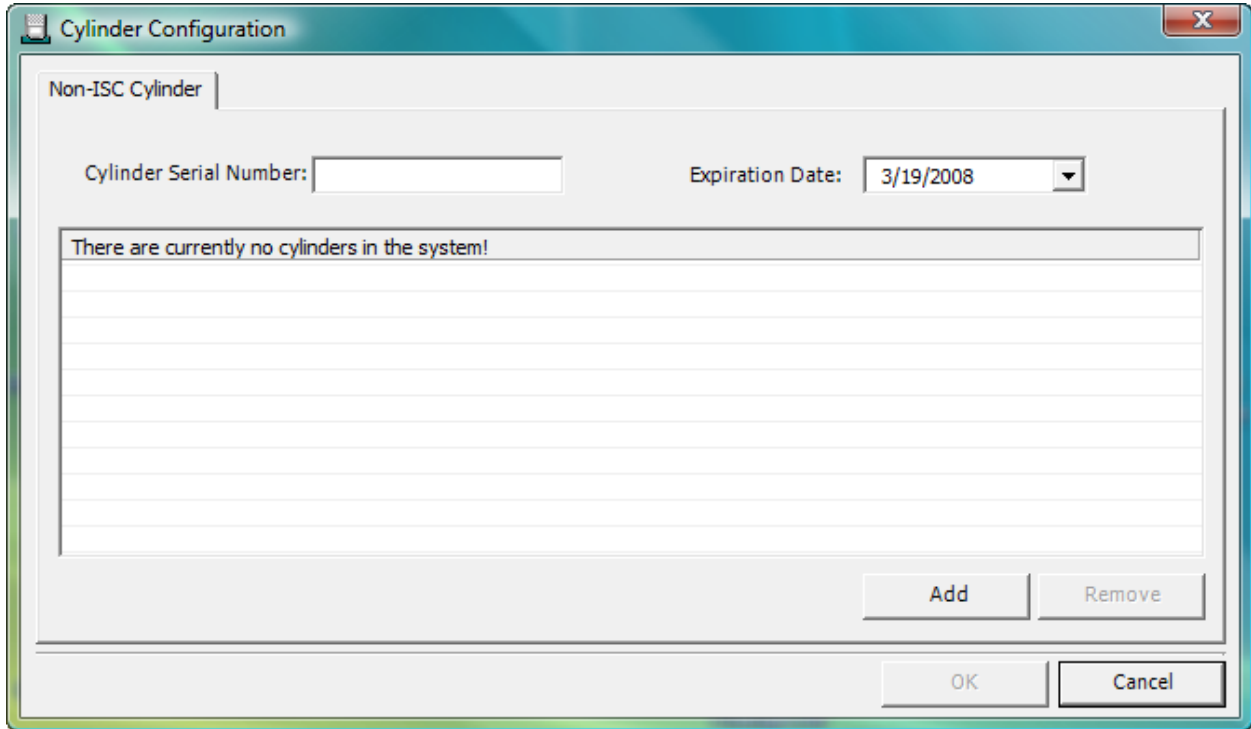
Figure 6-5. Adding Non-ISC Gas

NOTE: When you enter a PPM value, the %VOL value will automatically compute. Similarly, if you enter a value for %VOL, the PPM value will automatically compute. This feature also applies to gases that use a %LEL value. When you enter a value for one of the fields, the other two compute automatically.
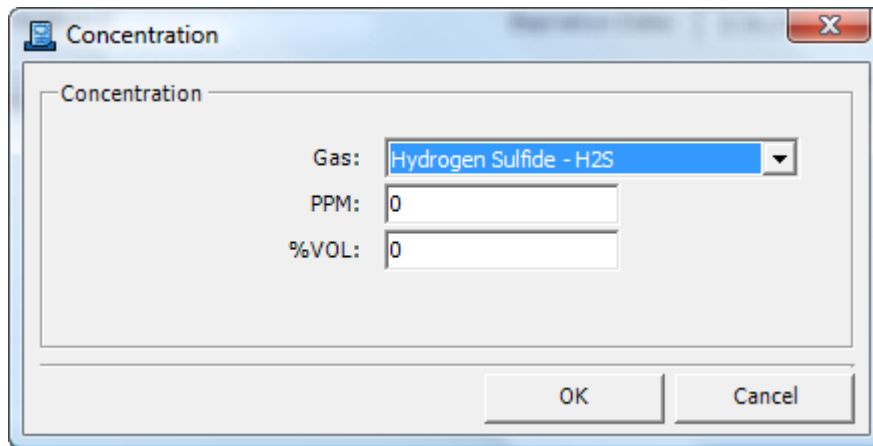
Figure 6-6. The Gas Concentration Dialog Box

NOTE: You cannot enter a value that would compute a %VOL greater than 100%.

Step	Instruction
8.	Repeat steps 6 and 7 to add additional gases, if necessary.
9.	If you want to remove a gas from the list, you can select it, and then click the Remove button. You can select by pressing the CTRL key while clicking on each gas that needs to be removed. *Alternative:* You can also right-click on the gas and select Remove from the context menu.
10.	Once all of the gases have been entered, click OK from the Cylinder Configuration dialog box. The cylinder information is added to the Gas In tab.
11.	Click OK from the Edit Docking Station dialog box to save your changes. If any of the Gas In tabs remains disabled, the system displays a Confirm Save Docking Station message. Click Yes to save the IDS information.

6.9.   Changing Gas Cylinders

When you change a gas cylinder on IDS, there is a specific set of steps that must be followed in a certain order. First, you should disable the Gas In connection in the DSSAC. Then, disconnect the gas cylinder from the IDS, and reconnect the new bottle. Finally, open the DSSAC application and configure the Gas In connection to use the new gas.

The order of operations is important to prevent any calibration errors. For example, if a Gas In connection is not disabled before disconnecting a gas cylinder, there is a chance that the system might attempt a calibration while there is no gas connected. Disabling the Gas In connection prevents this from occurring.

NOTE: If you are using iGas, cylinder changes are automatically detected when you change Smart Cards.   Please refer to section 6.11 Using iGas for additional information about configuring gas cylinders using iGas.

To change gas cylinders on an IDS, follow the instructions listed below.

Step	Instruction
1.	Open the DSSAC application. Click the Docking Stations option in the navigation pane.
2.	Double-click on the IDS for which you are changing gas cylinders. Alternative: You can also right-click on the IDS and select Properties from the context menu. Alternative: You can also select the IDS, and then click the File menu, and select Properties.
3.	Click on the Gas Inlets tab.
4.	Click on the Gas In tab that corresponds to the Gas In connection for which you are changing gas cylinders.

Step	Instruction
5.	Click the Assign button, and select Disabled from the menu. This disables the Gas In connection.
6.	Click OK from the Edit Docking Station dialog box. Click Yes when the Confirm Docking Station Save message appears.
7.	Disconnect the old gas bottle from the IDS. Remove the gas tubing from the fitting on the demand flow regulator. With the gauge facing away from you, unscrew the gas cylinder bottle until it detaches from the regulator.
8.	Connect the new gas bottle to the IDS. See section 6.6 Configuring Gas Cylinders for detailed instructions on connecting gas cylinders.
9.	Return to the DSSAC application. Click the Docking Stations option in the navigation pane.
10.	Double-click on the IDS for which you are changing gas cylinders.
11.	Click on the Gas Inlets tab.
12.	Click on the Gas In tab that corresponds to the Gas In connection for which you are changing gas cylinders.
13.	Click the Assign button, and select ISC or non-ISC from the menu, depending on the gas cylinder you are adding. See the previous sections on using ISC gas or using non-ISC gas for specific procedures for adding ISC or non-ISC cylinders.
14.	Click OK from the Edit Docking Station dialog box.
15.	The Gas In connection is now configured to use the new gas cylinder.

6.10. Supported Sensors

Below are lists of the supported sensor types for each instrument that is compatible with the Docking Station.

Table 6-5. Supported Sensors

Sensor	Tango TX1 Single Gas Monitor	GasBadge Pro Single Gas Monitor	MX6 iBrid Multi-Gas Monitor	Ventis LS Multi-Gas Monitor	Ventis MX4 Multi-Gas Monitor	Ventis Pro4 Multi-Gas Monitor	Ventis Pro5 Multi-Gas Monitor
Ammonia (NH3)		●	●				●
Carbon Dioxide (IR) (CO_2)			●				
Carbon Dioxide/Hydrocarbons (CO_2/HC)							●
Carbon Dioxide/Methane (CO_2/CH_4)							●
Carbon Monoxide (CO)	●	●	●	●	●	●	●
Carbon Monoxide (CO/H2 Low)	●	●	●		●	●	●
Carbon Monoxide and Hydrogen Sulfide (COSH)							●
Chlorine (Cl_2)		●	●				
Chlorine Dioxide (ClO_2)*		●	●				
LEL (Methane)			●	●	●	●	●
LEL (Pentane)			●	●	●	●	●
Hydrocarbon (IR)			●				
Hydrogen (H_2)		●	●				
Hydrogen Chloride (HCl)			●				
Hydrogen Cyanide (HCN)		●	●			●	●
Hydrogen Sulfide (H_2S)	●	●	●	●	●	●	●
Methane 5% vol.			●	●	●	●	●
Methane (IR) (CH4)			●			●	●
Nitrogen Dioxide (NO_2)	●	●	●	●	●	●	●
Nitric Oxide (NO)			●				
Oxygen (O_2)		●	●	●	●	●	●
Phosphine (PH_3)		●	●				
PID (10.6 eV photoionization)			●				
Sulfur Dioxide (SO_2)	●	●	●	●	●	●	●

*NOTE: The DS cannot calibrate or bump test a chlorine dioxide sensor. It can charge an instrument with a Chlorine Dioxide sensor and can download the sensor's data.

6.11. Using iGas

iGas is an optional feature that uses a *Smart Card* to automatically configure gas cylinders. This feature can save time that you would spend manually disabling and then reconfiguring a Gas In connection in the DSSAC each time you change a gas cylinder.

If you are an iGas customer, an iGas Smart Card will be attached, via a plastic ring, to the neck of each of your calibration gas cylinders. The iGas Smart Card contains information about the gas cylinder. When the card is connected to the card reader, the system reads the information about the gas and automatically configures the Gas In connection in the docking station system.

iGas can also be used with an optional pressure switch which detects when the gas pressure in the cylinder is low. iGas sends this information to the Docking Station Server so it is visible in the DSSAC. If you are an iNet customer, this data is also sent to the iNet Network Operations Center so that Industrial Scientific can proactively send new gas cylinders to you.

NOTE: The pressure switch option is standard when you use iGas with iNet.

To connect a cylinder using iGas, follow the instructions listed below.

Step	Instruction
1.	Connect the demand flow regulator to the gas cylinder. With the gauge facing away from you, place the regulator on top of the cylinder and turn the cylinder until it is connected tightly.
2.	Connect one end of the polyurethane gas tubing bundled with the iGas reader cable to the fitting on the demand flow regulator. NOTE: Industrial Scientific recommends that gas tubing should be ester-based polyurethane type 85A. The maximum length for tubing is 3.05 m (10'); however, for Chlorine (Cl2), Ammonia (NH3) and Hydrogen Chloride (HCl) gases, the gas tube length should not exceed .91 m (3').
3.	Disconnect the supplied Luer fitting from the Gas In connection you wish to use.
4.	Connect the Luer fitting to the other end of the tubing, and then attach the fitting to the Gas In connection in the back of the IDS.
5.	Connect the Smart Card reader cable to the iGas Port directly below the Gas In connection to which you connected the gas tubing.
6.	If necessary, connect the Smart Card reader cable to the Smart Card reader.
7.	If you are using the Pressure Switch option, connect the wires from the pressure switch to the pressure switch connection on the right side of the Smart Card reader.
8.	Slide the iGas Smart Card that is attached to the calibration cylinder into the Smart Card reader.
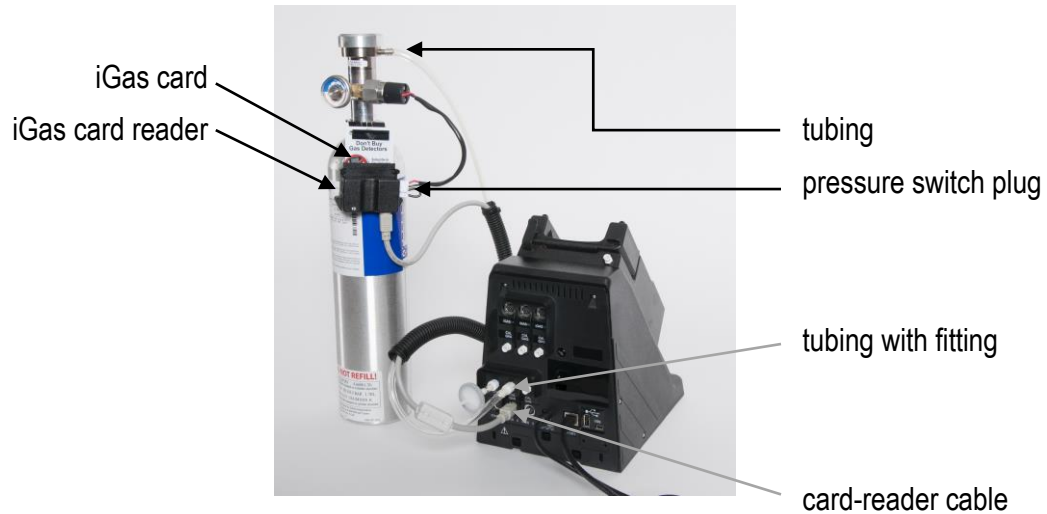
Figure 6-7. iGas Cylinder connected to DSX-L

NOTE: It is important that the gas line is connected before the iGas card so that the system is ready to draw gas after it reads the card.

NOTE: Be sure that the Smart Card is connected to the correct iGas Port. For example, if you have connected the gas line to Gas In # 2, then the Smart Card must be connected to iGas Port #2. If the correct port is not used, the system could use the wrong type of gas for a calibration or bump test, rendering the results inaccurate.

Step	Instruction
9.	The system reads the information about the gas cylinder from the iGas Smart Card and automatically configures the Gas In connection in the DSSAC.
10.	The gas cylinder is ready to use.

NOTE: If you are using iGas, do not edit the cylinder configuration in DSSAC. Doing so could temporarily override the settings configured by iGas, possibly causing the docking station system to use inaccurate information for calibrations or bump tests. If the settings do get overwritten, simply reinsert the iGas Smart Card to reconfigure the gas cylinder.

Port Set 4 (left)
Port Set 5(middle)
Port Set 6 (right)

Port Set 1* (left)
Port Set 2 (middle)
Port Set 3 (right)

*Use port set 1 only for zero-grade-air cylinders (or a fresh air fitting), not for calibration gas.

Power supply port (12 VDC)

USB port (USB) for firmware upgrades only

Network connection (LAN PORT)

Air inlet (ZERO AIR, blue)

Cable port for iGas tubing-and-card-reader assembly

Calibration gas inlet (CAL GAS, white)

Cable port for iGas tubing-and-card-reader assembly

Zero-air port set (left) and

calibration gas port set (right)

Figure 6-1. DSX-L Back Panel (6-PORT UNIT SHOWN)

Note: The port sets 1, 2, and 3 are positioned in the same location on the 3-port unit.

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# # #

Basic Operation

7.1. Introduction

This section describes the features of the Instrument Docking Station (IDS), such as menu options, the LED and alarm signals, and how to force the docking station to perform immediate calibrations and bump tests from the IDS menu. The diagram below shows the front panel of an IDS. This panel contains the LCD screen, the LED lights and the keypad with which you access the menu on the IDS.
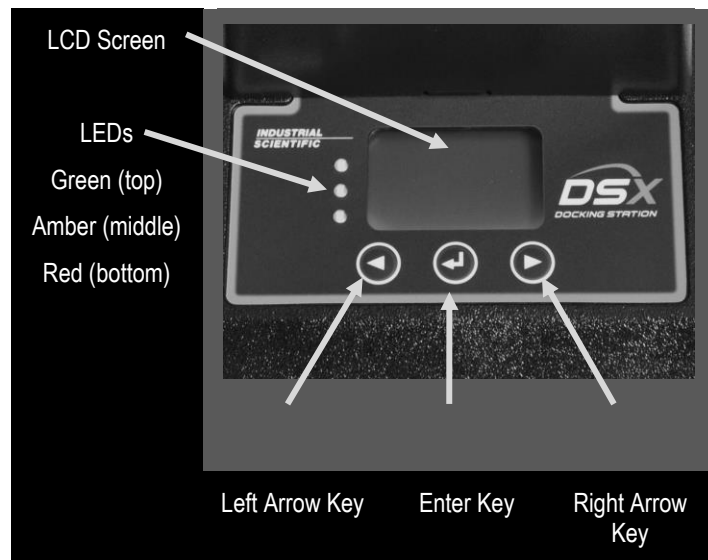
Figure 7-1. Front Panel Components of the DSX-L Docking Station

7.2. Menu Options

The menu on an IDS is used to request actions such as on-demand calibrations or bump tests.

NOTE: The menu cannot be used when the IDS is performing a task (the yellow LED is illuminated), except for when it is charging an instrument's battery.

NOTE: The menu cannot be used if the **Menu Locked** setting for the IDS in DSSAC is set to "Yes." This option can be set in the DSSAC in the **Edit Docking Station** dialog box. See section 6.4 Instrument Docking Station Status and Properties for more information about the Menu Locked setting.

To access the menu on an IDS, follow the instructions listed below.

Step	Instruction
1.	Be sure that the IDS is not performing a task. (The green LED is illuminated, and the LCD panel displays the current date and time.)
2.	Press any of the keys on the IDS keypad. The main menu appears.
3.	Use the ARROW keys on the keypad to navigate the menu. Use the ENTER key to select an option.
4.	The menu options are listed below.

Item	Description
Instrument	If you select this option, the following submenu appears:

Item	Description
Bump Test	Used to force the IDS to perform a bump test. See the Forced Bump Tests section later in this chapter for more information about using the Bump Test menu option.
Calibrate	Used to force the IDS to perform a calibration. See the Forced Calibration section later in this chapter for more information about using the Calibrate menu option.
Download Data	Used to download datalog data to the Docking Station Server. See the Downloading and Clearing Datalog Data section later in this chapter for more information about the Download Data menu option.
Clear Datalog	Used to clear datalog data from the instrument. See the Downloading and Clearing Datalog Data section later in this chapter for more information about the Clear Datalog menu option.
Previous	Returns to the main menu.

NOTE: The Instrument menu is only available when an instrument is docked on the IDS.

Step	Instruction		
	Docking Station	**If you select this option, the following submenu appears:**	
		Item	**Description**
		Set Language	Changes the language used on the LCD display on the IDS. See the Changing Language Settings section later in this chapter for more information about the Set Language menu option.
		Diagnose	Used to run the pressure diagnostic test on the IDS. See the IDS Diagnostics section later in this chapter for more information about the Diagnose menu option.
		Information	Provides information about the IDS, such as serial number, software version and the IP address of the DSS.
		Previous	Returns to the main menu.

NOTE: The IDS menu will exit if no key on the keypad is pressed after 10 seconds. If this occurs, and you wish to re-access the menu, simply press any of the keys on the keypad, provided that the IDS is not actively performing a task (the yellow LED is illuminated), except for when the instrument's battery is charging.

7.3. LED and Alarm Signals

The IDS contains LED lights and an alarm to provide you with feedback about the activities on the IDS. The LEDs (green, yellow, and red) will light alone or in combination depending on the status of the IDS. The status of lit LEDs is explained below.

- Green LED only - Indicates that the IDS is fully charged and available for use.
- Yellow LED only - Indicates that the IDS is busy.
- Green and yellow LEDs - Indicate that the IDS is currently charging.
- Red LED only - Indicates that the IDS is unavailable due to an error or a problem.

NOTE: Never dock or undock an instrument while the yellow LED is illuminated (IDS is busy), except when the instrument battery is charging (both yellow and green LEDs are lit).

The alarm is used to indicate a problem with the IDS. For example, if an instrument is removed from the IDS before a calibration is complete, an alarm will sound.

The LEDs and alarm work in combination with the LCD display to indicate the status of the IDS.

Below is a series of tables that show possible LCD display, LED and alarm combinations when the IDS is in various states.

The following table displays possible feedback when the IDS is on, but no instrument is docked.

Table 7-1. System Feedback (No Instrument Docked)

LCD Display	LED	Alarm	Description
Starting <*type of instrument*>	Yellow	Off	IDS is booting up.
Discovering	Yellow	Off	IDS has just finished booting up and is identifying itself to the Docking Station Server.
Diagnosing	Yellow	Off	Running diagnostics on the IDS
Updating Data	Yellow	Off	Updating the system with new IDS settings
Unavailable	Red	Off	IDS is not functioning properly. Check the DSS error log.
Unavailable Server	Red	Off	IDS cannot connect to the server.

The following table displays possible feedback when the IDS is on, and an instrument is docked.

Table 7-2. System Feedback (Instrument Docked)

LCD Display	LED	Alarm	Description
Registering Instrument	Yellow	Off	The instrument is being registered in the docking station system.
Discovering	Yellow	Off	IDS is detecting the instrument that was just docked.
Calibrating	Yellow	Off	Currently calibrating the instrument.
Testing Instrument	Yellow	Off	Currently performing bump test on the instrument.
Downloading Datalog	Yellow	Off	Downloading datalog data to the DSS.
Downloading Alarm Events	Yellow	Off	Downloading alarm events from the instrument.
Clearing Datalog	Yellow	Off	Clearing datalog data from the instrument.
Diagnosing Instrument	Yellow	Off	Running diagnostic tests on the instrument.
Updating Instrument	Yellow	Off	Updating settings on the instrument.
Current Date and Time Charging	Yellow	Off	Instrument's battery is being charged.
Download Manual Operations	Yellow	Off	Downloads manual calibration and bump test operations performed by user.
Clear Manual Operations	Yellow	Off	Clears all manual operations once downloaded to DSS.

LCD Display	LED	Alarm	Description
Unavailable Instrument	Red	On	There is a problem with the instrument, such as a failed calibration.
Unavailable Gas	Red	On	The IDS could not locate required gas for a bump test or a calibration.
Undocked Instrument	Red	On	An instrument was undocked from the IDS during an event.
Unsupported Software Version	Red	On	The docked instrument's software is not supported for use with the docking station.
Current Date and Time Battery Error	Red	Off	There is a problem with the battery in the docked instrument.
Service Instrument Soon	Red and Green	Off	Instrument needs service by Industrial Scientific. Applies to Tango instrument only.

7.4. Forced Bump Tests

You can force an IDS to run a bump test on an instrument by using the IDS menu. You may wish to do this when you want to run a bump test before the next automatic bump test scheduled for the instrument.

To force a bump test, follow the instructions listed below.

Step	Instruction
1.	Make sure that the IDS is on and that the proper gas cylinder is connected to the docking station and that it is correctly configured in the DSSAC. See the Configuring Gas Cylinders section for more information about configuring gas cylinders.
2.	Dock the instrument in the IDS.
3.	Press any of the keys on the IDS keypad to access the main menu.

NOTE: The menu cannot be used when the IDS is performing an instrument action.

NOTE: The menu cannot be used if the **Menu Locked** setting for the IDS in DSSAC is set to "Yes."

Step	Instruction
4.	Use the ARROW keys on the keypad until Instrument is highlighted.
5.	Press the ENTER key. The Instrument menu appears.
6.	Use the ARROW keys on the keypad to select Bump Test. Press the ENTER key.

Step	Instruction
7.	The LCD displays a confirmation prompt: "Are you sure?" Use the ARROW keys on the keypad to highlight Yes and then press the ENTER key. If you select No, the LCD returns to the main menu.
8.	The IDS begins performing the bump test. The LCD displays "Testing Instrument." The yellow LED is illuminated.
9.	When the bump test is complete, the LCD returns to the main menu, and the green LED is illuminated.

NOTE: In the event of a failed sensor (CL2, HCL, or NH3), the docking station ignores any large reading that are above the sensor's maximum reading. In addition, the docking station ignores any negative readings whose absolute value is larger than the sensor's maximum reading.

NOTE: If the instrument fails the bump test, the IDS will perform a calibration. If the calibration fails, then the red LED illuminates and the IDS sounds an alarm. If the oxygen sensor fails the bump test, the unit will display an "Unavailable Instrument" message.

7.5. Calibration

7.5.1. Forced Calibrations

You can force an IDS to calibrate an instrument by using the IDS menu. You may wish to do this when you want to perform a calibration prior to the next calibration scheduled for the instrument.

To force a calibration, follow the instructions listed below.

Step	Instruction
1.	Make sure that the IDS is on and that the proper gas cylinder is connected to the IDS and that it is correctly configured in the DSSAC. See section 6.6 Configuring Gas Cylinders for more information about configuring gas cylinders.
2.	Dock the instrument in the IDS.
3.	Press any of the keys on the IDS keypad to access the main menu.

NOTE: The menu cannot be used when the IDS is performing an instrument action.

NOTE: The menu cannot be used if the **Menu Locked** setting for the IDS in DSSAC is set to "Yes."

Step	Instruction
4.	Use the ARROW keys on the keypad until Instrument is highlighted.
5.	Press the ENTER key. The Instrument menu appears.
6.	Use the ARROW keys on the keypad to highlight Calibrate. Press the ENTER key.
7.	The LCD displays a confirmation prompt: "Are you sure?" Use the ARROW keys on the keypad to highlight Yes, and then press the ENTER key. If you select No, the LCD returns to the main menu.
8.	The IDS begins performing the calibration. The LCD displays "Calibrating." The yellow LED is illuminated.
9.	When the calibration is complete, the LCD returns to the main menu and the green LED is illuminated.

NOTE: If the instrument fails the calibration, the red LED illuminates and the docking station sounds an alarm.

7.5.2. O2 Sensor Failures During Calibrations

If an O2 sensor fails a DSX bump test in any docked instrument, the IDS will display the red light, and the message "Unavailable instrument", and will beep. Underneath the "Unavailable Instrument" message, the IDS will display "O2 Bump Failure" in parenthesis.

```
    Unavailable
     Instrument
  (02 Bump Failure)


  SN: 123456-001
```

Figure 7-2. Error Screen after O2 Sensor Failure

An automatic calibration will not take place if an O2 sensor fails a bump test, regardless of what other sensors are installed. In addition, most forced events will also not be allowed. This prevents the user from simply forcing a calibration, clearing the error, and thinking all is well.

A forced Bump test will be the only type of forced event which is allowed in this case. All other forced events will simply result in the same "unavailable instrument" message.

NOTE: The only way to clear this error is to either replace the sensor, or to force a bump test and have it pass.

7.6. Download and Clearing Datalog Data

You can force an IDS to download datalog data from an instrument to the Docking Station Server. When you download datalog data from an instrument, **the instrument's datalog memory is also cleared**.

You can also choose to clear datalog data on an instrument without downloading it to the system.

7.6.1. Forced Datalog Download

To download datalog data, follow the instructions listed below.

Step	Instruction
1.	Make sure that the IDS is on.
2.	Dock the instrument in the IDS.
3.	Press any of the keys on the IDS keypad to access the main menu.

NOTE: The menu cannot be used when the IDS is performing an instrument action.

NOTE: The menu cannot be used if the **Menu Locked** setting for the IDS in DSSAC is set to "Yes."

NOTE: If two sensors are installed in the Tango TX1 when the data are logged, DS2 will download data for three sensors. Data from the installed sensors are logged and downloaded as sensor 1 and sensor 2 data. Data that are logged and downloaded as sensor 3 (or VIRTUAL) are algorithm-calculated values that are based on sensor 1 and sensor 2 data. DSSAC displays only the VIRTUAL data.

 If only one sensor is installed or working when the data are logged, the downloaded and DSSAC-displayed data will contain only information for that sensor.

Step	Instruction
4.	Use the ARROW keys on the keypad until Instrument is highlighted.
5.	Press the ENTER key. The Instrument menu appears.
6.	Use the ARROW keys on the keypad to select Download Datalog. Press the ENTER key.
7.	The LCD displays a confirmation prompt: "Are you sure?" Use the ARROW keys on the keypad to highlight Yes, and then press the ENTER key. If you select No, the LCD returns to the main menu.
8.	The IDS begins downloading the datalog data. The LCD displays "Downloading Datalog." The yellow LED is illuminated. NOTE: The instrument's datalog memory is also cleared. The LCD displays "Clearing Datalog" when the datalog data is being cleared.

Step	Instruction
9.	When the datalog download is complete, the LCD returns to the main menu and the green LED is illuminated.

7.6.2. Clearing Datalog Data

To clear datalog data from an instrument's memory without downloading it to the system, follow the instructions listed below.

Step	Instruction
1.	Make sure that the IDS is on.
2.	Dock the instrument in the IDS.
3.	Press any of the keys on the IDS keypad to access the main menu.

NOTE: The menu cannot be used when the IDS is performing an instrument action.

NOTE: The menu cannot be used if the **Menu Locked** setting for the IDS in DSSAC is set to "Yes."

Step	Instruction
4.	Use the ARROW keys on the keypad until Instrument is highlighted.
5.	Press the ENTER key. The Instrument menu appears.
6.	Use the ARROW keys on the keypad to select Clear Datalog. Press the ENTER key.
7.	The LCD displays a confirmation prompt: "Are you sure?" Use the ARROW keys on the keypad to highlight Yes, and then press the ENTER key. If you select No, the LCD returns to the main menu.
8.	The IDS clears the datalog data from the instrument's memory. The LCD displays "Clearing Datalog." The yellow LED is illuminated.
9.	When the datalog data has been cleared, the LCD returns to the main menu, and the green LED is illuminated.

7.7. IDS Diagnostics

You can manually run a pressure diagnostics test for an IDS using the menu on the IDS LCD display. This feature can be used to reset the IDS to an available state after a leak has been fixed.

For example, if a fitting is not physically connected, the system-automated pressure diagnostics test will detect a leak. After the test fails, the LCD on the IDS will display "Unavailable Leaking." Once the problem has been corrected, you can manually run the pressure diagnostics test to remove the error state, and allow the IDS to be used.

To run IDS Diagnostics, follow the instructions listed below.

Step	Instruction
1.	Press any of the keys on the IDS keypad to access the main menu.

NOTE: The menu cannot be used if the **Menu Locked** setting for the IDS in DSSAC is set to "Yes."

Step	Instruction
2.	Use the ARROW keys on the keypad until Docking Station is highlighted.
3.	Press the ENTER key. The Docking Station menu appears.
4.	Use the ARROW keys on the keypad to select Diagnose. Press the ENTER key.
5.	The LCD displays a confirmation prompt: "Are you sure?" Select Yes, and press the ENTER key.
6.	The LCD screen displays "Diagnosing." If the leak issue has been corrected, the LCD screen displays the current date and time. The green LED is illuminated.
7.	If the diagnostic test fails again, contact Industrial Scientific Corporation for service. See section 13.7 Industrial Scientific Support Services for contact information.

7.8.   Instrument Docking Station Operating Guidelines

Use the following safety guidelines to help to ensure your own personal safety and to help protect your Instrument Docking Station and working environment from potential damage.

CAUTION: Compressed gas cylinders and their contents may present specific hazards to the user. Use only in a well-ventilated area. Use only in accordance with the instructions and warnings as marked on the cylinder and the appropriate Material Safety Data Sheet.

7.8.1. General

A Instrument Docking Station (IDS) is a sensitive piece of equipment that should be treated with care. It should be handled in the same way you would handle a laptop computer. General guidelines are listed below.

- To reduce the risk of fire or electric shock, do not expose the IDS to rain or moisture.
- Do not operate an IDS with any cover(s) removed.
- Avoid extremes in temperature. Typical operating temperature should be between -5º C (23º F) and 40º C (122º F).
- Do not drop the unit.
- The IDS should be serviced only by qualified service personnel. Contact Industrial Scientific Corporation for examination, repair, or adjustment.

- To help prevent electric shock, plug the IDS power cable into properly grounded electrical outlets. These cables are equipped with 3-prong plugs to help to ensure proper grounding. Do not use adapter plugs or remove the grounding prong from a cable. If you must use an extension cable, use a 3-wire cable with properly grounded plugs.
- Do not use corrosive chemicals or vapors near the IDS.
- Do not immerse the cord or plug in water.
- To avoid the potential hazard of electric shock, do not use a IDS during an electrical storm without proper protection.
- To avoid the potential hazard of electric shock, do not connect or disconnect any cables to or from the IDS during an electrical storm.
- To avoid possible damage to the system board, wait 5 seconds after turning off the IDS before restarting.
- To avoid shorting out an IDS when disconnecting a network cable, first unplug the cable from the LAN Port on the back of the IDS, and then from the network jack. When reconnecting a network cable to a IDS, first plug the cable into the network jack, and then into the LAN Port on the back of the IDS.
- To help protect an IDS from sudden, transient increases and decreases in electrical power, use a surge suppressor, line conditioner, or uninterruptible power supply (UPS).
- Be sure nothing rests on an IDS's cables and that the cables are not located where they can be stepped on, cut, or tripped over.
- Do not push any objects into the openings of an IDS. Doing so can cause fire or electric shock by shorting out interior components.
- Keep IDSs away from radiators and heat sources. Do not block cooling vents.   Avoid placing loose papers underneath an IDS; do not place an IDS in a closed-in wall unit, or on a bed, sofa, or rug.
- An IDS is equipped with a fixed-voltage power supply. The IDS will operate at only one voltage (see the regulatory label on the outside of the IDS for its operating voltage).

7.8.2. Cleaning

Before you clean your IDS, disconnect the power cord from the electrical outlet. Clean your IDS with a soft cloth dampened with water. Do not use liquid or aerosol cleaners, which may contain flammable substances. Do not spray water directly onto the unit.

7.8.3 Explanation of Symbols Used on Unit

Symbol	Description
---	Direct Current
∼	Alternating Current
⏚	Protective Conductor Terminal
⚠	Caution (refer to accompanying documents)

7.8.4 Specifications

Physical Specifications

Instruments supported	GasBadge Pro, MX6 iBrid, Tango TX1, Ventis MX4, or Ventis LS
Dimensions	GasBadge Pro, Tango TX1: H: 22.66 cm (8.92 "); W: 16.89 cm (6.65 "); D: 27.31 cm (10.75 ") Ventis Pro4, Ventis Pro5, Ventis MX4, Ventis LS: H: 24.97 cm (9.83 "); W: 16.89 cm (6.65 "); D: 27.31 cm (10.75 ") MX6 iBrid: H: 25.3 cm (9.96 "); W: 16.89 cm (6.65 "); D: 27.31 cm (10.75 ")
Gas and fresh-air intake ports	3-port configuration: two gas; one fresh-air 6-port configuration: five gas; one fresh-air
Pump flow rate	1.2 SCFH (550 mL/min)
Communication	10/100 Ethernet support, RJ45 Cat5 connection (or greater); for longer cables, 14−110 m [46–360 '] use a solid conductor shielded twisted pair cable. USB port for data storage device or printer (for use with DSX Standalone Mode only).
Display	128 x 64 dot matrix LCD Language options: English, French, German, Portuguese (Brazil), and Spanish

Performance Specifications

Operating temperature range	0–50 ºC (32–122 ºF)
Operating humidity range	0–80% relative humidity (RH) up to 30 ºC (86 ºF), decreasing linearly to 50% RH at 50 ºC (122 ºF)
External power supply ratings	Supply voltage: 100–240 VAC/12 VDC Frequency range: 50–60 Hz Current rating: 5A

7.8.5. Regulatory Notices

Electromagnetic Interference (EMI) is any signal or emission, radiated in free space or conducted along power or signal leads, that endangers the functioning of radio navigation or other safety service or seriously degrades, obstructs, or repeatedly interrupts a licensed radio communications service. Radio communications services include but are not limited to AM/FM commercial broadcast, television, cellular services, radar, air-traffic control, pager, and Personal Communication Services (PCS). These licensed services, along with unintentional radiators such as digital devices, including computer systems, contribute to the electromagnetic environment.

7.8.6. Wiring Requirements

Voltage used must be the same as specified on this device (100/240 VAC) or 12VDC. Using a higher voltage is dangerous and may result in a fire or other accident causing device damage. Using a lower voltage will cause unexpected results. Industrial Scientific is NOT responsible for damage resulting from improper use of an IDS.

# # #

Event Scheduling

8.1. Introduction

An event is an activity that automatically occurs in the docking station. You determine when these events run by scheduling them in the DSSAC.

NOTE: Only users assigned to the Systems Administrator role can edit and add events. Users assigned to the Technician role may view events, but not change them.

The types of events that you can schedule at particular dates and/or times are:

- **Calibration -** Used to automatically calibrate an instrument.
- **Alarm Events Download -** Used to automatically downloading alarm events from an instrument
- **Bump Test -** Used to automatically perform bump tests on an instrument.
- **Bump Test (Tango) –** Applies only to Tango instruments. Bump Test (Tango) and "Bump Test" global events have no effect on each other.
- **Datalog Download -** Used to download datalog data from an instrument.
- **Diagnostics -** Used to run diagnostic tests on an instrument or IDS. The results of these tests are sent to the iNet Network Operations Center for analysis.
- **Download Manual Operations -** Downloads manual calibration and bump test operations performed by user.

NOTE: There are also two events that occur automatically in the system. These events are **Settings Update** and **Settings Read**. "Settings Update" controls the transfer of option information from the server to instruments and IDSs. "Settings Read" handles registration of new Docking Stations, instruments, and components. These events occur daily for IDSs, and upon docking for instruments.

NOTE: If two sensors are installed in the Tango TX1 when the data are logged, DS2 will download data for three sensors. Data from the installed sensors are logged and downloaded as sensor 1 and sensor 2. Data that are logged and downloaded as sensor 3 (or VIRTUAL) are algorithm-calculated values that are based on sensor 1 and sensor 2 data. DSSAC displays only the VIRTUAL data.

If only one sensor is installed or working when the data are logged, the downloaded and DSSAC- displayed data will contain only information for that sensor.

There are two types of events.

- **Global -**These events are built into the system, and apply to all IDSs or instruments that are configured in your docking station network. There are Global events for both IDSs and instruments.

- **Special -**These events are created by an administrator, and apply only to the instruments designated to use them. Special events override Global events. For example, if an instrument is configured to use a Special calibration event, it calibrates according to the schedule set in the Special event, and not the Global calibration event. The Global calibration event is ignored for that instrument.

Events can be run at the following intervals.

- **Upon Docking -**The event will run each time that an instrument is placed on the IDS. This interval only applies to instrument events.

- **Daily -**The event runs each day at a specified time, or whenever the IDS or instrument is available that day.

- **Weekly -** The event runs on the specified day of the week at a specified time, or whenever the IDS or instrument is available on the specified day or thereafter.

- **Monthly -**The event runs on the specified day of the month at a specified time, or whenever the IDS or instrument is available on the specified day or thereafter.

- **Quarterly -** The event runs once each 90 days, or whenever the IDS or instrument is available on the specified day or thereafter.

NOTE: If an IDS or instrument is not available at the scheduled time, the event will run for that IDS or instrument the next time it is available. For example, if an instrument event is set up to run weekly on Tuesdays, and an instrument is not docked until Wednesday, the event will run on Wednesday for that instrument.

8.2. Global Events

Global events apply to all IDSs or instruments in your docking station network. You cannot add or remove global events. However, you can schedule global events to run at a time that you specify.

8.2.1. Global Instrument Docking Station Events

There is one global Instrument Docking Station event built-in to the system:

- Diagnostics.

By default, the Diagnostics IDS event is set to run Daily at midnight.

NOTE: You cannot disable the IDS global event.

To view or edit the global IDS event, follow the instructions listed below.

Step	Instruction
1.	Open the DSSAC application.
2.	Expand the Events option in the navigation pane, if necessary.
3.	Expand the Docking Station option that is underneath Events, if necessary.
4.	Click on Global. The IDS global event appears in the contents pane.
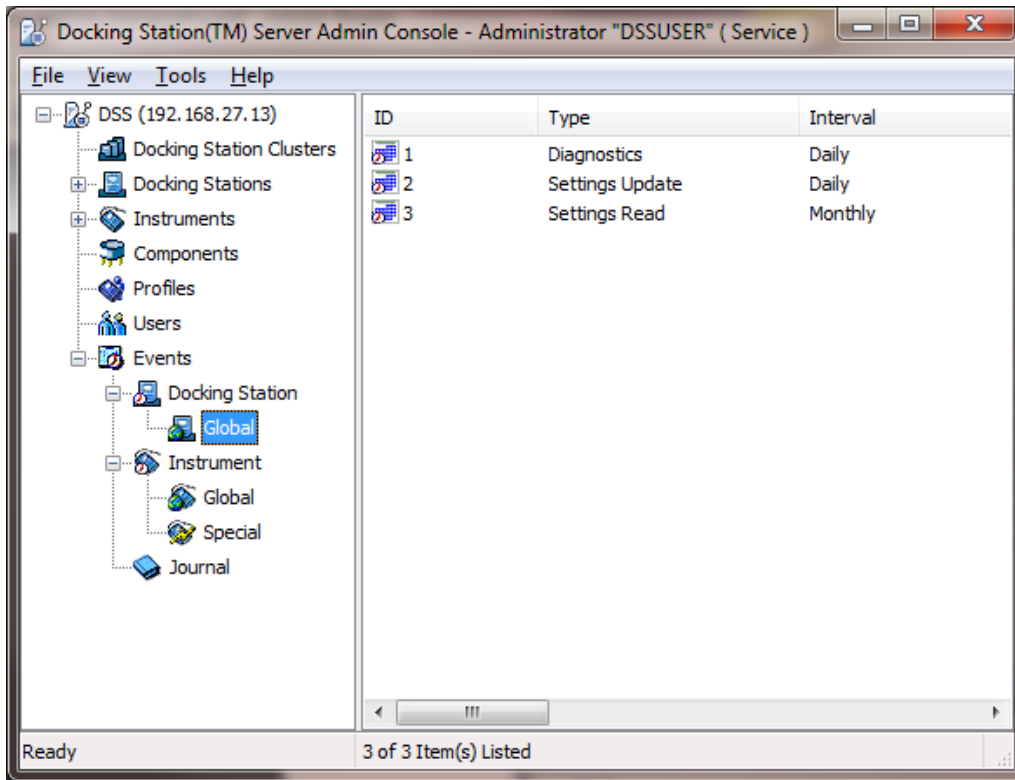
Figure 8-1. IDS Global Event Screen

Step	Instruction
5.	Double-click on the Diagnostics event. Alternative: You can also click on the File menu and select Properties. Alternative: You can also right-click on the event and select Properties from the context menu.
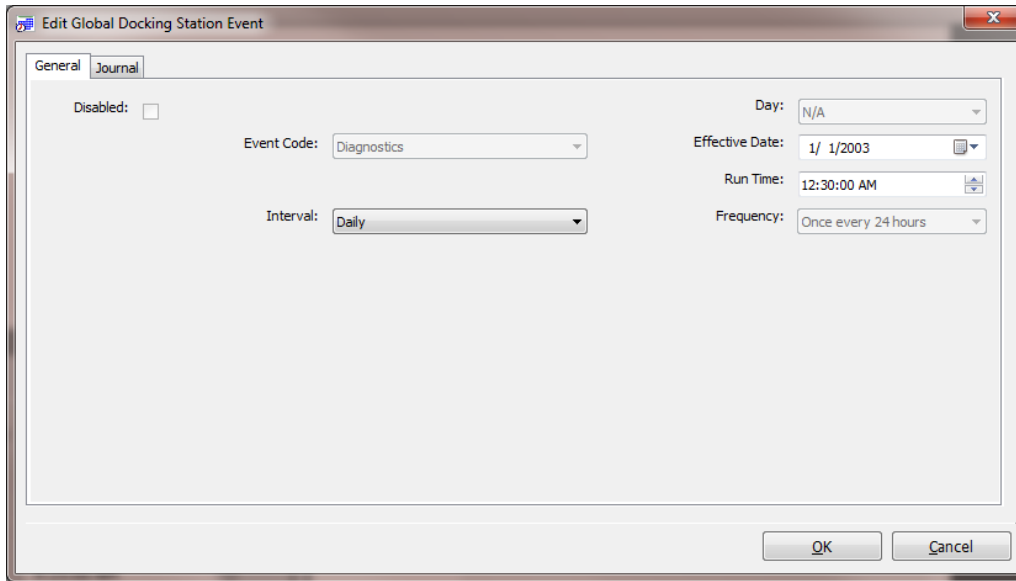
Figure 8-2. IDS Global Event Screen

Step	Instruction
6.	The Edit Docking Station Event dialog box appears. It contains two tabs: • General - Contains information about the event and when it is scheduled to run. • Journal - Contains records of the last time that the event ran for various IDSs. See Chapter 9 for more information about the Journal.

NOTE: Only users assigned to the Systems Administrator role can edit events. Users assigned to the Technician role may view events, but not change them.

NOTE: Global IDS events cannot be disabled.

Step	Instruction
7.	From the General tab, select an Interval. The choices are: • Daily -If you select "Daily," you must also specify an Effective Date to indicate when the event should start running. • Weekly -If you select "Weekly," you must also select a Day (e.g., Sunday, Monday, etc.) to indicate the day of the week on which the event should run, and specify an Effective Date to indicate when the event should start running. • Monthly -If you select "Monthly," you must also select a Day (e.g., 1st, 2nd, 3rd . 31st) to indicate the day of the month on which the event should run, and specify an Effective Date to indicate when the event should start running. • Quarterly - The event runs once each 90 days, or whenever the IDS or instrument is available on the specified day or thereafter.

NOTE: If you select the 30th or 31st as the Day, the event runs on the last day of the month for months that do not have 30 or 31 days, e.g., the event would run on February 28th.

Step	Instruction
8.	Click OK to save the changes to the Event.

8.2.2. Global Instrument Events

The global instrument events that are built-in to the system are:

- Bump Test
- Bump Test (Tango)
- Diagnostics
- Calibration
- Alarms
- Download Datalog
- Download Manual Operations

See Table 8-1 for the default settings for each of these events.

NOTE: You can disable instrument global events that you do not want to run.

NOTE: The "Bump Test (Tango)" global event applies only to Tango instruments. Bump Test (Tango) and "Bump Test" global events have no effect on each other.

To view or edit a global Instrument Event, follow the instructions listed below.

Step	Instruction
1.	Open the DSSAC application.
2.	Expand the Events option in the navigation pane, if necessary.
3.	Expand the Instrument option that is underneath Events, if necessary.
4.	Click on Global. The instrument global events appear in the contents pane. The contents pane displays the Event ID, the Type of event, and the current scheduled Interval. If the Event ID column contains an icon with a red line through it, the event is disabled.
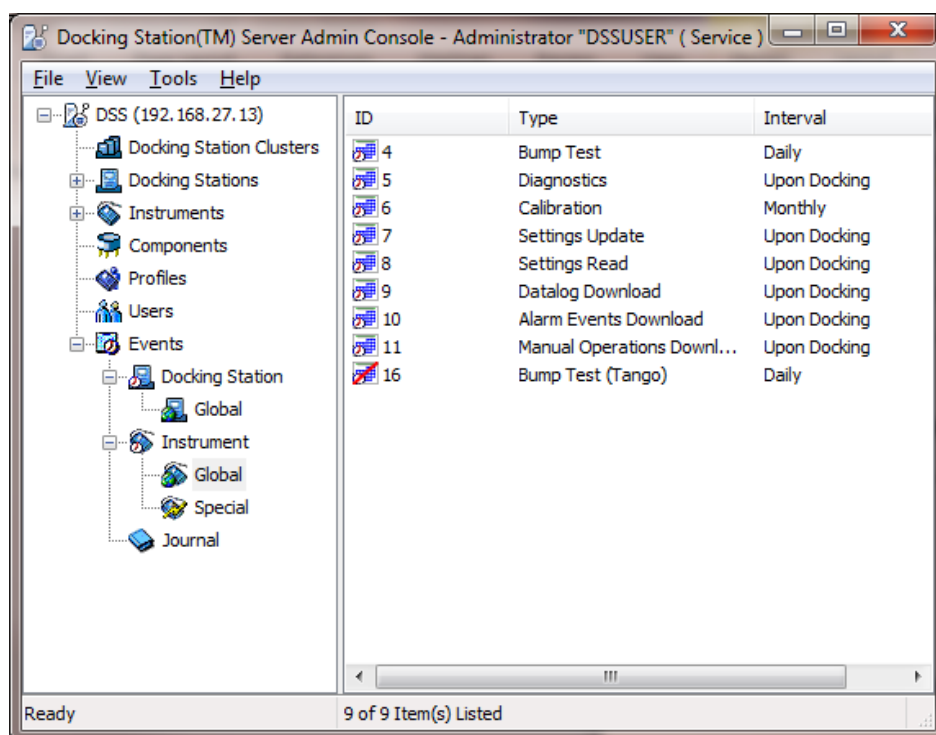
Figure 8-3. Instrument Global Events Screen

Step	Instruction
5.	Double-click on the Event whose settings you would like to view or edit.
	Alternative: You can also click on the File menu and select Properties.
	Alternative: You can also right-click on the event and select Properties from the context menu.
6.	The Edit Instrument Global Event dialog box appears. It contains two tabs.
	• General Contains information about the event and when it is scheduled to run.
	• Journal Contains records of the last time that the event ran for various instruments. See Chapter 9 for more information about the Journal.
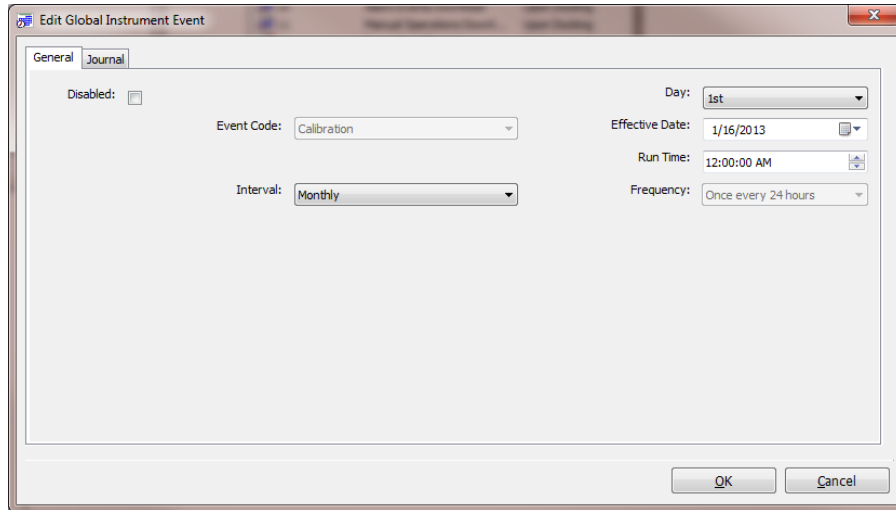
Figure 8-4. Edit Global Instrument Event Dialog Box

NOTE: Only users assigned to the Systems Administrator role can edit events. Users assigned to the Technician role may view events, but not change them.

Step	Instruction
7.	From the General tab, select an Interval. The choices are:
	• Upon Docking - If you select "Upon Docking," you must also specify an Effective Date when the event should start running. The event runs each time that an instrument is docked in the IDS.
	• Daily - If you select "Daily," you must also specify an Effective Date to indicate when the event should start running and a Run Time to indicate the time at which the event should run. Daily calibration and bump test events may be set to run up to 4-times per day at intervals of 6 hours, 8 hours, 12 hours and 24 hours.
	• Weekly - If you select "Weekly," you must also select a Day (e.g., Sunday, Monday, etc.) to indicate the day of the week on which the event should run, and specify an Effective Date to indicate when the event should start running and a Run Time to indicate the time at which the event should run.
	• Monthly - If you select "Monthly," you must also select a Day (e.g., 1st, 2nd, 3rd . 31st) to indicate the day of the month on which the event should run, and specify an Effective Date to indicate when the event should start running and a Run Time to indicate the time at which the event should run.
	• Quarterly **-** The event runs once each 90 days, or whenever the IDS or instrument is available on the specified day or thereafter.

NOTE: If you select the 30th or 31st as the **Day**, the event runs on the last day of the month for months that do not have 30 or 31 days, e.g., the event would run on February 28th.

Step	Instruction
8.	If you do not want the event to run, click in the checkbox next to the Disabled option. If the Event is already disabled, you can also enable the event by deselecting the checkbox next to the Disabled option.
9.	Click OK to save the changes to the Event.

Table 8-1. Default Settings for Global Instrument Events

Event	Default Settings	
Bump Test	Interval:	Daily, 24 hours
	Effective Date:	1/1/03
	Run Time:	12:00 AM
Bump Test (Tango)	Interval:	Daily, 24 hours
	Effective Date:	4/10/33
	Run Time:	12:00 AM
Diagnostics	Interval:	Daily, 24 hours
	Effective Date:	1/1/03
	Run Time:	12:00 AM
Calibration	Interval:	Monthly
	Day:	1st
	Effective Date:	1/1/03
	Run Time:	12:00 AM
Download Datalog	Interval:	Upon Docking
	Effective Date:	1/1/03
Alarms	Interval:	Upon Docking
	Run Time:	After Download Datalog
	Effective Date:	1/1/03
Download Manual Operations	Interval:	Upon Docking
	Run Time:	12:00 AM
	Effective Date:	1/1/03

8.3. Special Events

Special Events are custom events that you can assign to specific instruments. If an instrument is assigned to a Special Event, the Global Event no longer applies to that instrument. You may wish to setup special events to handle groups of instruments that have special maintenance requirements. For example, you may have a group of heavily used instruments that you wish to calibrate weekly instead of monthly, as specified in the global event.

You can add the following types of Special Events:

- Bump Test
- Bump Test (Tango)
- Diagnostics
- Calibration
- Alarms
- Download datalog
- Download Manual Operations

- **NOTE:** The "Bump Test (Tango)" special event is system created. It applies to any Tango instrument that is in single-sensor mode or has two installed sensors and one is in calibration fail. When any Tango TX1 instrument is in either state, DSS will override any other bump test event for the unit.

To add a Special Event for an instrument, follow the instructions listed below.

Step	Instruction
1.	Open the DSSAC application.
2.	Expand the Events option in the navigation pane, if necessary.
3.	Expand the Instrument option that is underneath Events, if necessary.
4.	Click on Special. Any instrument Special Events that have been previously added appear in the contents pane. The contents pane displays the Event ID, the Type of event, the current scheduled Interval, and the Event Name. If the Event ID column contains an icon with a red line through it, the event is disabled.
5.	Click the File menu and select Add. Alternative: You can also right click on the Special option in the navigation pane and select Add from the context menu.

NOTE: Only users assigned to the Systems Administrator role can add special events. Users assigned to the Technician role may view events, but not change them.

Step	Instruction
6.	The Add Instrument Special Event dialog box appears.
7.	Select an Event Owner from the drop down list of users. Only the event owner or the system administrator DSSUSER will be able to edit the special event.

Step	Instruction
8.	Select an Event Code. The choices are: • Bump Test • Bump Test (Tango) • Diagnostics • Calibration • Alarms • Download Datalog • Download Manual Operations
9.	Select an Interval. The choices are: • <u>Upon Docking</u> - If you select "Upon Docking," you must also specify and Effective Date when the event should start running. The event runs each time that an instrument is docked in the IDS. • <u>Daily</u> - If you select "Daily," you must also specify an Effective Date to indicate when the event should start running and a Run Time to indicate the time at which the event should run. Daily calibration and bump test events may be set to run up to 4-times per day on intervals of every 6 hours, 8 hours, 12 hours or 24 hours. • <u>Weekly</u> - If you select "Weekly," you must also select a Day (e.g., Sunday, Monday, etc.) to indicate the day of the week on which the event should run, and specify an Effective Date to indicate when the event should start running and a Run Time to indicate the time at which the event should run. • <u>Monthly</u> - If you select "Monthly," you must also select a Day (e.g., 1st, 2nd, 3rd, …, 31st) to indicate the day of the month on which the event should run, and specify an Effective Date to indicate when the event should start running and a Run Time to indicate the time at which the event should run. • Quarterly **-** The event runs once each 90 days, or whenever the IDS or instrument is available on the specified day or thereafter.

Figure 8-5. Add Special Instrument Event Dialog Box

NOTE: If you select the 30th or 31st as the **Day**, the event runs on the last day of the month for months that do not have 30 or 31 days, e.g., the event would run on February 28th.

Step	Instruction
10.	Enter a name for the event in the Event Name field.
11.	In the Instruments field, select the instrument to which the event should apply. You can select multiple instruments by pressing the CTRL key on your keyboard while clicking on each instrument.
12.	Click the Add button. The instruments are added to the Instruments Included in Event box. To remove an instrument from a special event, select the serial number of the instrument that should be removed from the Instruments Included in Event list, and click the Remove button.
13.	Click OK to save the event. The event is added to the list of Special Events in the contents pane.

NOTE: The next time that you view the special event, the **Journal** tab will be visible. The Journal tab contains records of the last time that the event ran for various instruments. See Chapter 9 for more information about the Journal.

8.4. Defaults for Scheduled Events

For new DSS installs, the table below shall be the default schedules for all events. For upgrades to previous versions of DSS, the default schedule is not altered by the installer. For upgrades, all current event schedules remain unmodified by the installer. See the table below.

Table 8-2. Defaults for Scheduled Events

Event	Priority	Schedule	Time	Enabled
IDS Settings Read	1	Daily	12:00am	Yes
IDS Settings Update	2	Daily	12:00am	Yes
IDS Diagnostics	3	Daily	12:30am	Yes
Instrument Settings Read	4	Upon Docking	1:00am	Yes
Instrument Settings Update	5	Upon Docking	1:00am	Yes
Instrument Diagnostics	6	Upon Docking	1:30am	Yes
Manual Operations Download	7	Upon Docking	1:00 am	Yes
Bump Test	8	Daily	2:00am	Yes
Calibration	9	Monthly	2:00am	Yes
Datalog Download	10	Upon Docking	2:30am	Yes
Alarm Events Download	11	Upon Docking	3:00am	Yes

# # #

Chapter 9

The Journal Feature

9.1. Introduction

The Journal provides a history of when the Global and Special events ran in your docking station network. The Journal records events that ran successfully and unsuccessfully.

The Journal tracks only the last occurrence of each event for each IDS or instrument. When an event occurs again for an instrument or IDS, the old entry is overwritten. For example, if Instrument X was last calibrated on 8/01/06, the Journal contains this data. When the next calibration occurs on 9/01/13, the journal entry for 8/01/14 is replaced with the new entry for 9/01/13.

Journal entries are overwritten based upon the event's ID. It is possible to see multiple journal entries for the same type of event for an instrument if it occurred as a result of different events. For example, if an instrument calibrates under the global event, and then it is assigned to a special calibration event, journal entries will exist for both the global event and the special event.

9.2. Viewing Journal Entries

You can view Journal entries for your entire docking station network or for an individual event. Journal entries are created for all of the global and special events, and the two system events, "Settings Update" and "Settings Read." To view all Journal entries, follow the instructions listed below.

Step	Instruction
1.	Open the DSSAC application.
2.	Expand the Events option in the navigation pane, if necessary.
3.	Click on Journal.
4.	The Journal entries appear in the contents pane. For each entry, the following information displays: the Date/Time at which the event occurred, the Serial Number of the instrument or IDS for which the event ran, and the Type of event (e.g., Bump Test, Calibration, Diagnostics) that ran.

NOTE: Journal entries that appear in blue text represent instruments that are currently docked, or IDSs that are currently running on the network.

Step	Instruction
5.	Double-click on the journal entry to view detailed information about the event that occurred. The Event Journal Details dialog box appears.
6.	Click OK to close the Event Journal Details dialog box.
7.	You can sort the Journal entries by clicking on a column header in the contents pane.
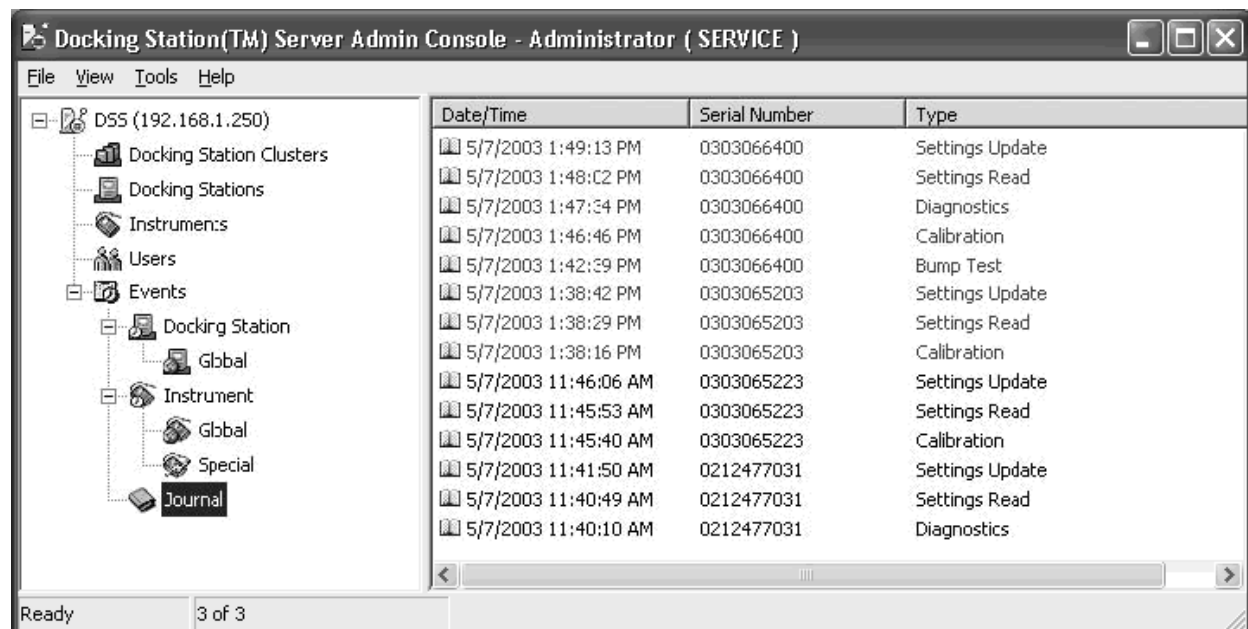
Figure 9-1. Event Journal Details Dialog Box

NOTE: The journal details display in the language that is set for the DSSAC.

NOTE: Journal details having entries greater than 8K bytes are truncated.
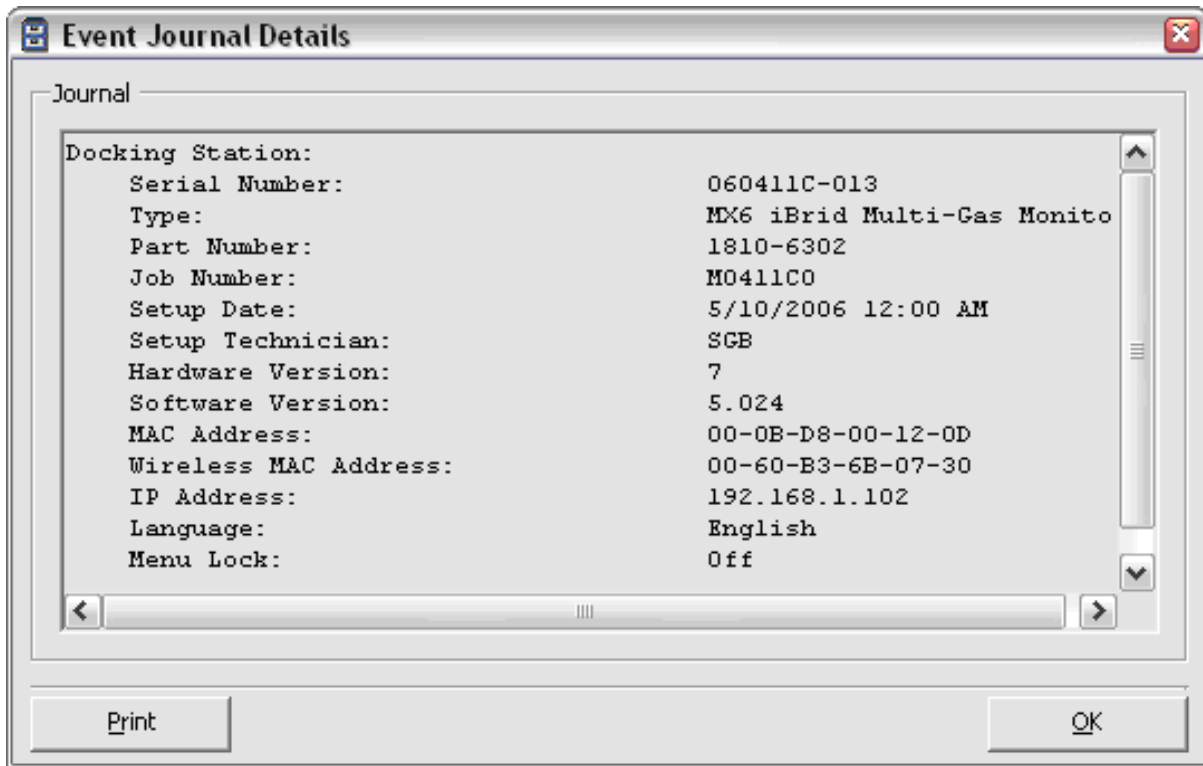
Figure 9-2. Sample Event Journal Details Screen

An IDS uploads its IP Address to the DSS. The DSS uploads the following network-related information to iNet for each IDS, if it has the information for the IDS.

1. Docking station's IP Address.
2. MAC address of docking station's wired Ethernet port.
3. MAC address of wireless card (only if there is one).
4. Docking station's server IP Address (or host name if IDS is configured with a specific server host name instead of server IP address; e.g., "AN1632").

To view Journal entries for an individual event, follow the instructions listed below.

Step	Instruction
1.	Open the DSSAC application.
2.	Expand the Events option in the navigation pane, if necessary.
3.	Expand the docking station or instrument options that are underneath Events, if necessary, depending on the type of event you wish to view.
4.	For docking stations, click on Global. For instruments, click on either Global or Special.
5.	The list of configured events appears in the contents pane.
6.	Double-click the event whose journal you wish to view. Alternative: You can also right-click on the event and select Properties from the context menu.

Step	Instruction
7.	Click on the Journal tab. For each journal entry you can view the Date/Time at which the event occurred, and the Serial Number of the instrument or IDS for which the event was run.
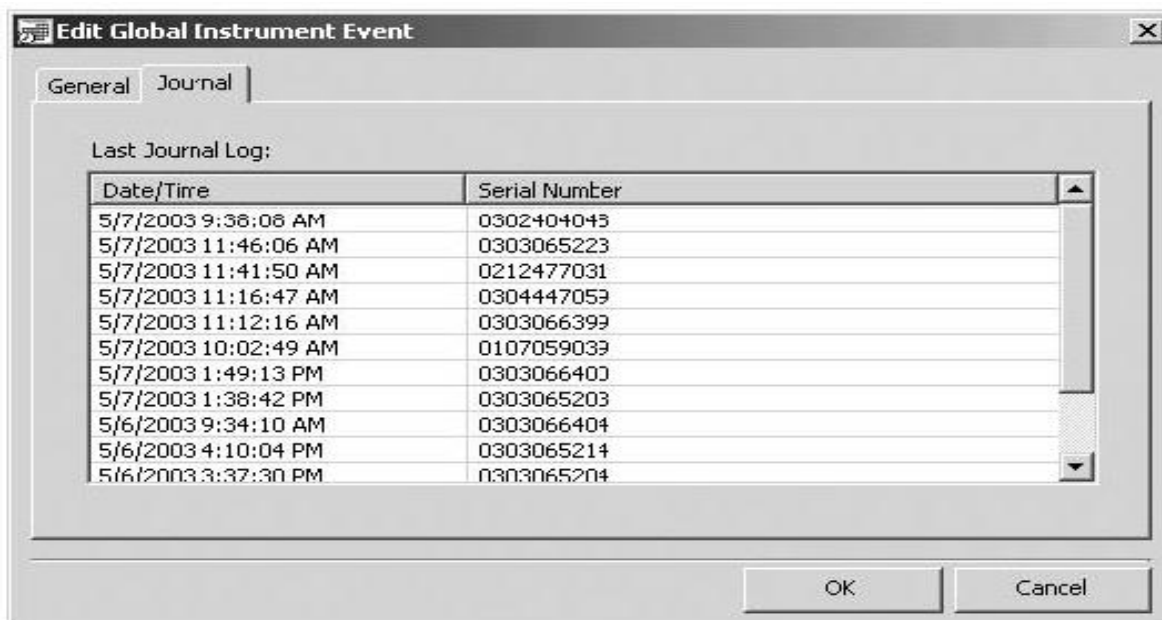
Figure 9-3. Viewing Journal Entries for an Individual Event

# # #

Chapter

Default Settings

10

10.1. Introduction

This section describes how to maintain the default settings for alarms and calibration gases in the DSSAC. These functions are only available to users who are assigned to the Systems Administrator role. However, a user assigned to the Technician role can view the settings, but not change them.

10.2. Default Alarm Settings

When first installed, DSX contains a series of default alarm settings for each of the compatible instruments and each of the sensor types that can be used with them. These settings are the recommended thresholds for the following alarms:

- **Alarm Low -**The gas concentration threshold that triggers the low alarm. The alarm sounds when the instrument detects that the gas concentration has reached or exceeds this level. The exception to this rule is for Oxygen (O_2) where the alarm sounds when the concentration of oxygen reaches or falls below this level.
- **Alarm High -**The gas concentration threshold that triggers the high alarm.
- **TWA -**The gas concentration threshold for Time Weighed Average (TWA) readings that triggers an alarm.
- **STEL -**The gas concentration threshold for Short Term Exposure Limit (STEL) readings that triggers an alarm.

Default Alarm Settings apply only to instruments when they are docked for the first time, or to new sensors whose information is not in the database. Therefore, you should set up your default settings before docking any instruments that are registered in the database. Changing the Default Alarm Settings after an instrument has been registered will not update the instrument sensor's settings, unless a new sensor is installed in the instrument. You can, however, change an individual sensor's settings to different alarm values, if desired, using the DSSAC. See section 5.8 The Components Tab for information about sensor-specific alarm settings.

NOTE: Only users assigned to the Systems Administrator role may configure Default Alarm Settings in the DSSAC.

10.3. Modifying Default Alarm Settings

To modify Default Alarm settings, follow the instructions listed below.

Step	Instruction
1.	Open the DSSAC application.
2.	Click on the View menu and select Default Alarm Settings.
3.	The Company Alarms dialog box appears. It contains multiple tabs, one for each compatible instrument type.
4.	Each tab contains a list of sensor types that can be used with the instrument. Select the instrument for which you want to change alarm settings.
5.	To edit an alarm setting for a sensor type, double-click on its entry in the list. Alternative: You can select the sensor type, and click the Properties button. Alternative: You can also right-click on the sensor type and select Properties from the context menu. NOTE: Access to the Alarms Settings screen (via the double-click method or the Properties button) is only available if the user is an administrator.
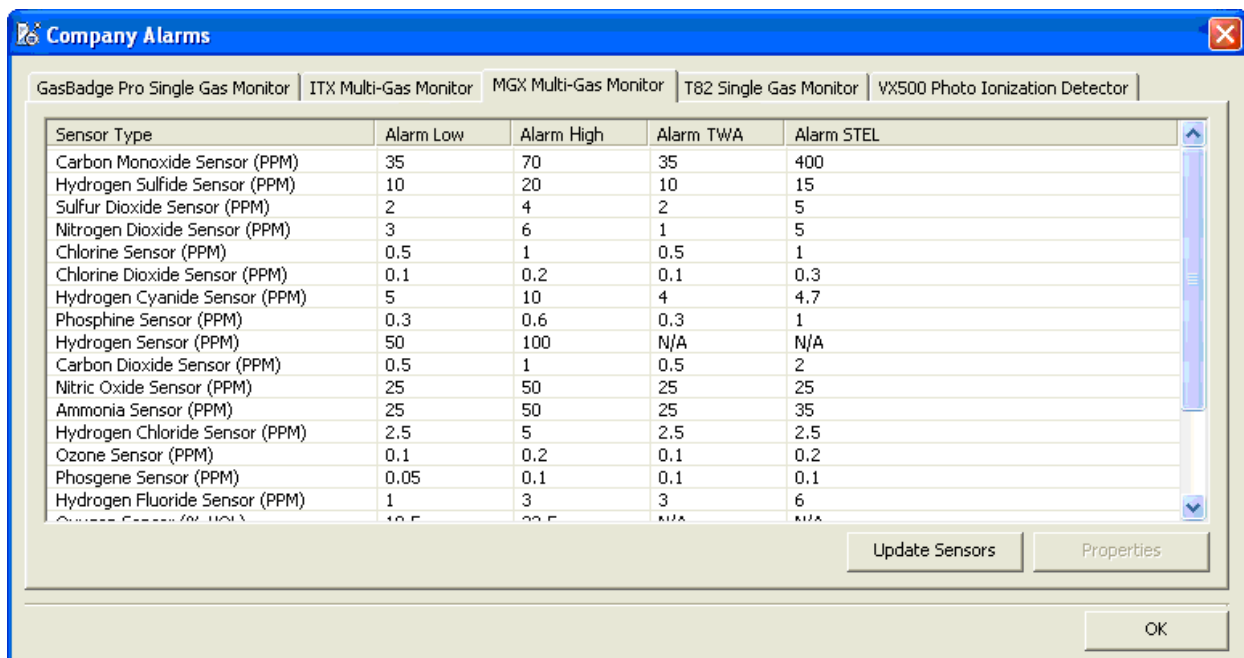
Figure 10-1. Company Alarms Dialog Box

Step	Instruction
6.	The Alarm Settings dialog box appears (for Administrators only). By default, the Factory setting is selected. You can override this setting by selecting Company.
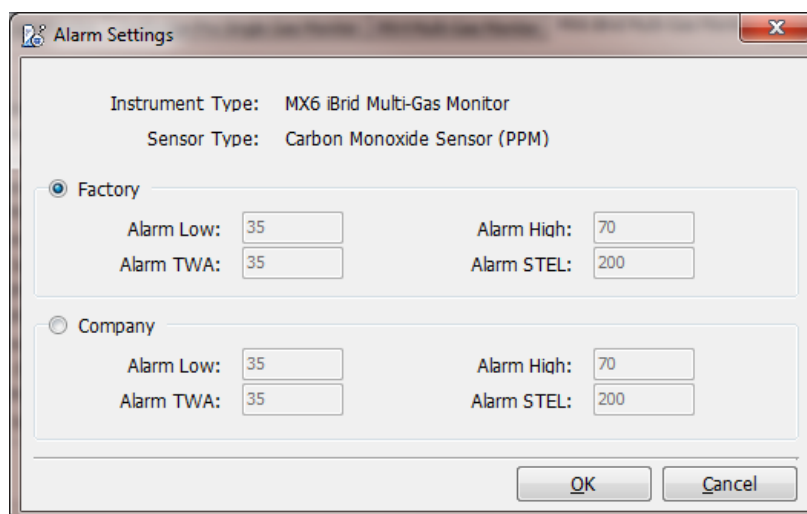
Figure 10-2. Alarm Settings Dialog Box

NOTE: You can return to the factory settings by editing the Alarm Setting and selecting **Factory.**

Step	Instruction
7.	You can now edit the values for Alarm Low, Alarm High, Alarm TWA and Alarm STEL. Click OK to confirm your changes. NOTE: Look at the Sensor Type to determine the type of value that should be entered for the alarm values (e.g., PPM, %VOL, or %LEL).
8.	The sensor type appears in the list in bold type, which indicates that custom settings have been entered, but are not yet saved.
9.	In the Company Alarms dialog box, Click on Update Sensors to save the changes.
10.	Click OK to close the Company Alarms dialog box.
11.	The changes you made are applied to instruments and sensors when they are first registered in the database.

10.4. Default Calibration Gases

The docking station system allows you to define the concentration of calibration gas that you typically use to calibrate certain sensor types. You can define calibration gases for each of the compatible instrument types.

Default Calibration Gases apply only to instruments when they are docked for the first time, or to new sensors whose information is not in the database. Therefore, you should set up your default settings before docking any instruments that are registered in the database. Changing the Default Calibration Gas settings after an instrument has been registered will not update the instrument sensor's settings, unless a new sensor is installed in the instrument.

10.5. Modifying Default Calibration Gas Settings

To modify Default Calibration Gas settings, follow the instructions listed below.

Step	Instruction
1.	Open the DSSAC application.
2.	Click on the View menu and select Default Calibration Gases.
3.	The Company Calibration Gases dialog box appears. The Company Calibration Gases dialog box contains a tab for each compatible instrument type. Each tab contains a list of sensor types that applies to the instrument. Select the instrument for which you want to change calibration gas settings.
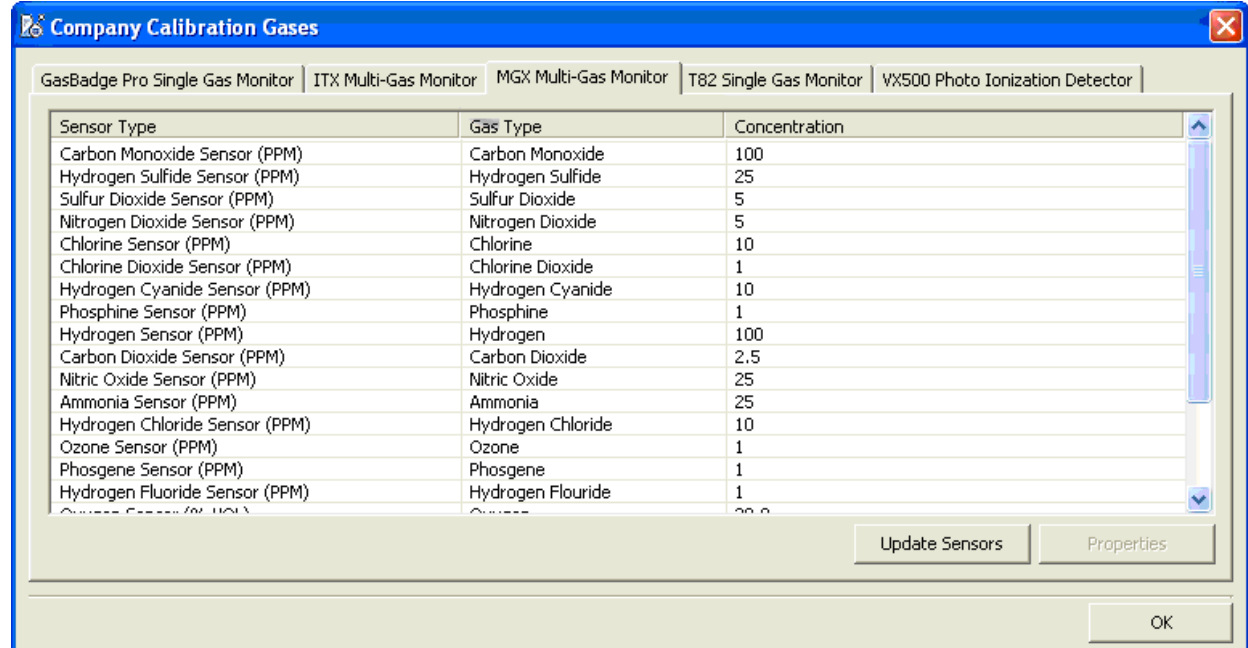
Figure 10-3. Company Calibration Gases Dialog Box

NOTE: VX500 Photo Ionization Detector contains one entry for the PID Sensor.

Step	Instruction
4.	To edit a calibration gas setting for a sensor type, double-click on its entry in the list. Alternative: You can select the sensor type, and click the Properties button. Alternative: You can also right-click on the sensor type and select Properties from the context menu. NOTE: Access via the double-click method or the Properties button is only available if the user is an administrator.
5.	The Gas Calibration dialog box appears. By default, the Factory setting is selected. You can override this setting by selecting Company.

NOTE: You can return to the factory settings by editing the Gas Calibration setting and selecting **Factory**.

Step	Instruction
6.	Enter the Concentration of the calibration gas that you wish to use for the sensor type. Click OK to confirm your changes. NOTE: Look at the Sensor Type to determine the type of value that should be entered for the concentration value (e.g., PPM, %VOL, or %LEL).
7.	The sensor type appears in the list in bold type, which indicates that custom settings have been confirmed, but are not yet saved.
8.	In the Company Calibration Gases dialog box, Click on Update Sensors to save the changes.
9.	Click OK to close the Company Calibration Gases dialog box.
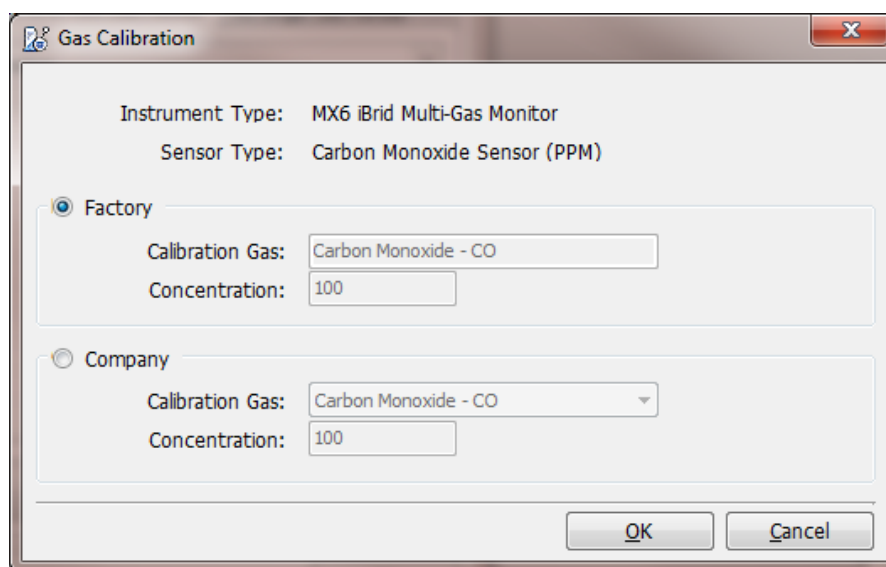
Figure 10-4. Gas Calibration Dialog Box

NOTE: If the user is an administrator, selecting any sensor type enables the properties button. If the user is a technician, selecting any sensor type does not enable the properties button. Clicking the Properties button or selecting the Properties menu opens the Gas Calibration screen.

NOTE: If the user is an administrator, right-clicking on any sensor type displays a pop-up menu with Properties as a menu option. If the user is a technician, right-clicking on any sensor type does nothing. If the user is an administrator, double-clicking on any sensor type opens the Gas Calibration screen.   If the user is a technician, double-clicking on any sensor type does nothing.

# # #

Chapter 11

Printing

11.1. Introduction

You can print information that appears in the contents pane of DSSAC for the following options:

- Users
- Docking Stations
- Events
- Instruments
- Journal.

You can also print the details of individual IDSs and instruments. For instruments, you can print calibration and bump test certificates, as well as datalog data. In addition, you can print calibration and datalog graphs using the Graph Toolbar.

11.2. Printing a List from the Contents Pane

To print the contents pane, follow the instructions listed below.

Step	Instruction
1.	Open the DSSAC application.
2.	Click on the option in the navigation pane that represents the type of information you would like to print. For example, if you would like to print a list of Instruments, click on the Instruments option.
3.	If necessary, click on a column heading to sort the list the way you would like it to appear for the print out. You can also resize the columns to display the data properly for the print out.
4.	Click on the File menu and select Print. Alternative: You can also right-click on the option in the navigation pane and select Print from the context menu.
5.	The Print dialog box appears. Select the printer to which you would like to print, and the number of copies that you would like to print.
6.	Click OK. The information is sent to the printer you selected.
7.	The output is a formatted report of the data that appears in the contents pane for the option that you had selected.

11.3. Printing IDS or Instrument Detail

To print the details of an instrument or IDS, follow the instructions listed below.

Step	Instruction
1.	Open the DSSAC application.
2.	Click on the Instruments or Docking Stations option in the navigation pane.
3.	Right click on the instrument or IDS whose details you would like to print.
4.	The Print dialog box appears. Select the printer to which you would like to print, and the number of copies that you would like to print.
5.	Click OK. The information is sent to the printer you selected. If you printed an IDS, the output contains the information on the General tab and each of the Gas In tabs. If you printed an instrument, the output contains the information on the General, Options (if available), Components, Users and Sites (if available), and Notes tabs. Alternative: You can also select the instrument or IDS, and click the File menu and choose Print.

NOTE: The **Access Code** field will not be included on an instrument print out.

You can also print the details of an instrument or IDS from within the **Edit Instrument** or **Edit Docking Station** dialog box. Follow the instructions listed below.

Step	Instruction
1.	Open the DSSAC application.
2.	Click on the Instruments or Docking Stations option in the navigation pane.
3.	Double-click on the instrument or IDS whose details you would like to print.
4.	Click the Print button.
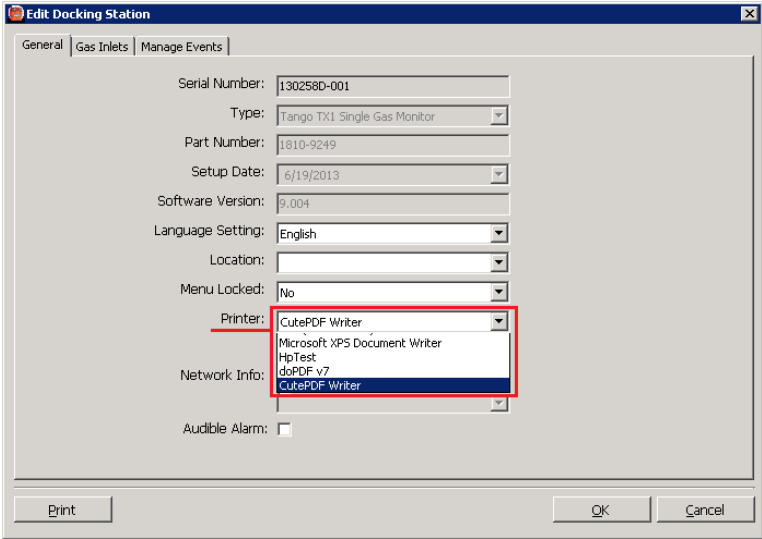
11.4. Configuring the Auto-Print Feature (Versions 3.0 and Higher)

After the docking station system is completely operational, the follow feature may be enabled to allow calibration and bump test reports to be automatically printed to a specified printer after the event has occurred.

Before setting up the software for the auto-print feature make sure that the user that is logged onto the machine has administrative privileges to change the printer.

The user will be required to properly configure the printers on the server or PC before they will become available for use in this feature. The steps to configure a printer are listed below.

Step	Instruction
1.	Create or choose a user account on the server or PC machine which will be used by the printing service. This user account must be password protected. The user MUST have administrator rights.
2.	Log into the server or PC machine using the user account created in the previous step.
3.	Make sure you can open Internet Explorer. If IT needs to go through the wizard, complete the steps asked. NOTE: Internet Explorer Version 7.0 (or later) must be installed for the Auto-Print feature to operate.
4.	Through Windows, add any printers desired by selecting START / SETTINGS / PRINTERS AND FAXES / ADD PRINTER.
5.	Log back in as an Administrator.
6.	Access the services running on the server by START / SETTINGS / CONTROL PANEL / ADMINISTRATIVE TOOLS / SERVICES.
7.	Locate the service named "**DSX Server** Auto Print".
8.	Right-click on this service and select "Properties".
9.	Select the "log-on" tab.
10.	Select "This account" instead of the default.
11.	Click "Browse".
12.	**The following window will appear.** **Figure 11-1. The Select User Window**

Step	Instruction
13.	Enter the name of the user that was selected previously into the textbox.
14.	Click "Check names" and verify that the name is recognized.
15.	Select ok.
16.	Enter the users password into the password box and confirm box.
17.	Right click the service and select "Stop."
18.	Right click the service and select "Start."
19.	The service should now have access to all printers configured for that user.
20.	When using DSSAC and a selected unit is chosen from the Docking Station lists, the General Information tab for the docking station will look like the following. A drop down list of printers is available. (Printers will appear in this list if the service was set up properly). **Figure 11-2. The General Information Tab for the Docking Station**
21.	When a printer is selected from the IDS Printer list, Calibration and Bump Test Certificates will automatically print to the chosen printer each time one of these events occurs. A sample of each of the reports is shown below.

NOTE: If DSS's tracelog service is enabled, then the DSX Server AutoPrint service will write debug messages to the file called "ds2_printing_log.txt" in the *same directory* that the server's tracelog file is configured to write to. For example, if tracelog is configured to be **D:\logs\ds2_server_log.txt**, then the AutoPrint service will log its messages to **D:\logs\ds2_printing_log.txt**.
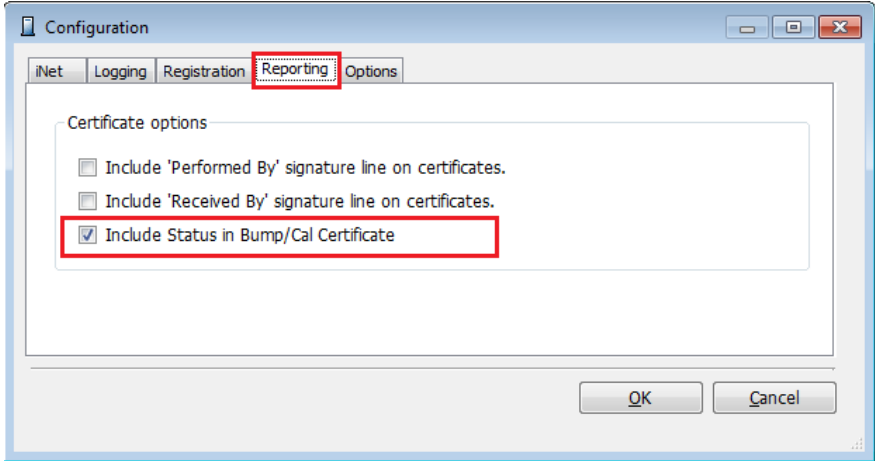
The AutoPrint service reads configuration settings on startup to determine if and where it should write its log file. It will reread the configuration file once every minute to see if trace log settings have changed and, if so, then the AutoPrint service will change on the fly to use the new log settings.

The AutoPrint service uses the maximum size specified tracelog file to also control the maximum size of the printing log. That is, if tracelog is configured to restart at 1MB, then the AutoPrint service will *also* restart the printing log once it exceeds 1MB. Each time the AutoPrint server logs a message, it checks the size of the log file. If the file is less than tracelog max size, it appends the message. If the file is greater than this max size, it clears the file and then writes the message.

11.5. Printing Calibration and Bump Test Certificates

To print calibration or bump test certificates, follow the instructions listed below.
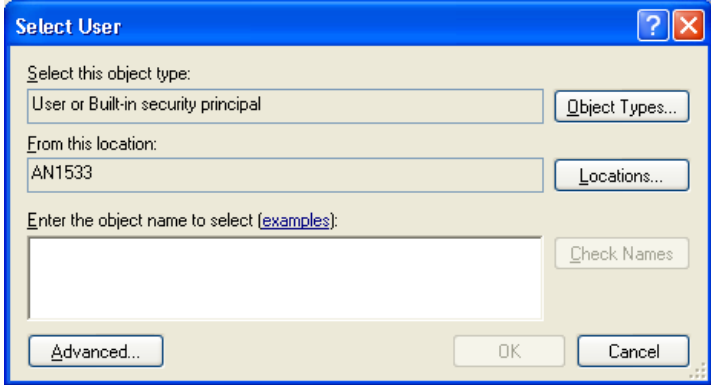
Step	Instruction
1.	Open the DSSAC application.
2.	Click on the Instruments option in the navigation pane. The contents pane displays a list of instruments.
3.	Double-click on the instrument that has the calibration or bump test data for which you would like to print a certificate.
4.	Click on the Calibrations or Bump Tests tab.
5.	Do one of the following: • Select a Start Date and an End Date, and then click the Display button to show data for a specific date range. • Click the Show Last button to display the results of the last calibration or bump test.
6.	Select the entry that you would like to print. You can select multiple calibration entries by pressing the CTRL key on your keyboard while selecting each entry.

Step	Instruction
7.	Calibration and bump test certificates may optionally have signature lines printed to include a Performed By and/or a Received By signature. They can also include the selected instruments' Status information. To add the signature lines and/or include instrument status on the Cal or Bump certificates • Select the View dropdown menu from the DSSAC main tool bar. • Click on Configuration. • The Configuration dialog box will appear as shown. Select the Reporting tab. • Check one or both boxes for the desired signature line, and/or check the box "Include Status in Bump/Cal Certificate". Click "OK".
8.	Click the Print Certificate button. Alternative: You can also right-click on the entry, and select Print Certificate from the context menu.
9.	The Print dialog box appears. Select the printer to which you would like to print, and the number of copies that you would like to print.
10.	Click OK. The information is sent to the printer you selected.
11.	The output displays the serial number of the instrument, the serial number of the sensor, the gas type, the status of the instrument, and whether or not the test passed or failed. For calibrations, the Full Span Reserve calculation is also printed.

NOTE: Any user-selected calibration or bump certificate can be printed.

NOTE: For a multi-gas instrument, selecting one sensor and then clicking the PRINT button prints the instrument's calibration certificate for all of the installed sensors at that time.

A "Cylinder ID" column (represented by "CYL") contains the Serial number of the cylinder, if the cylinder is iGas. This serial number is read from the iGas card. It consists of the Lot number and the cylinder number

If the cylinder is not iGas, the cylinder ID column contains the Cylinder ID number entered manually by the user through DSSAC. If the user has not entered an ID, this column is blank.

A "Cylinder Expiration" column (represented by "Exp") contains the expiration date read from the iGas card. If the cylinder is non-iGas, this column contains the expiration date entered manually by the user through DSSAC.

Calibration Certificate

Tango TX1 Single Gas Monitor

Instrument SN	13014S2-062	Calibration Date	7/17/2013
Part Number	ZX6-1	Job Number	DEVJOB
Setup Date	4/5/2013	Options	N/A
Setup Technician	GANA	Battery	N/A
Created By	DSSUSER	Status	Working

Sensor SN	Sensor Type	Gas Type	Span Gas	Span Reserve	Passed/Failed	Alarm Low	Alarm High	Alarm TWA	Alarm STEL
12113Q5250	Carbon Monoxide Sensor	Carbon Monoxide	100	191%	Passed	35	70	35	400
12105VJ061	Carbon Monoxide Sensor	Carbon Monoxide	100	195%	Passed	35	70	70	35

Sensor SN	Sensor Type	Cal Date/Time	Cylinder ID	Cylinder Exp
12113Q5250	Carbon Monoxide Sensor	7/17/2013 5:44:46 PM	N/A	3/21/2018
12105VJ061	Carbon Monoxide Sensor	7/17/2013 5:45:00 PM	N/A	3/21/2018

13014S2-062

Figure 11-3. Sample Tango TX1 Calibration Certificate

Bump Certificate

Tango TX1 Single Gas Monitor

Instrument SN	13014S2-062	**Bump Date**	7/11/2013
Part Number	ZX6-1	**Job Number**	DEVJOB
Setup Date	4/5/2013	**Options**	N/A
Setup Technician	GANA	**Battery**	N/A
Created By	DSSUSER	**Bump Timeout**	120
Status	Working		

Sensor SN	Sensor Type	Gas Type	Span Gas	Sensor Reading	Passed/Failed	Alarm Low	Alarm High	Alarm TWA	Alarm STEL
12113Q5250	Carbon Monoxide Sensor	Carbon Monoxide	100	81	Passed	35	70	35	400
12105VJ061	Carbon Monoxide Sensor	Carbon Monoxide	100	95	Passed	35	70	70	35

Sensor SN	Sensor Type	Bump Date/Time	Cylinder ID	Cylinder Exp
12113Q5250	Carbon Monoxide Sensor	7/11/2013 7:05:44 PM	N/A	3/21/2018
12105VJ061	Carbon Monoxide Sensor	7/11/2013 7:05:49 PM	N/A	3/21/2018

13014S2-062

Figure 11-4. Sample Tango TX1 Bump Certificate

11.6. Printing Datalog Data

To print datalog data, follow the instructions listed below.

Step	Instruction
1.	Open the DSSAC application.
2.	Click on the Instruments option in the navigation pane. The contents pane displays a list of instruments.

Figure 11-5. The Instruments Option in Navigation Pane

Step	Instruction
3.	Double-click on the instrument that has the datalog data that you wish to print.
4.	Click on the Datalog tab.
5.	Select a Start Date and an End Date, and then click the Display button to show data for a specific date range.
6.	Select the session whose information you would like to print.
7.	Click the Actions button.
8.	Selecting the Print Data option prints a Datalog Detail Report. It is disabled until a session is selected. Selecting the Print Summary option prints a Datalog Summary Report. It is disabled until a session is selected. Note that this option is disabled by default or whenever no session is currently selected.
9.	The information is sent to the printer you selected.
10.	The output displays each reading taken during the session, as well as the TWA and STEL calculations at the time of each reading. The list is categorized by period and site information.

Figure 11-6. The Datalog Tab

Figure 11-7. Sample Datalog Summary Report

# # #

Chapter
12

Language Features

12.1. Introduction

The DSX-L supports seven languages for the user interface on the IDS LCD display and in the DSSAC application: English, French, Spanish, German, Czech, Polish, and Russian. When the DSS installation software is launched, the Software Startup Window displays the language choices. Click on the desired language. The Launcher page will reload in the chosen language.

Figure 12-1. Installer Software Startup Window

12.2. Changing Language Settings

This section describes how to change your language settings for both the IDS and the DSSAC.

12.2.1. Instrument Docking Station Language Settings

The language setting for an IDS can be changed by either of the following ways:

- Using the **Edit Docking Station** dialog box in the DSSAC
- Using the IDS menu.

To change IDS language settings using the DSSAC, follow the instructions below.

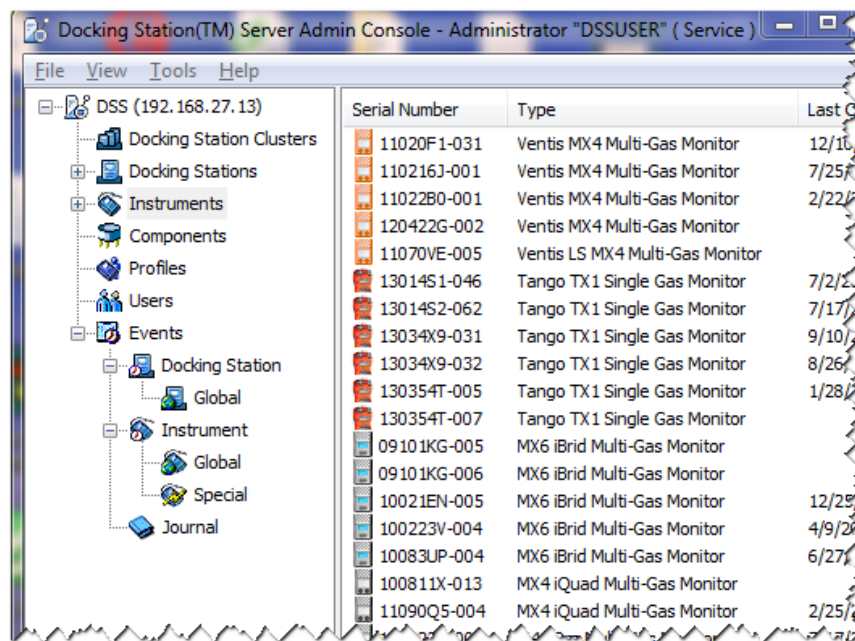| Step	Instruction
1.	Open the DSSAC application.
2.	Click the Docking Stations option in the navigation pane.
3.	The contents pane displays a list of IDSs that have been configured in the system.
4.	Double-click on the IDS whose language settings you wish to change.
5.	The Edit Docking Station dialog box appears.
6.	On the General tab, select a language in the Language Setting field.
7.	Click the OK button to save your changes. The change will take effect the next day, when the system runs the Settings Update event for the IDS. Alternative: You can also right-click on the IDS and select Properties from the context menu. Alternative: You can also select the IDS, and then click the File menu, and select Properties.

To change IDS language settings using the IDS menu, follow the instructions listed below.

Step	Instruction
1.	Press any of the keys on the IDS keypad to access the main menu.

NOTE: The menu cannot be used when the IDS is performing an instrument action.

NOTE: The menu cannot be used if the **Menu Locked** setting for the IDS in DSSAC is set to "Yes."

Step	Instruction
2.	Use the ARROW keys on the keypad until Docking Station is highlighted.
3.	Press the ENTER key. The Docking Station menu appears.
4.	Use the ARROW keys on the keypad to select Set Language. Press the ENTER key.
5.	A list of languages appears. Use the ARROW keys on the keypad to navigate to the language that you would like to use. Press the ENTER key to select the language.
6.	The LCD displays a confirmation prompt: "Are you sure?" Select Yes, and press the ENTER key.
7.	The LCD screen returns to the main menu. The language setting on the Docking Station has been changed.

NOTE: If the language is not changed in DSSAC, the language set in DSSAC will override the setting made on the IDS menu the next time the system runs the Settings Update event for the IDS.

12.2.2. DSSAC Language Settings

To change the language used in the DSSAC application, follow the instructions below.

Step	Instruction
1.	Open the DSSAC application.
2.	Click on the View menu and select Configuration.
3.	Click on the Language tab, if necessary.
4.	Select a language from the drop-down list in the "Language Setting" field. Click OK.
5.	A DSSAC Settings Change message appears to inform you that the change will not take effect until the next time that DSSAC is restarted.
6.	Click the File menu and select Exit to close the DSSAC application.
7.	Re-open the DSSAC application. The language you selected is used to display information in the DSSAC.

# # #

Troubleshooting

Chapter

13

13.1. Introduction

This section provides information about troubleshooting problems in the docking station system. The issues are categorized into three main areas:

- DSSAC Issues
- DSS Issues
- Instrument Docking Station Issues.

13.2. Using the Event Log

If you experience a problem with the Docking Station Server (DSS) or the DSSAC, many error messages can be viewed in the operating system's Event Log. In addition, information about events that did not run successfully is recorded in the Event Log.

For DSSAC workstations, you can view the event log from the computer on which DSSAC is running. For the DSS computer, you can view the event log in the same way only if you have physical access to the server. You can also access the event log of the DSS remotely, provided you have administrative rights on the server. The DSS messages will be written to the DSX Docking Station Log in the Event Log.

To access the Event Log on the current computer, follow the instructions listed below.

Step	Instruction
1.	Click on the Start button.
2.	Select Control Panel. The Control Panel window opens.
3.	Double-click on the Administrative Tools icon to open the Administrative Tools window.
4.	Double-click on Event Viewer. The Event Viewer utility opens. The docking station records errors to the Application log.
5.	If you need to access the DSS Event Log, you can use the Computer Manager icon instead of the Event Viewer icon. When the Computer Manager opens, click on the Action menu and choose Connect to another computer. Select the server that is running the DSS software.

To access the Event Log on another computer, follow the instructions that are listed below.

Step	Instruction
1.	Click on the Start button
2.	Select Control Panel. The Control Panel window opens.
3.	Double-click on the Administrative Tools icon. The Administrative Tools window opens.
4.	Double-click on the Computer Manager icon. The Computer Manager utility opens.
5.	Click on the Action menu and choose Connect to another computer. Select the server whose Event Log you wish to view.
6.	Once you have connected to remote computer, click on Event Viewer in the left pane of the window. Please refer to your operating system's user guide for detailed information about using the Event Viewer.

Table 13-1. Sample Event Log Messages

Error Condition	Event Viewer Message

Required gas is not connected (no iGas connected and no gas manually configured through DSSAC)	```******* EVENT VIEWER MESSAGE: Warning 0 Event type: InstrumentCalibrationForcedEvent```
	```Docking Station: 0403525-075```
	```Docked Instrument: 0211350084```
	```Description: Resources for event on 0403525-075 were unavailable.Could not find cylinder needed for sensor: 001714522082#S0001```
	```Error Text:```
	```*******END EVENT VIEWER MESSAGE*******```

Required gas is connected, but expired	```******* EVENT VIEWER MESSAGE: Warning 0 Event type: InstrumentCalibrationForcedEvent```
	```Docking Station: 0403525-075```
	```Docked Instrument: 0211350084```
	```Description: Resources for event on 0403525-075 were unavailable.Cylinder has expired.```
	```Cylinder id =83075A-104```
	```Port number: 2```
	```Could not find cylinder needed for sensor: 001714522082#S0001```
	```Error Text:```
	```*******END EVENT VIEWER MESSAGE*******```

Error Condition	Event Viewer Message
| Required gas is connected, but empty | ```
******* EVENT VIEWER MESSAGE: Warning 0 Event type:
Instrument Heartbeat
Docking Station: 0403525-075
Docked Instrument: 0211350084
Description: Resources for event on 0403525-075 were
unavailable.Cylinder is empty.
Cylinder id =82041-89
Port number: 2
Could not find cylinder needed for sensor:
001714522082#S0001
Error Text:
*******END EVENT VIEWER MESSAGE*******
``` |
| Fresh air is not configured manually through DSSAC | ```
******* EVENT VIEWER MESSAGE: Warning 0 Event type:
InstrumentCalibrationForcedEvent
Docking Station: 0403525-075
Docked Instrument: 0211350084
Description: Resources for event on 0403525-075 were
unavailable.Fresh air not found.
Error Text:
*******END EVENT VIEWER MESSAGE*******
``` |

13.3. DSSAC Issues

Situation	Explanation/Solution
You cannot log on to the DSSAC (Invalid User Name or Password. Please reenter to log in.)	• Make sure that you user name and password are typed correctly. Passwords are case-sensitive. Check to see if the CAPS LOCK is turned on your keyboard.
You cannot log on to the DSSAC (Invalid IP Address)	• Click the Options button on the DSSAC Login dialog. Make sure that the IP address is the correct address for the DSS you are trying to access.
You receive a network error when launching the DSSAC application	• The DSS is down, or the computer is not connected to the network. Contact your network administrator or docking station systems administrator.
Data entered in DSSAC is not saved	• Connection to the network has been interrupted. Contact your network administrator.

You receive a network error while in the DSSAC	• Connection to the network has been interrupted. Contact your network administrator. • The DSS may be down. Contact your network administrator or docking station systems administrator. • Your user account has been removed or modified (e.g., role changed, password changed, account disabled) by a Systems Administrator.
You cannot see the User option or the Default Alarm Settings, or the iNet tabs in the Configuration dialog	• Your role is set to "Technician." An administrator needs to change your role to "Systems Administrator" in order to for you to use these functions.
You cannot see all of the instruments in the system when you click on the instruments option in the navigation pane	• A filter is in effect. Right click on the Instruments option in the navigation pane, and select Cancel.

13.4. DSS Issues

Situation	Explanation/Solution
Upload to iNet fails	• Internet connection failure. Contact your network administrator. • Verify that the correct Company Password and URL have been configured in the DSSAC.
DSSAC clients and IDS cannot connect to the DSS	• Verify that the server is running and is connected to the network. • For DSSAC clients, ensure that the correct server IP address is specified in the Login dialog box. • For IDSs, verify that the correct server IP address is configured by checking the Information screen from the IDS menu. DSS does not communicate with IDSs • Verify that the DSS has a fixed IP address, and that DHCP is running to assign IP addresses to the IDSs.
Bump and/or Calibration certificates are blank when printed using the Auto Print feature	• Verify the version of Internet Explorer that is being used. The docking station system requires version 6.0 or later. Earlier versions may print blank bump and calibration certificates.

13.5. Instrument Docking Station Issues

Situation	Explanation/Solution
Instrument did not calibrate	• Gas cylinder is expired. • Gas cylinder is empty. • Gas requested for calibration was not available. • Gas tubing that supplies the gas is blocked or disconnected. • The Gas In connections are configured incorrectly in DSSAC.
Unexpected calibration failure	• Gas is not connected to the appropriate Gas In connection; thus, the instrument was calibrated using fresh air. • Gas configured for the Gas In tab in the DSSAC does not match actual gas in the cylinder.
Changes to settings were not properly applied to a IDS or instrument	• IDS was unplugged during the event. • Network connection possibly interrupted. • Instrument was not properly docked in the IDS.
Cannot perform a forced calibration	• Instrument is not properly docked in the IDS.
When a datalog download is attempted, the IDS displays "Unavailable"	• The instrument's datalog data is probably corrupt. Manually clear the datalog from the instrument.
Cannot use the menu on the IDS	• The IDS is actively performing a task. • The Menu Locked option has been set for the IDS in the DSSAC.
IDS green LED is on, but the IDS is not displayed in blue text in the DSSAC	• Network connection from the IDS may be down or unplugged.
"Discovering" message displays on the IDS for an extended period of time	• Network connection from the IDS may be down or unplugged.
IDS does not display the correct time	• Verify that the server has the correct time for your time zone. The IDSs use the time available from the server.
An instrument shows a failed sensor on its display, but the IDS displays the instrument as available	• The instrument was probably calibrated in the field. The docking station is not aware of the failed calibration. Force a calibration on the IDS.

Situation	Explanation/Solution
IDS display reads "Unavailable"	• An error occurred with the IDS. Review the DSS event log, and look for errors related to the IDS serial number
IDS display reads "Unavailable Instrument"	• Check the docked instrument's properties in DSSAC to see if the instrument failed calibration.
IDS display reads "Unavailable Server"	• IDS cannot contact the server. The IDS display shoes its own IP address and also the IP address of the server it is currently configured to connect to.
"Diagnostic Vacuum" error	• Diagnostic test fails if vacuum <= 130 or vacuum >= 325
"Diagnostic Solenoid No Vacuum" error	• Diagnostic test fails if vacuum >= 325.

Situation	Explanation/Solution
IDS display reads "Unavailable Gas" (or "No Fresh Air" when connected to v5.0 DSS or later)	- Gas that was required for a bump test or calibration was not available. - The gas cylinder may be low or empty. - Ensure that the Gas In configuration in DSSAC is correct. - If more than one gas is missing, the IDS displays the first gas it needed, but did not have access to. Thus, if the first missing gas is then provided, but a second gas is still missing, the user is presented with a second "Unavailable Gas" message, but with the chemical symbol of the second gas. - If prior to an aborted cal/bump the pressure of the cylinder was previously "OK" or "Low", then underneath the Unavailable Gas message, the word "Low" or "Empty" appears (respectively) - If the server determines that a scheduled or forced calibration or bump cannot occur because a needed gas cylinder is empty or expired, then the IDS displays "Empty" or "Expired" (as appropriate) along with the chemical symbol of the missing gas. <table><tr><td>Unavailable Gas (H2S) SN: 0511061-023</td><td>Unavailable Gas (Fresh Air) SN: 0511061-023</td><td>Unavailable Gas (Low) SN: 0511061-023</td></tr><tr><td>Unavailable Gas (Empty) SN: 0511061-023</td><td>Unavailable Gas (H2S Empty) SN: 0511061-023</td><td>Unavailable Gas (H2S Expired) SN: 0511061-023</td></tr></table> **Figure 13-1. Examples of No Gas Displays**

13.6. Enabling the Tracelog

To enable the tracelog feature in the Docking Station Server Admin Console, follow the procedure listed below.

Step	Instruction
1.	Log into the Docking Station Server Admin Console. A sample display is shown below. **Figure 13-1. Sample Display of Docking Station Server Admin Console**
2.	Select the <u>C</u>onfiguration option from the <u>V</u>iew menu. The Configuration window is displayed. **Figure 13-2. Configuration Option of the View Menu**

Step	Instruction
3.	Click the "Logging" tab on the Configuration window. **Figure 13-3. The Logging Tab**
4.	Click the "DS2 Server Logging Enabled" check box.
5.	Ensure that the log file "c:\ds2_server_log.txt" is entered into the "Log File" field.
6.	Ensure that "1000" is entered into the "Max Size (KB)" field.
7.	The "View Log" button can be used to view the log file. The "Purge Log" button can be used to purge the log file. Refer to Figure 13-5 to view a sample log file. **Figure 13-4. Verify Log File Parameters**

Step	Instruction
	Figure 13-5. Viewing a Sample Log File Using the View Log Button
8.	Click "OK" to exit the menu.

NOTE: The log file grows in small increments as the logged data is added to the file. The log file is stored as "c:\ds2_server_log.txt."

13.7. Industrial Scientific Support Services

Contact the Industrial Scientific Customer Service Department 24 hours a day by phone, fax or e-mail. Phone lines are handled by friendly, knowledgeable professionals 24 hours a day from 8 PM Eastern Standard Time (EST) Sunday evening through 6 PM (EST) Friday evening. Your call will be answered by a real person, not an answering machine or an automated attendant with complicated menu selections.

Phone: 412-788-4353
Toll Free: 1-800-DETECTS (338-3287)
Fax: 412-788-8353
Service: 1-888-788-4353
Web: www.indsci.com

# # #

Warranty

Chapter

14

14.1. Warranty

Industrial Scientific Corporation's DSX™ Docking Stations are warranted to be free from defects in material and workmanship under normal and proper use and service for two years from the initial date of shipment by Industrial Scientific Corporation.

14.2. Limitation of Liability

THE WARRANTY SET FORTH ABOVE IS STRICTLY LIMITED TO ITS TERMS AND IS IN LIEU OF ALL OTHER WARRANTIES, GUARANTEES, EXPRESS OR IMPLIED, ARISING BY OPERATION OF LAW, COURSE OF DEALING, USAGE OF TRADE OR OTHERWISE. INDUSTRIAL SCIENTIFIC MAKES NO OTHER WARRANTIES, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE.

SHOULD THE PRODUCT FAIL TO CONFORM TO THE ABOVE WARRANTY, BUYER'S ONLY REMEDY AND INDUSTRIAL SCIENTIFIC'S ONLY OBLIGATION SHALL BE, AT INDUSTRIAL SCIENTIFIC'S SOLE OPTION, REPLACEMENT OR REPAIR OF SUCH NON-CONFORMING GOODS OR REFUND OF THE ORIGINAL PURCHASE PRICE OF THE NONCONFORMING GOODS.

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It shall be an express condition to Industrial Scientific's warranty that all products be carefully inspected for damage by Buyer upon receipt, be properly calibrated for Buyer's particular use, and be used, repaired, and maintained in strict accordance with the instructions set forth in Industrial Scientific's

product literature. Repair or maintenance by non-qualified personnel will invalidate the warranty, as will the use of non-approved consumables or spare parts. As with any other sophisticated product, it is essential and a condition of Industrial Scientific's warranty that all personnel using the products be fully acquainted with their use, capabilities and limitations as set forth in the applicable product literature.

Buyer acknowledges that it alone has determined the intended purpose and suitability of the goods purchased. It is expressly agreed by the parties that any technical or other advice given by Industrial Scientific with respect to the use of the goods or services is given without charge and at Buyer's risk; therefore, Industrial Scientific assumes no obligations or liability for the advice given or results obtained.

# # #

iNet Configuration

Chapter

15

14.1. What is iNet?

This section provides a brief overview of iNet and how to configure the DSX docking station for use with iNet.

iNet is a subscription-based gas detection program giving you peace of mind that their your equipment is properly maintained; that you are able to provide required records on demand; and that your workers are kept safe from hazardous gases.

With iNet, each time your instrument is docked on the DSX, maintenance tasks such as bump tests, calibrations, or firmware upgrades are performed based on user-defined schedules. If an issue such as a failed sensor is detected within the instrument, a replacement monitor is proactively sent to you.

iNet Control – a cloud-based dashboard accessible from any PC browser – provides a comprehensive view of your gas detection program. You'll see that someone from your team turned off an instrument that went into alarm while working; you'll see what gas hazards your team is exposed to and at what levels; and more. In addition, all of your program's data is stored in one place making it easy to produce accurate records and reports on demand.

For more information about iNet, visit www.indsci.com/inet or contact the Industrial Scientific Customer Service Department.

Phone:	(800) DETECTS (800-338-3287) or (412) 788-4353
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14.3. Configuring iNet Settings

When you subscribe to the iNet service, Industrial Scientific supplies you with a Company Password and a URL that is used to access the iNet Network Operations Center. This information is entered into the DSSAC for the server to use when it connects to iNet. Only users assigned to the Systems Administrator role can configure iNet settings.

To configure iNet settings, follow the instructions listed below.

Step	Instruction
1.	Open the DSSAC application.
2.	Click on the View menu and select Configuration. The Configuration dialog box appears.
3.	Click on the iNet tab.
4.	Click on the Enabled checkbox to enable iNet.
5.	Enter the iNet User Id provided to you in the URL field.
6.	Enter the iNet Password provided to you in the iNet Password field.
7.	Enter your iNet account number as the Default iNet Account Number.
8.	Click OK to save your changes. DSX Docking Station is now ready to use iNet.

Figure 14-1. iNet Configuration Dialog Box

15.4. iNet and Proxy Settings

The iNet connector behaves as follows with regard to proxy settings.

1. If the configuration.xml file contains proxy settings, it uses them.
2. If the configuration.xml file does not contain proxy settings, it defaults to the proxy address programmed into Internet Explorer for the user account under which the DS2 iNet connector service is running.
3. The proxy settings in the configuration.xml file must appear as follows in order to be valid and used.

```
<iNet cdbid="mycdbid"
url="https://inetupload.indsci.com/UploadWeb/services/Uploader"
enabled="T" proxyaddress="http://proxyserver/" proxyuser="userid"
proxypassword="password" uploadUser="userid" uploadPasswd="password"
/>
```

Figure 15-2. Proxy Setting Syntax in File configuration.xml

4. The iNet connector will output the following lines to tracelog when there is data to upload.

```
5/16/2005 4:43:13 PM 2    INET: IE Proxy address=<IE proxy address here>
5/16/2005 4:43:45 PM 2    INET: Found proxy settings in
                          Configuration.xml file, overriding IE
                          settings:
5/16/2005 4:43:47 PM 2    INET: proxy ip=<address from config file>
5/16/2005 4:43:48 PM 2    INET: proxy user=<user from config file>
5/16/2005 4:43:48 PM  2   INET: proxy passwd=<passwd from config file>
```

Figure 14-3. Sample Tracelog Output

# # #

Acronyms and Abbreviations

This appendix contains acronyms and abbreviations that are used within this document.

Table A-1. Acronyms and Abbreviations

Abbr	Definition
A	Ampere
AAW	toxic
ABS	acrylonitrile butadiene styrene
ASCII	American Standard Code for Information Interchange
BBIR	broad band infrared
bit	binary digit
bps	bits per second
C	centigrade
CALI	calibration
CAT	catalytic
Ch	channel
CH_4	methane
chem	chemical
Cl_2	chlorine
ClO_2	chlorine dioxide
CO	carbon monoxide
CSV	comma separated variables
DC	direct current
DCS	distributed control system
DHCP	dynamic host configuration protocol
DISP	display
DSN	docking station network
DSS	Docking Station Server

Abbr	Definition
DSSAC	Docking Station Server Admin Console
F	Fahrenheit
FAQ	frequently asked questions
FAUL	fault
FIFO	first-in-first-out
GND	ground
H_2	hydrogen
H_2S	hydrogen sulfide
HCl	hydrogen chloride
HCN	hydrogen cyanide
IDS	instrument docking station
iNet	instrument network
ISC	Industrial Scientific Corporation
IT	Information Technology
LAT	latch mode
LED	light emitting diode
LEL	lower explosive limit (combustible gases)
LSB	least significant bit
mA	milliampere
MINU	minute
mm	millimeter
MON	month
MSMQ	Microsoft Message Queuing
NC	normally closed
NEMA	National Electrical Manufacturers Association
NH_3	ammonia
NO	normally open, Nitric Oxide
NO_2	nitrogen dioxide
NOR	normal mode
O_2	oxygen
OXY	oxygen
PH_3	phosphene

Abbr	Definition
PID	Photo ionization detector
PLC	programmable logic controller
ppm	parts per million
R.HI	high alarm relay
R.FAU	fault relay
R.LOW	low alarm relay
REST	restart
RTC	real time clock
RTU	remote terminal unit
SN	serial number
SO_2	sulfur dioxide
SPST	single-pole, single-throw
STEL	short term exposure limit
TOX	toxic
TWA	time weighted average
UDP	user datagram protocol
V	Volts
VAC	Volts Alternating Current
VOL	volume
WDAY	weekday

# # #

Glossary of Terms

This appendix contains a glossary of terms that are used within this document.

Table B-1. Glossary of Terms

Item	Definition
Bump Test	Also known as "Functional test," a procedure that verifies that an instrument is able to detect gas. A brief exposure of the monitor to a known concentration of gas(es) for the purpose of verifying sensor and alarm operation. It is not intended to be a measure of the accuracy of the instrument.
Bump Test Event	An event in the DSX Docking Station that will automatically perform a bump test on a docked instrument.
Calibration	A test that is used to adjust an instrument to correct for inaccuracies. A known gas concentration is used as a calibration standard to verify and adjust the output of the instrument.
Calibration Event	An event in the DSX Docking Station that will automatically perform a calibration on a docked instrument.
Compact Flash	Removable storage cards that are efficient in terms of weight, size, and durability. Often used in digital cameras, printers, and handheld computers, and can be used for wireless access.
Contents Pane	The right frame of the DSSAC application that displays the details an option that was selected in the navigation pane. For example, the instruments contents pane displays a list of instruments that have been configured in the docking station network.
Diagnostic Test	A test to determine if a particular function on an instrument or IDS is operating properly. Diagnostic tests are run on instruments as a part of the iNet service to proactively determine if a malfunction exists.
Diagnostics Event	An event in the DSX Docking Station that will automatically perform diagnostic tests on a docked instrument or on an IDS. The results of these tests are sent to iNet for analysis.

Item	Definition
Docking Station Network	Also referred to as DSN, the network on which all components of DSX Docking Station reside. A docking station network consists of one (1) Docking Station Server, multiple Instrument Docking Stations (IDS), and multiple Docking Station Server Admin Console (DSSAC) workstations.
Docking Station Server Admin Console	Also referred to as DSSAC, the Windows® application that is used to administer the components of a Docking Station Network.
Docking Station Server	Also referred to as DSS, server software that controls a Docking Station Network. The DSS handles all functions of the IDSs and DSSAC clients. DSS runs on a Microsoft Windows® 2000 or Windows® 2003 server.
Full Span Reserve	The difference between a reading on an instrument and the actual known gas concentration in a calibration gas cylinder, displayed as a percentage, used to measure the accuracy of a sensor. A Full Span Reserve value is computed by dividing a sensor's reading by the actual concentration in the gas cylinder. For example, if a sensor's reading was 70 ppm, and the concentration in the cylinder was 100 ppm, the Full Span Reserve value would be 70%.
Functional Test	See "Bump Test."
Datalog data	Information about the levels of exposure to gases over a period of time. This information is recorded on an instrument during its operation.
Datalog Download Event	An event in the DSX Docking Station that automatically downloads datalog data from a docked instrument and stores it in the DSX Docking Station system.
iGas	A feature of DSX Docking Station that utilizes Smart Card technology to automatically configure gas cylinders for your IDSs.
iNet	Also known as the Instrument Network, a service provided by Industrial Scientific Corporation that monitors a customer's instrument data to ensure that equipment is in optimum working condition. If a service need is detected, appropriate action is taken depending on the iNet program in which the customer participates. Typical service options are an on-site service visit, replacement product, or a new part.
Instrument	Any device that is used to detect gases or Volatile Organic Compounds (VOCs). For purposes of DSX Docking Station, these devices are within Industrial Scientific Corporation's Portable Instruments product line.

Item	Definition
Instrument Docking Station	The physical hardware into which an instrument is placed for calibration, bump tests, diagnostic tests, and datalog downloads to the Docking Station Server.
LEL (Lower Explosive Limit)	The minimum concentration at which a gas will explode, displayed as a percentage (%LEL). The term "LEL" is also used to describe a type of sensor that detects combustible gases.
Navigation pane	The left frame of the DSSAC application that contains a tree-like structure used to navigate to different items in the docking station network.
Network Administrator	Typically the person or persons assigned to configure an organization's network and troubleshoot connectivity issues. communications protocols used to connect hosts on the Internet.
PID (Photo Ionization Detector)	An instrument that utilizes ultra-violet light energy to ionize and detect the presence of an unknown gas or vapor.
PPM (Parts per Million)	A unit of measurement used for small proportions of concentrations. In gas analysis, it expresses the volume of a gas present in terms of its relationship to a whole of 1 million parts of air. Examples: 1% of volume = 10,000 ppm; 100% of volume = 1,000,000 ppm.
Settings Read Event	An event in the DSX Docking Station where the current settings on an instrument or IDS are read to see if they have changed. This event runs daily for IDSs, and upon docking for instruments, in conjunction with the Settings Update Event. This event cannot be configured by an end-user.
Settings Update Event	An event in the DSX Docking Station in which Instrument or IDS settings that were updated in the DSSAC are uploaded to the docked instrument or to the IDS. This event runs daily for IDSs, and upon docking for instruments. This event cannot be configured by an end-user.
Smart Card	A plastic card, about the size of a credit card, with an embedded microchip that contains data. DSX Docking Station uses Smart Cards for the iGas component.
Span	See "Full Span Reserve"
Span Reserve	See "Full Span Reserve"
STEL (Short Term Exposure Limit)	The average amount of gas (in PPM) a worker can be exposed to in a 15-minute period with no long term health effects. This may occur 4 times a shift with one hour between 15-minute exposures.
TWA (Time Weighted Average)	The average amount of gas (in PPM) a worker can be exposed to over a certain time period. This time is defined as 8 hours to represent a normal workday.

Item	Definition
%VOL	The percent of volume, assuming a whole of 100%, typically used to describe the amount of a particular gas in a gas/air mixture.

# #

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