

Instructions for use

Infinity[®] Gateway Suite

WARNING

For a full understanding of the performance characteristics of this software, the user should carefully read this manual before use.

**Pager Control User Guide
Software VF9.n**

General Information

Repairs/modifications

Modifications of this software should be performed by Dräger-authorized service personnel or organizations, or properly trained technicians. Information about repairs can be obtained from Dräger or authorized service organizations.

Trademarks

The Dräger name and logo are registered trademarks of Dräger.

Infinity® is a registered trademark of Dräger.

Safety

Follow Instructions for use

WARNING

Strictly follow these Instructions for use. Any use of the software requires a full understanding and strict observation of all portions of these instructions. The software is only to be used for the purpose specified under Intended Use on page four and in conjunction with appropriate patient monitoring. Observe all **WARNING** and **CAUTION** statements as rendered throughout this manual, as well as all statements on device labels.

Definitions

Certain paragraphs within these instructions are highlighted as **WARNING**, **CAUTION** or **NOTE** as follows:

WARNING

A **WARNING** statement provides important information about a potentially hazardous situation that, if not avoided, could result in death, or serious injury.

CAUTION

A **CAUTION** statement provides important information about a potentially hazardous situation that, if not avoided, may result in minor or moderate injury to the user or patient or in damage to the equipment or other property.

NOTE

A **NOTE** provides additional information intended to avoid inconvenience during operation.

Connection to IT networks

Many medical devices manufactured by Dräger use networks to transmit patient data and to notify clinical users of alarm conditions. Hospitals should refer to IEC 80001-1 before attempting to connect such medical devices to their IT networks.

Intended use

The Infinity Gateway software applications are intended to provide clinicians with the capability of viewing patient data remotely via the Infinity network and for data exchange of select clinical and administrative information between the Infinity network and the hospital network.

Service-oriented device connectivity (SDC)

Service-oriented device connectivity (SDC) defines a communication architecture to establish distributed systems of medical devices in clinical environments, for example, high-acuity environments. The protocol is built on the principles of service-oriented medical device architecture (SOMDA) and is modeled after ISO/IEEE 11073. SDC-enabled devices facilitate interoperability across Dräger SDC-compatible products by allowing the request of unidirectional data and/or the remote control of predetermined medical device functionality in a safe manner.

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Pager Control Overview

The Infinity Gateway Pager Interface option interfaces patient monitors on the Infinity network with a paging system via a serial or TCP/IP interface. Once patient monitors are configured into the application, pages are sent to the pager system when the patient monitors go into alarm.

The Infinity Gateway Pager Interface implementation consists of:

- Pager Access Setup
- Pager Service
- Pager Control Application

Pager Access Setup

The Infinity Gateway Pager Interface option is enabled via the Infinity Gateway Setup program. When the interface is enabled, the administrator must specify the:

- Protocol to be used to communicate with the pager system
- Policies to be followed
- Pager message format to be used
- Alarm grade settings

Whenever changes are made to the Pager Access Setup, the interface to the pager system is interrupted and restarted. Refer to the help on the Infinity Gateway Setup and Installation User's Guide for more details about enabling and setting up Pager Access.

WARNING

Pager Access does not guarantee delivery of all pages. An Infinity CentralStation must be used in conjunction with Pager Access.

Pager Service

The Infinity Gateway Pager Interface Option is implemented by a Windows service called Pager. This service listens to configured patient monitors on the Infinity Network and sends pages to the pager system. The Pager Interface does not support SDC-Only devices.

Pager now supports single-byte characters in the patient name, ID, and provider fields. However, the paging protocols only support single-byte characters, so character mapping functionality is now provided as well. Please refer to the Infinity Gateway Setup guide for more information on character mapping.

Pager Control Application

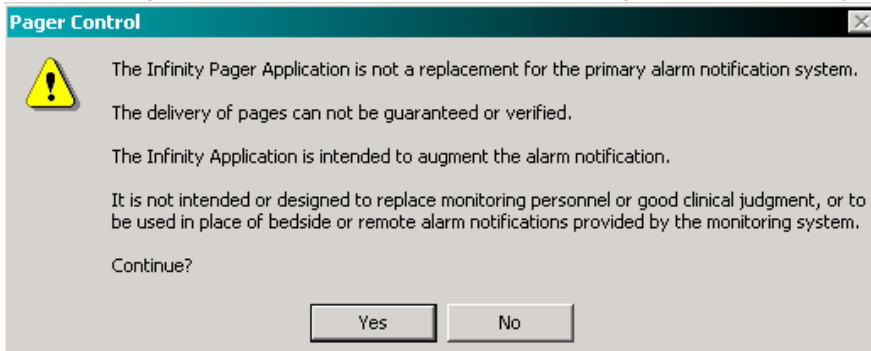
The Pager Control application is a run-time configuration and status utility for the Infinity Gateway Pager Interface Option. It consists of a **Main Screen**, a **Configuration Window**, and an **Alerts** Window.

CAUTION

Pager Control should always be displayed whenever the Pager Access interface is active because it is the primary mechanism used in communicating to the user any problems encountered with the Paging interface.

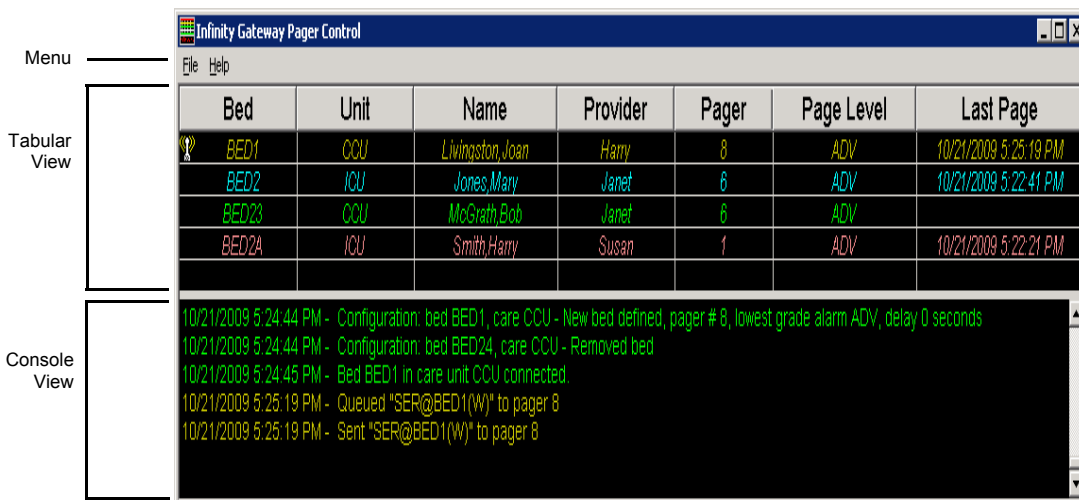
Disclaimer

When the Pager Control application is started, the following disclaimer is displayed:



If the user presses **No**, then the Pager Control application is aborted immediately. If the user presses **Yes**, then the **Main Screen** displays.

Main Screen



The Main Screen of the Pager Control includes:

- A Tabular View of configured patient monitors that includes settings and paging activity.
- A Console Window that provides a chronological log of events, such as configuration changes and page transmission status.
- A menu that contains:

Menu	Item	Function
File	Configure	Opens Pager Control configuration screen
	Exit	Exits the Pager Control application
Help	Help Topics	Displays Pager Control Help
	About Pager Control	Displays version information

Tabular View

The screenshot shows the 'Infinity Gateway Pager Control' application window. It features a menu bar with 'File' and 'Help'. Below the menu bar is a table with the following columns: Bed, Unit, Name, Provider, Pager, Page Level, and Last Page. The table contains four rows of data. Below the table is a log window showing a series of events with timestamps and descriptions.

Bed	Unit	Name	Provider	Pager	Page Level	Last Page
BED1	CCU	Livingston, Joan	Harry	8	ADV	10/21/2009 5:28:59 PM
BED2	ICU	Jones, Mary	Janet	6	ADV	10/21/2009 5:31:16 PM
BED23	CCU	McGrath, Bob	Janet	6	ADV	
BED2A	ICU	Smith, Harry	Susan	1	ADV	10/21/2009 5:27:51 PM

Log entries:

- 10/21/2009 5:28:59 PM - Queued "ADV@BED1(W)" to pager 8
- 10/21/2009 5:28:59 PM - Sent "ADV@BED1(W)" to pager 8
- 10/21/2009 5:29:25 PM - Queued "SER@BED2" to pager 6
- 10/21/2009 5:29:27 PM - Sent "SER@BED2" to pager 6
- 10/21/2009 5:31:16 PM - Queued "SER@BED2" to pager 6

The table contains one row for each patient monitor configured into Pager Access. Data related to each patient monitor is organized into columns.

The Tabular View and its individual columns can be resized, and the rows can be sorted.

Some configuration changes are supported from within the Tabular View. These include Editing The Delay Setting and Editing the Alarm Level Setting.

Rows

Row color descriptions are as follows:

Background	Foreground	Description
Gray	Yellow	The patient monitor is not currently available on the network.
Red	Black	A high-priority alarm has been queued, but not yet sent to the pager assigned to the patient monitor.
Yellow		A medium-priority alarm has been queued, but not yet sent to the pager assigned to the patient monitor.
Cyan		A low-priority alarm has been queued, but not yet sent to the pager assigned to the patient monitor.
Black	Green	There are no alarms pending, and no alarms have been sent to this patient monitor.
	Red	There are no alarms pending for this patient monitor. The last alarm that occurred at this patient monitor was a high-priority alarm.
	Yellow	There are no alarms pending for this patient monitor. The last alarm that occurred at this patient monitor was a medium-priority alarm.
	Cyan	There are no alarms pending for this patient monitor. The last alarm that occurred at this patient monitor was an low-priority alarm.

NOTE

When an alarm occurs at a patient monitor, a page is queued for the patient monitor. If the page is not successfully transmitted to the pager system, the corresponding row in the table will remain highlighted indefinitely in red, yellow, or cyan, depending on the priority of the alarm. The user can clear the highlight by left-clicking in a non-editable column on the corresponding row.

Columns

Column	Contents
Bed	<p>The bed label of the patient monitor. If the patient monitor is a wireless monitor, it will also contain a wireless icon.</p> <p>Note: Wireless and wired patient monitors that are in the same care unit and have the same bed label are automatically assigned to the same pager, and they appear only once in the list.</p>
Unit	The care unit to which the patient monitor belongs.
ID/Name	The name or identifier of the patient admitted to the patient monitor. A setting in the Pager Setup dialog in the Infinity Gateway Setup controls whether the patient's name or identifier is displayed.
Provider	The name of the care provider responsible for this patient.
Pager	<p>The pager number of the care provider responsible for this patient.</p> <p>Note: When the pager number appears in bold, this indicates that the last page was sent to the escalation pager instead of the pager assigned to the patient monitor.</p>
Delay	<p>The number of seconds of delay that an alarm condition must exist before a page is generated.</p> <p>This column will not appear if the Delay Setting Allowed policy is set to No in Pager Access setup.</p>
Page Level	The lowest alarm priority level for which pages should be generated, or OFF if no alarm is ever to be paged.
Last Page	The date and time the last page was sent for this patient monitor since Pager Control was started. The format of the date and time string is determined by the date and time settings in Regional Options.

Resizing

The columns in Pager Control may be resized by placing the mouse in between two columns. Once properly placed, the mouse cursor changes to the column resize cursor. Click the left mouse button and hold while moving the mouse to resize the columns.

Moving the resize cursor to the left makes the column to the left of the cursor smaller and the column to the right of the cursor larger. Moving the cursor to the right has the opposite effect. Each column, however, has a minimum size; once reached, the column cannot be made smaller.

In addition to resizing individual columns, the entire Tabular View can be resized by changing the size of the window using conventional window resizing methods. Whenever the window is resized, each column is scaled proportionately, whenever possible; however, minimum column sizes will not be violated. In addition, the height of the window can never be made smaller than is required to display all the bedside monitors.

If the height of the window is set to the minimum allowable height and a new bed is added to the configuration, the window size will automatically be resized to accommodate the new row.

Whenever the window or individual columns are resized, the new layout will automatically be saved. This new layout will then be used the next time Pager Control is restarted.

Sorting The Rows

The rows in the Tabular View can be sorted by any column by simply clicking the column header. The rows will remain in the new order indefinitely, but will not be automatically resorted when the contents of a column changes. Any new row created, however, will be inserted into the table according to the last sort order.

For example, the user sorts the table by the last page column. This will cause all of the rows that represent unpagged patient monitors to be displayed at the top of the screen. If one of the beds is pagged later, the last page column for that entry will be updated to a newer timestamp. However, the row will not be automatically moved to the bottom of the screen; it will stay in the same position until a row is added or deleted, or until the user re-sorts the rows by pushing a column header.

At startup the Pager Control Tabular View is always sorted by bed label.

Editing The Delay Setting

- 1 Click on the desired item with the left mouse button and an edit box will appear in place.



Pager	Delay	Page
19	0	9
19	0	9

- 2 Using the keyboard, enter the new value desired for delay for the selected patient. The delay can range from 0 to 30 seconds.
- 3 Press **Enter** to save the changes.
Press **Escape** or click the left mouse button anywhere on the Tabular View to abort the edit.

Editing the Alarm Level Setting

NOTE

If the hospital alarm level policy requires all configured patient monitors to be paged on all alarm priorities, the user will not be permitted to edit the alarm level setting. Refer to the Infinity Gateway Setup help for more details.

To edit the alarm level setting

- 1 Click on the desired item with the left mouse button. A list of choices will appear.



- 2 Using the mouse, left click on the up or down arrow until the desired setting is displayed.

NOTE

The available settings will vary depending on the hospital's alarm level policy.

- 3 Press **Enter** to save the changes.
Press **Escape** or click the left mouse button anywhere else on the Tabular View to abort the edit.

Console Window

```

9/24/2002 10:02:05 PM - Queued "PA S < 30@BED1" to pager 11
9/24/2002 10:02:06 PM - Sent "PA S < 30@BED1" to pager 11
9/24/2002 10:02:37 PM - Queued "HR.Asystole@BED1" to pager 11
9/24/2002 10:02:37 PM - Sent "HR.Asystole@BED1" to pager 11
9/24/2002 10:03:12 PM - Configuration: bed BED2, care CU1 - changed pager number to 19
    
```

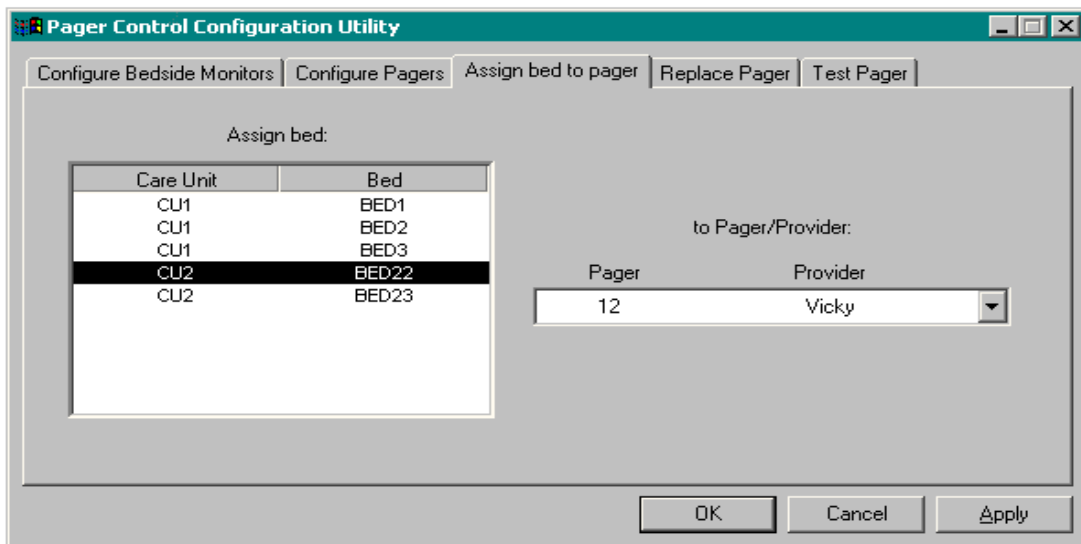
The Console Window contains a log of up to 100 events that have occurred since Pager Control was started. Each event is marked with the corresponding date and time of the event. The format of the date and time is controlled through Regional Options.

The Console Window has an associated scrollbar. If the scrollbar is positioned all the way to the bottom, then the window automatically scrolls as new logs are entered into the window. However, if the scrollbar is placed at any other position, the window is not automatically scrolled.

The text entries in the console are color coded as follows:

Color	Description
Orange	Error message
Blue	Warning message
Green	Informational message
Red	Message relates to a high-priority page
Yellow	Message relates to a medium-priority page
Cyan	Message relates to a low-priority page

Configuration Window



CAUTION

Pager Control configuration is under password protection.

The Pager Control configuration allows the user to:

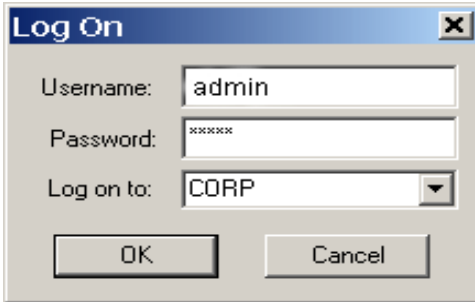
- Configure patient monitors into Pager Access
- Configure Pagers and define the care providers that are responsible for the pager
- Assign Bed monitors to pagers/care providers
- Replace a Pager when a pager is malfunctioning or due to a shift change
- Test a Pager by sending a test message

NOTE

Changes made on any pages are visible only within the Pager Control Configuration dialog until the **Apply** or **OK** buttons are pressed, at which point the changes actually take effect.

Security

The Pager Control Configuration is password protected to limit access to the configuration functions. When the Configuration screen is opened, the user is prompted for a username and password.

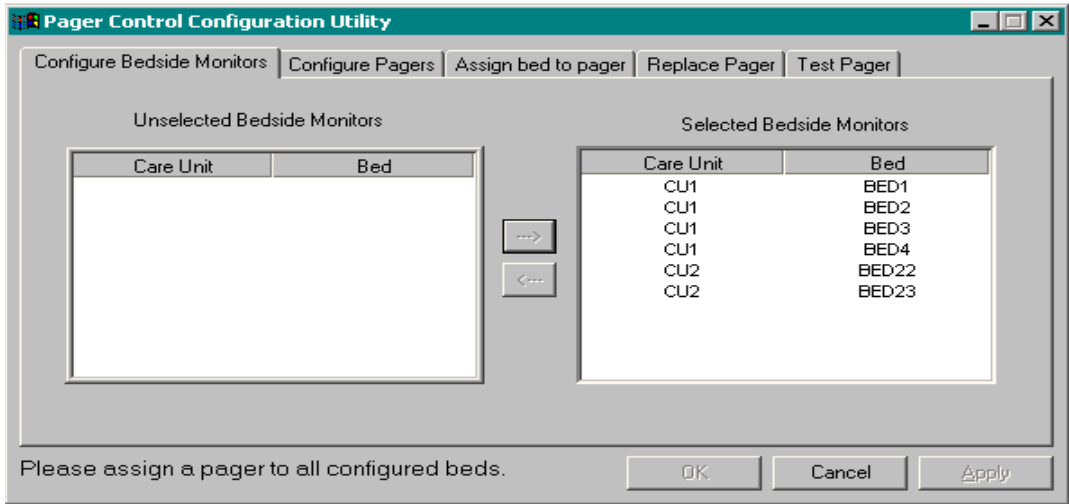


For the user to be granted access to the Pager Control Configuration screens:

- The **Username**, **Password**, and **Log on to** (domain) fields must correspond to a valid user account on the Infinity Gateway.
- A group named PagerConfig must exist on the Infinity Gateway.
- The username must be a member of the PagerConfig group.

Configure Bed

This dialog is used to configure patient monitors into Pager Access:

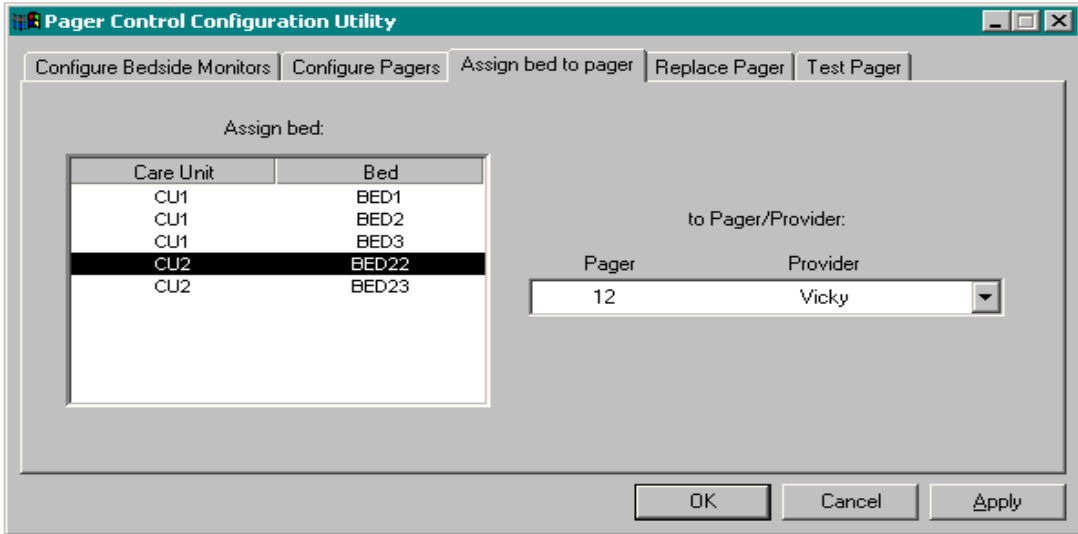


The Unselected Bedside Monitors panel lists all patient monitors that are visible on the Infinity network that have not yet been configured into Pager Access. The Selected Bedside Monitors panel lists all patient monitors which have already been configured into Pager Access.

Pressing the right-facing arrow moves a patient monitor listed in the unselected list into the selected list. Pressing the left-facing arrow moves a patient monitor listed in the selected list into the unselected list.

NOTE

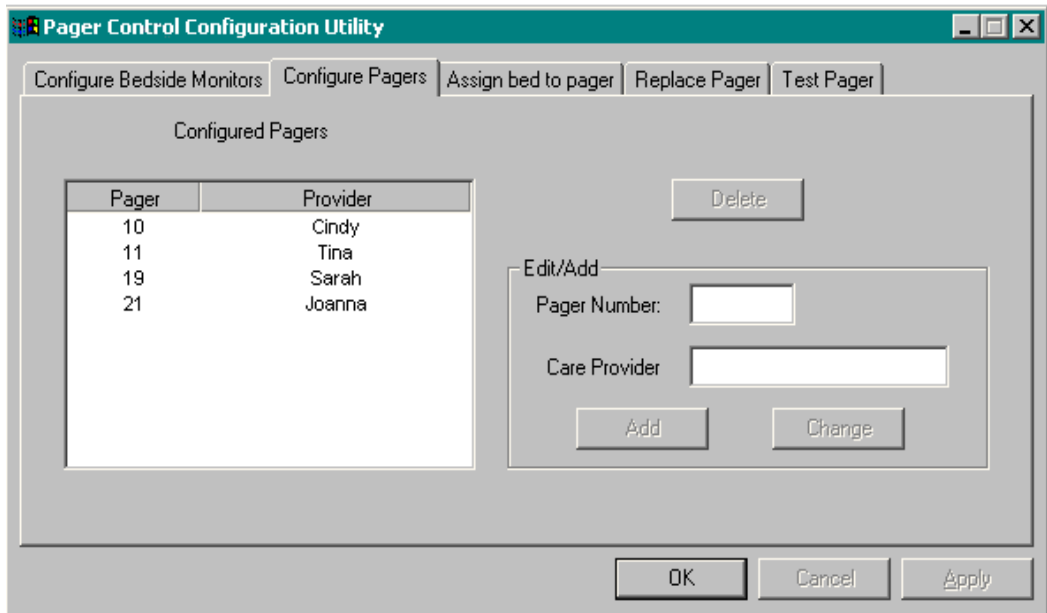
Once a bed has been added to the selected list, a message appears in the lower left hand corner indicating that a pager number must be assigned to the newly configured bed. The **Apply** and **OK** buttons are disabled until all beds in the configuration have been assigned pagers.



NOTE

Wireless and wired patient monitors that are in the same care unit and have the same bed label appear only once in either the selected or unselected list.

Configure Pagers



This dialog box is used to configure the list of pagers and to assign pagers to the care providers that are responsible for them. Once a pager is configured, patient monitors can be mapped, or assigned, to the care provider responsible for the pager.

The Configure Pagers screen can be used to:

- Add a Pager
- Delete a Pager
- Change a Provider associated with the pager
- Replace a Pager

Add a Pager

To add a pager, deselect any entry previously selected from the pager list by clicking on the selected entry. Then enter the pager number and care provider in the appropriate fields. Finally, press the **Add** button.

Adding a pager will automatically cause a test message to be sent to the new pager.

Delete a Pager

To delete a pager, select the pager from the list, then press the **Delete** button.

CAUTION

All patient monitors assigned to this pager will automatically be unconfigured from Pager Access.

Change a Provider

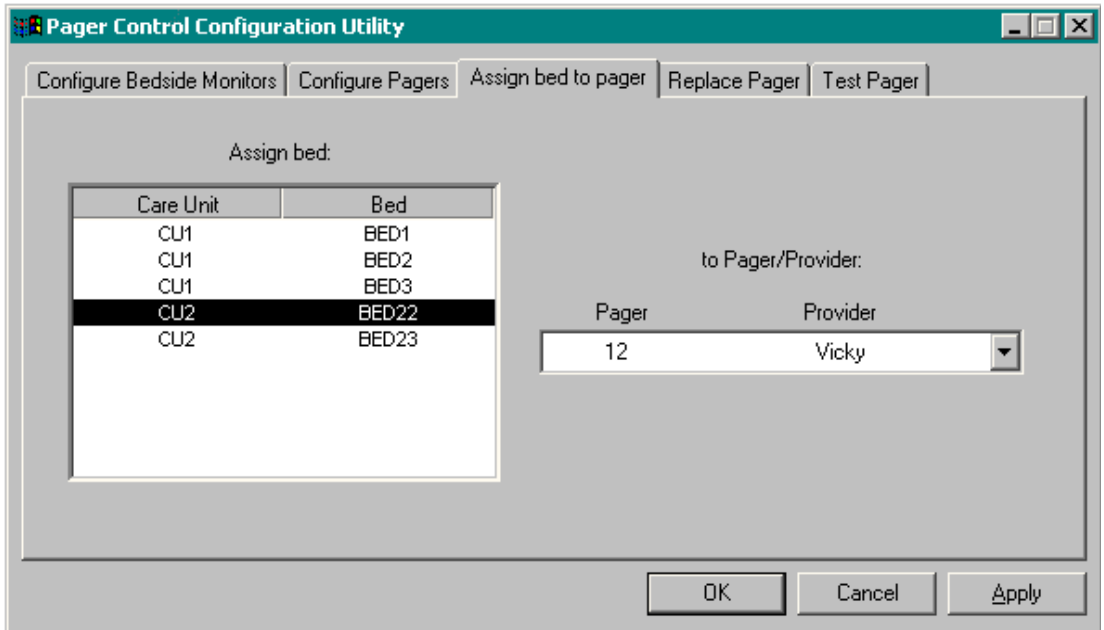
To modify the care provider name associated with a pager, select the pager from the list of pagers, edit the care provider field, then press the **Change** button.

Replace a Pager

To replace a pager, select the pager from the list, modify the pager number field with a number that does not already exist in the list, and press the **Change** button.

Replacing a pager will automatically reassign all patient monitors assigned to the old pager to be assigned to the new pager. In addition, the old pager number will be deleted from the list, and a test message will automatically be transmitted to the new pager.

Assign Bed

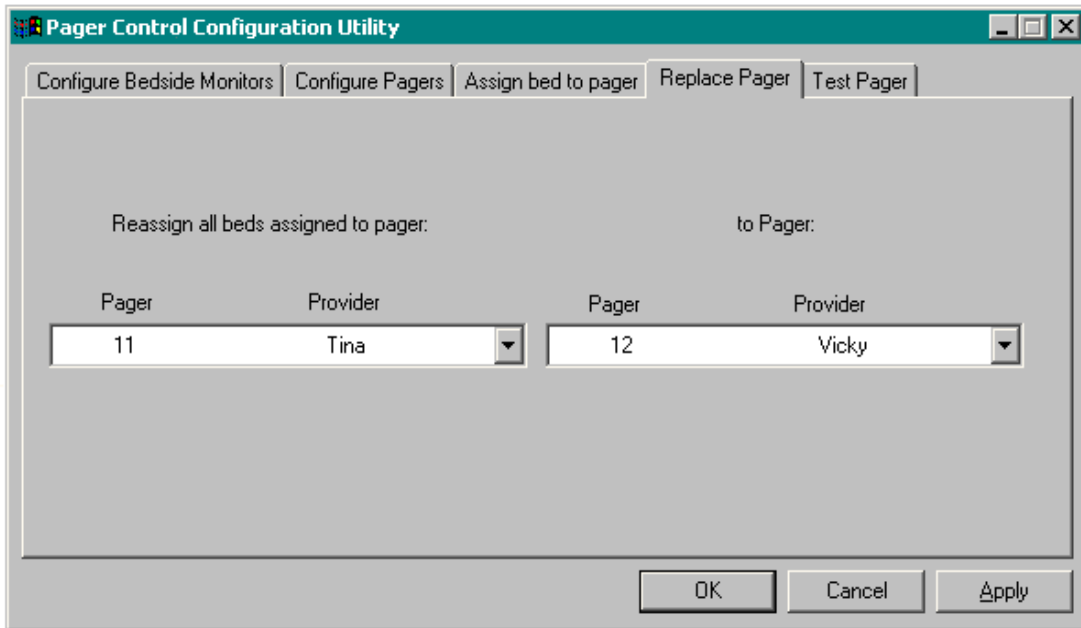


To assign a bed to a pager, select the Care Unit/Bed from the **Assign bed:** list. Then select the Pager/Provider number from the **to Pager/Provider:** pull-down list.

NOTE

Wireless and wired patient monitors that are in the same care unit and have the same bed label are automatically assigned to the same pager and appear only once in the list.

Replace a Pager

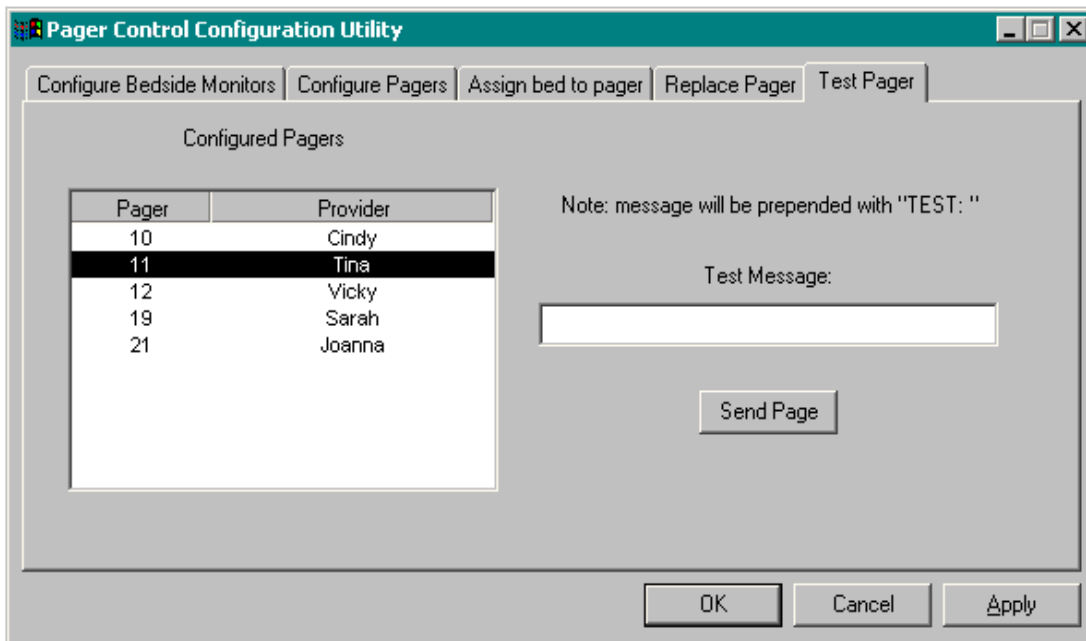


To replace a pager, select the pager to be replaced from the **Reassign all beds assigned to pager:** pull-down list. Then select the new pager from the **to Pager:** pull-down list.

NOTE

Unlike replacing a pager in the Configure Pagers tab, no test page message is automatically generated, and the old pager number remains in the list of configured pagers.

Test a Pager



To send a test page message, select the pager to be tested from the **Configured Pagers** list. Enter the desired text in the **Test Message:** field. Then press the **Send Page** button.

NOTE

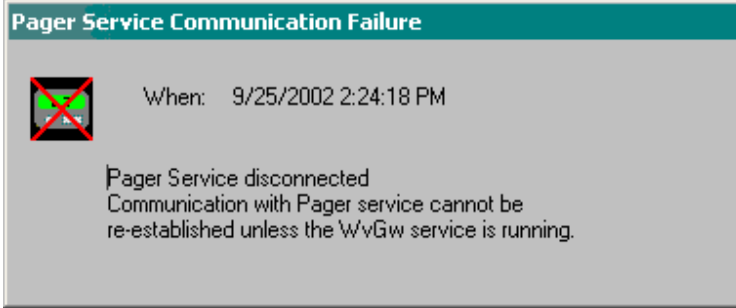
All test messages have the label, "TEST: ", and they are sent to the pager with the same settings as a low-priority page.

Alerts

Pager Control displays an Alerts screen whenever a serious problem is encountered by the Pager Service or the Pager Control application. These alerts include:

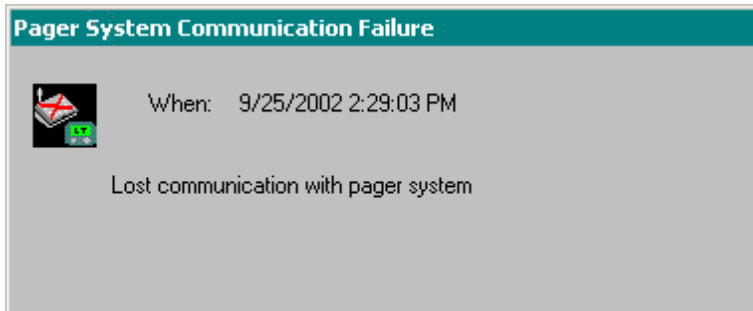
- Pager Service disconnected
- Lost Communication with Pager System
- Lost Communication with Gateway Service
- Patient Monitor Alarm Time-Out
- Duplicate Bed Label

Pager Service Disconnected



This alert is displayed when Pager Control has lost communication with the pager service. The most likely cause of this problem is that the Pager Service has been stopped. Because of this condition, it is impossible for Pager Control to monitor any paging and alarm activity on the Infinity Network.

Lost Communication with Pager System

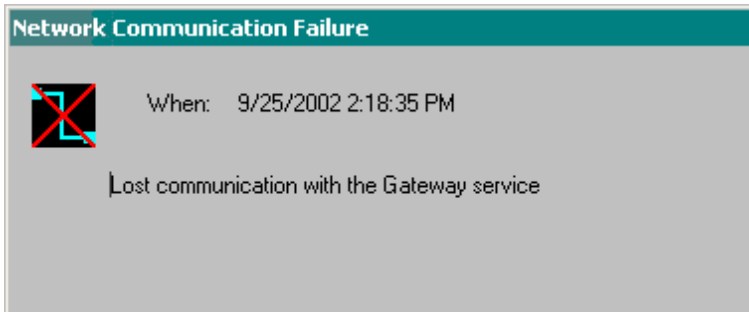


This alert is displayed when the pager service has lost communication with the pager system and can no longer send pages.

Possible causes of this problem are:

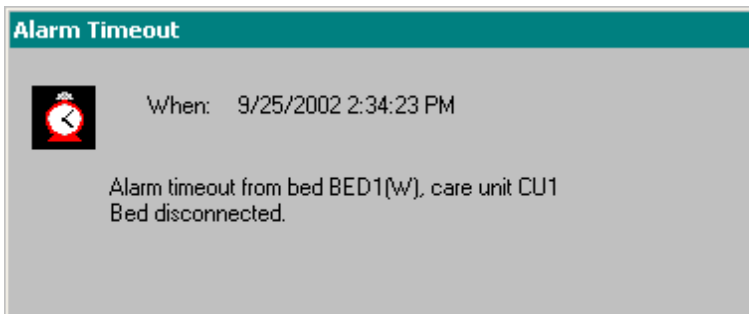
- The connection to the pager system has been disconnected.
- The pager system has been shut down.
- The pager service is improperly configured (protocol, serial connection parameters) for the pager system.

Lost Communication with Gateway Service



This alert indicates that the pager service (pager) has lost communication with the Gateway service (WvGw), and by extension, it has lost communication with the Infinity Network. The probable cause of this alert is that the Gateway service has been shut down.

Patient Monitor Alarm Time-Out

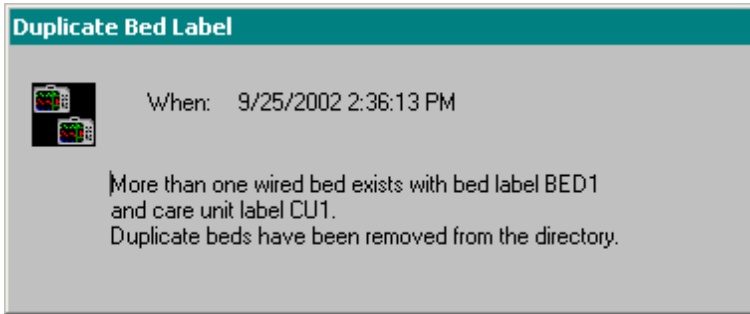


This alert indicates that the pager service has not received alarm information from the patient monitor for more than 10 seconds. Possible causes are:

- The patient monitor was removed from the docking station.
- The patient monitor was powered off.
- The patient monitor was disconnected from the network.
- There was a network bandwidth problem.
- There was a Gateway Infinity Server performance issue.

Once an alarm time-out has occurred, the patient monitor is automatically disconnected. It is not reconnected for at least one minute, and then only if it still appears on the network.

Duplicate Bed Label



There are two patient monitors within the care unit that cannot be distinguished by bed label, care unit label, and wireless designator. When this condition occurs, both patient monitors are automatically disconnected and will remain disconnected until the bed identification is unique.

Possible causes of this problem are:

- A patient monitor is improperly configured.
- Two wireless patient monitors have been docked into and then removed from the same docking station, and neither has subsequently been docked to another docking station.

Wireless Patient Monitors

The Infinity Network supports wireless network connectivity of patient monitors. There are two wireless monitor modes:

- Seamless viewing mode
- Transport mode

NOTE

The term wireless refers only to wireless patient monitors in Seamless Viewing mode.

Wireless patient monitors assume the bed label and care unit label of the particular Infinity Docking Station on which they are placed.

When wireless patient monitors configured for 'Transport mode' are undocked from the docking station, the patient monitor automatically changes to a preassigned unique bed label.

When wireless patient monitors in Seamless Viewing mode are undocked, however, they retain the same bed label and care unit label as the Infinity Docking Station.

Patient Monitor Identification and Wireless Icon

Patient monitors are identified by their bed label and care unit label. Unique identification of the devices is not always possible in configurations where wireless patient monitors are set up in Seamless Viewing mode. For this reason, the wireless icon is used to distinguish these beds from their wired counterparts

NOTE

The wireless icon is used only with wireless patient monitors in Seamless Viewing mode, and not with wireless patient monitors in Transport mode.

Pager Control Configuration

Wireless patient monitors in Seamless Viewing mode are configured for the Infinity Gateway Pager Interface in the same manner as a wired patient monitor.

NOTE

When a wired patient monitor and a wireless patient monitor share the same bed/device label and same care unit label, Infinity Gateway will assign both to the same pager, and any changes made to delay and alarm level settings will also apply to both.

Tabular View

The Tabular View reserves one row for each configured patient monitor. When the patient monitor is not active, the row appears grayed. When the patient monitor is active, the row is not grayed.

Since wireless monitors in Seamless Viewing mode share the same configuration as their wired counterparts, no row is reserved for the wireless monitors. When a wireless patient monitor comes online to the Infinity Gateway Interface Option, a new row will be allocated if the wired patient monitor of the same name is active. If the wired patient monitor of the same name is inactive, the wireless patient monitor will occupy the row reserved for that patient monitor.

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These Instructions for Use only apply to
**Infinity® Gateway Suite Pager Control User
Guide VF9.n**

with the Serial No.:

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