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Tek-ALERT Integration Manager

Installation Manual

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Tek-Alert Wireless Nurse Call Installation Manual

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Introduction

The LS600 Tek-ALERT Integration Manager License imports events and messages from one or more monitored foreign systems and displays them together in one place. Tek-ALERT can monitor any system with a data port, such as a pager or printer output, that uses the TAP, COMP2, TCP/IP, UDP, or serial protocol. Examples include:

- Fire alarms,
- Security systems,
- Building automation systems,
- TekTone's Tek-CARE NC110, NC150, NC200, TC300II, and TC700 nurse call systems via one or more paging interface adapters (voltage interfaces).

  NOTE: Tek-ALERT Integration Manager provides ancillary annunciation to life safety systems, and must not be used as the only means of annunciation for any nurse call, emergency call, fire, security, or other life safety system.

The Tek-ALERT Integration consists of two components: The NC475 Tek-CARE Appliance Server with the LS600 Tek-ALERT Integration Manager License, and the CT601 Tek-ALERT Serial to IP Converter. Refer to **Figure 1 on page 6** for an overview of the Tek-ALERT system.

The LS600 Tek-ALERT Integration Manager License runs on an NC475 Tek-CARE Appliance Server as part of the Tek-CARE platform, displaying calls on the master station or via Tek-CARE Event Monitor App for Windows running on any networked PC in the facility.

The NC475 Tek-CARE Appliance Server with the LS600 Tek-ALERT Integration Manager License uses the facility's LAN for these communications:

- Each foreign system monitored by Tek-ALERT connects to the facility's LAN. HL7 systems connect directly to the LAN; other systems connect via a CT601 Tek-ALERT Serial to IP Converter. The monitored foreign system uses the LAN to send its events and messages to the Tek-ALERT software.
- The included Tek-CARE Reporting System software can be accessed by networked computers via a web browser.
- Up to 255 networked computers can run the LS477 Remote Event Monitor to view all system events and messages as they occur.

Events from monitored foreign systems are fully integrated into the TekTone platform being used. If the platform includes a paging transmitter and pagers, foreign events can automatically send pages to selected staff members. If the platform includes LS453 Email Output software, foreign events can automatically send email and text messages to the mobile app. If the platform includes a telephone interface system and wireless telephones, foreign events can automatically send text messages to the wireless telephones of selected staff members.

Figure 1 - Tek-ALERT System Overview
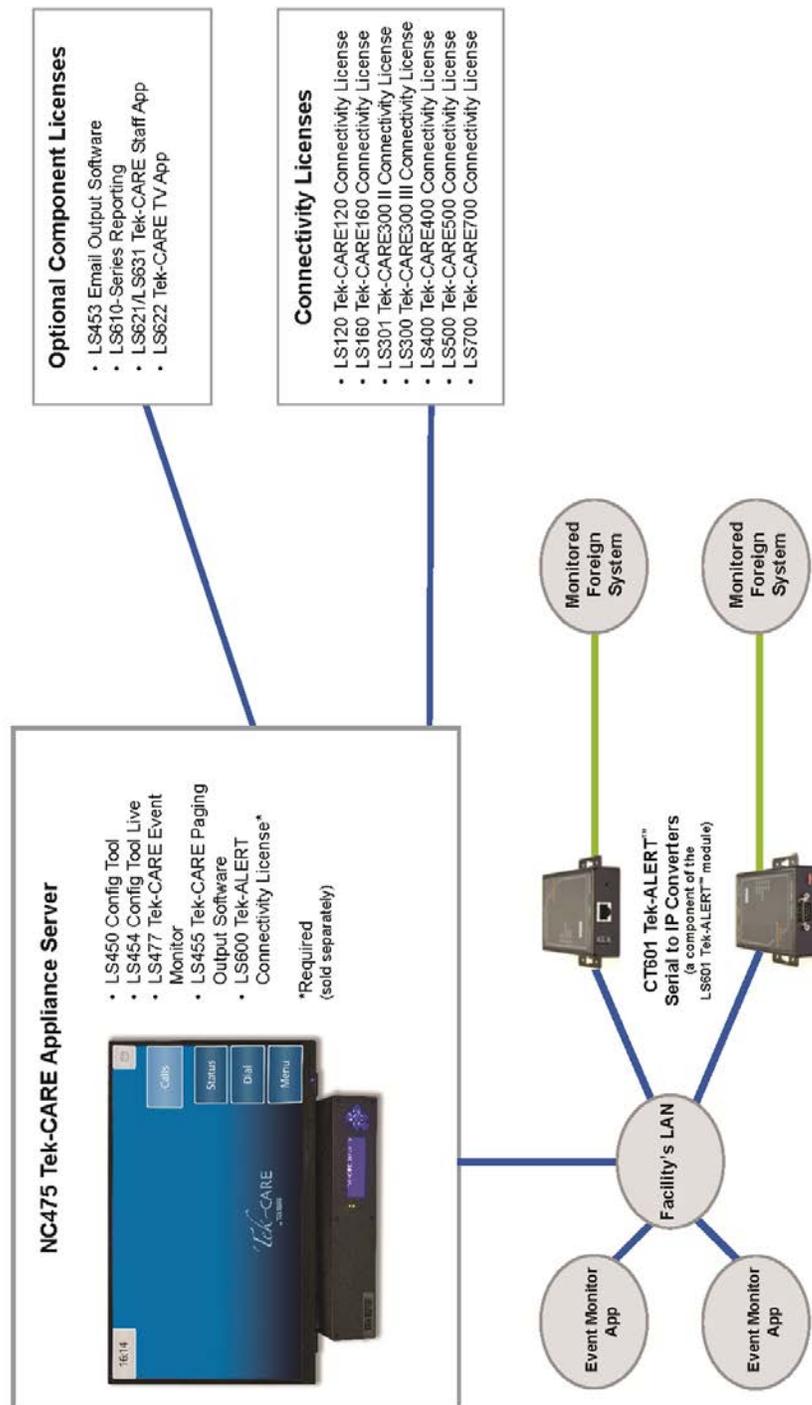
Workflow

Below is a general example of the workflow for integrating the Tek-CARE system with foreign systems.

1. Set up the NC475 Tek-CARE Appliance Server and add the LS600 Tek-ALERT Integration Manager License. See **Set Up a New NC475 Tek-CARE Appliance Server on page 8**.

2. Connect and configure the CT601. See **Connect Foreign Systems to the LAN on page 11**.

3. Install and open the LS450 ConfigTool Software on the programming laptop.

4. Create a foreign rule set. See **Create a Foreign Rule Set on page 13**. This acts as a system-wide definition, providing everything needed to translate foreign events and messages to the Tek-CARE system. Rule Sets can be shared across multiple interfaces of the same type, so each has to be defined only once.

5. Create or import foreign device rules. See **Create Foreign Rules on page 14** and **Import Foreign Device Rules on page 21**.

6. Create an Interface. See **Create an Interface on page 21**. Define the port, protocol, and options required to read messages from the foreign system. Assign the interface to the Rule Set previously created.

7. Create a new serial port. See **Create a New Serial Port on page 21**.

8. Set up hardware behaviors (**Set up Hardware Behaviors on page 24**) that correspond to the actions assigned in the foreign rules. These behaviors map call inputs to call types.

9. Create or add foreign devices and assign them to the interface created in step 2. Foreign devices have inputs that rules can target to place calls, and to send text messages to assigned staff. Tek-ALERT uses foreign device IDs to display the corresponding foreign events and messages. **Add Foreign Devices on page 22** or **Import Foreign Devices on page 23**.

10. Configure or add the rest of the applicable features for the facility. Add staff, assignments, email, paging, etc.

11. Go to **File>Save Configuration** to save changes and **File>Consistency Check** to find and correct any issues. Select **File>Commit Configuration To System** to upload the configuration to the Tek-CARE Network. Once the upload is complete, the system will reboot.

12. Test the system before releasing it to the facility.

Set Up a New NC475 Tek-CARE Appliance Server

Have these manuals available when working with NC475 Tek-CARE Appliance Server:

- IL1130 Tek-CARE750 Fall Detection and Monitoring System Installation Manual (this manual).
- IL1012 NC475 Tek-CARE Appliance Server Installation Manual.
- IL855 LS450 ConfigTool Manual.

NC475 Tek-CARE Appliance Server Hardware

The NC475 Tek-CARE Appliance Server is the head-end module for the Tek-CARE platform. Refer to **Figure 2** below for NC475 Tek-CARE Appliance Server Connections.

- The facility's local area network (LAN) connects via ethernet cable to the facility LAN port.
- The Tek-PAGING pager transmitter connects via serial cable to the COM3 serial port.
- COM2 and COM5 can be configured to connect a foreign system to the Tek-CARE platform.

Figure 2 - NC475 Appliance Server Connections
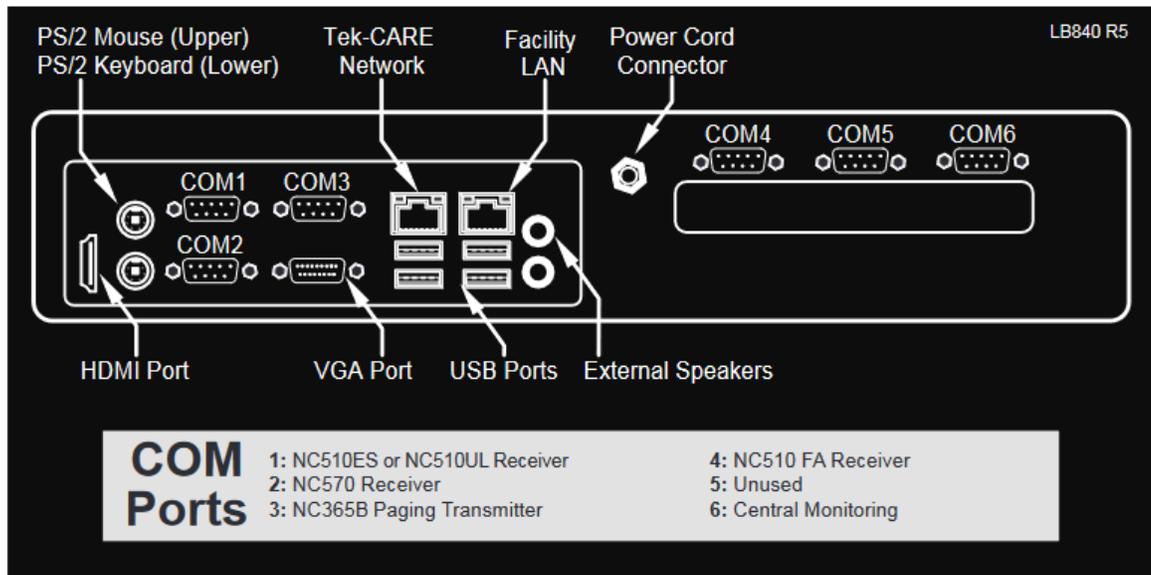
Software Configuration Options

TekTone offers several software licenses that run on the NC475 Tek-CARE Appliance Server.

LS750 Tek-CARE750 Integration License will import data from a foreign system to the Tek-CARE platform.

LS450 ConfigTool is used to set up/customize the Tek-CARE750 system including monitored foreign devices, and to save the system configuration.

Add-on license options:

LS453 Email Output enables email addresses to be treated as devices that can be assigned to individual staff members. The software sends calls and other events via email or text message to the assigned staff members.

LS477 Event Monitor displays events and messages from foreign systems that the Tek-ALERT system monitors.

The Tek-CARE Reporting System records all activity on the NC475 Tek-CARE Appliance Server and provides custom reports on this activity for followup review and evaluation by management. All reports may be printed to hard copy, as required. When connected to a facility's LAN, the reporting system may be accessed by any networked computer via a web browser.

Adding Tek-ALERT to the Tek-CARE Platform

Purchasing and Installing the LS600 Tek-ALERT Integration Manager License

Contact TekTone Sales department to purchase the LS600 Tek-ALERT Integration Manager License.

Tech Support will send the license file to download once the license has been purchased through TekTone. After receiving the license file from TekTone, the license must be downloaded onto the programming laptop and then onto the NC475 Tek-CARE Appliance Server. If the NC475 Tek-CARE Appliance Server has not been installed yet, see IL1012 NC475 Tek-CARE Appliance Server Installation and Operation Manual for more information.

Shut down any Tek-CARE software running on the programming laptop, and double-click the license file to install the LS600 Tek-ALERT Integration Manager License. Acknowledge any Windows® security warnings to allow installation.

Downloading Software Updates

Once the LS600 Tek-ALERT Integration Manager License has been purchased and downloaded, the LS450 ConfigTool Software updates must be installed.

> **IMPORTANT**: System settings return to the default configuration after being updated. Be sure to save the nurse call system configuration before and after the software update so that you do not lose your programmed configuration.

Before updating the software, go to **File>Save Configuration**. Choose a destination on the programming laptop for a backup of the current configuration.

To get the latest software updates, go to **https://www.tektone.com/resources/**. Go to **Tek-CARE Software Updates** and follow the prompts to find the latest updated version of the LS450 ConfigTool. Install the LS450_setup_xxxx.exe on the programming laptop connected to the Tek-CARE Network.

Updating the Tek-CARE System in the LS450 ConfigTool

Start the LS450 ConfigTool software by double-clicking the LS450 ConfigTool icon on the programming laptop. Select the IP address of the network interface that is connected to the Tek-CARE network.

These next steps can be done in no particular order and only need to be done if there are other modules on the Tek-CARE platform. This process may take several minutes to complete.

- Select **Utilities>NC475 License Update**.
- Select **Utilities>NC475 Update Server**.
- Select **Utilities>Upgrade Modules**.
- Select **Utilities>Upgrade NC120/NC160/NC455CE/NC356CE Modules** to update GEN2 modules.

Connect Foreign Systems to the LAN

Connect the serial data port of the foreign system to the facility's LAN using a CT601 Serial to IP Converter, as described next. (HL7 foreign systems connect directly to the facility's LAN.)

Figure 3 - CT601 Data/Console Switch

Configure the CT601 Serial to IP Converter

If using Hyperterminal, follow these instructions:

1. Connect a CT601 Serial to IP Converter to an unused USB port on the technicians programming laptop, using the 9-pin serial cable included with the CT601.
2. Download and install HyperTerminal if not already on the programming laptop.
3. Run HyperTerminal. Go to **File>New Connection** and click **OK**. In the **Connect Using** drop-down box, select the COM port that the CT601 is connected to, and click **OK**.
4. Use these settings: Bits per second: 9600, Data bits: 8, Parity: None, Stop bits: 1, Flow control: None. Click **OK**.
5. Move the switch on the CT601 Serial to IP Converter to the Console position (see **Figure 3 on page 11**). Log in using Username: root hit ENTER and Password: root and hit ENTER. (The login information is case sensitive. Make sure both username and password are both lowercase.) The main menu will be displayed.
6. Select 1 (IP configuration) and then select 2 to enter the IP Address. Press ENTER again.
7. Hit ESC to go back to the main menu.
8. Select 2 (Serial port configuration). Select 7 (Host mode), and then select 7 (Telnet Server) to correctly configure the serial port. Press Enter. When finished, press ESC to return to the main menu.
9. Select 7 (Save and reboot). Move the switch on the CT601 Serial to IP Converter to the Data position.
10. Connect the CT601 to the foreign system's serial output port using the included serial cable. Then connect the CT601 to the facility's network using an Ethernet cable (not included).

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If using Putty, follow these instructions:

1. Connect a CT601 Serial to IP Converter to an unused USB port on the technician's programming laptop, using the 9-pin USB to serial converter cable included with the CT601.

2. Download and install Putty before connecting foreign systems if not already installed on the programming laptop.

3. Open **Device Manager** find the Comport number for the USB to serial adapter.

4. Open Putty on the desktop. Select Serial and enter the Comport number that was shown in the device manager. Set the speed to 9600. Select Open.

5. Move the switch on the CT601 Serial to IP Converter to the Console position (see **Figure 3 on page 11**). Log in using Username: root (then press ENTER) and Password: root (then press ENTER). (The login information is case sensitive. Make sure both username and password are both lower-case.) The main menu will be displayed.

6. Select 1 (IP configuration) and then select 2 to enter the IP Address. Press ENTER again.

7. Hit ESC to go back to the main menu.

8. Select 2 (Serial port configuration). Select 7 (Host mode), and then select 7 (Telnet Server) to correctly configure the serial port. Press ENTER. When finished, press ESC to return to the main menu.

9. Select 7 (Save and reboot). Move the switch on the CT601 Serial to IP Converter to the **Data** position.

10. Connect the CT601 to the foreign system's serial output port using the included serial cable. Then connect the CT601 to the facility's network using an Ethernet cable (not included).

Configure Foreign Devices on the NC475

The Tek-ALERT Integration Manager on the NC475 Tek-CARE Appliance Server imports events and messages from other "foreign" systems and displays them on TekTone devices, such as event monitors, pagers and email. In order to have these foreign events and messages work with the Tek-CARE platform, rule sets are created to map events onto concepts that exist in these TekTone systems.

A rule set consists of a set of rules for the rules engine, plus a set of hardware behaviors to assign to foreign devices that are bound to interfaces using the rule set. These rules and behaviors are packaged together, because together they provide meaning to otherwise sterile call inputs.

For example, a rule might receive the message "Fire Alarm: 101" and activate call input 0 on the foreign device with the device ID 101. That foreign device ID will be set to a hardware behavior that maps call input 0 to a Fire Alarm call type on the Tek-CARE system.

Create a Foreign Rule Set

The foreign rule set acts as a system-wide definition that includes everything needed to translate foreign device event messages into calls on the Tek-CARE platform. Create one foreign rule set for each foreign system to be monitored. Give the foreign rule set a name that describes the system being monitored. You may wish to use the manufacturer, model number and type of system.

1. Open the LS450 ConfigTool. Click on **Load Configuration From System.**
2. Using the **Foreign Rule Sets** page of the LS450 ConfigTool, click **Add** and type a name for the new **Foreign Rule Set**.
3. Click **Apply**.

Figure 4 - Foreign Rule Sets
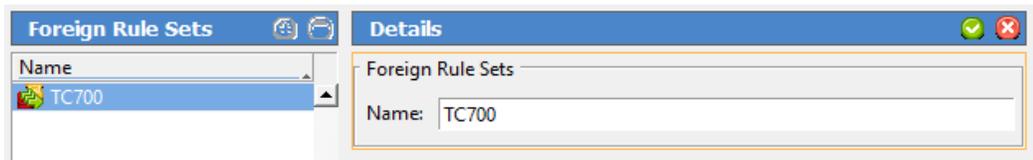
Create Foreign Rules

Every message received from a foreign system via an interface is evaluated by each rule in the rule set. When a message successfully matches a rule, the rule's corresponding action is performed. The process of creating a foreign rule is:

- Parse (break down) the incoming messages into individual tokens using either fixed width or delimited parsing.
- Create one or more filters to compare a token to a fixed value.
- Select the action that the NC475 Tek-CARE Appliance Server will perform when it receives a message that matches this rule.
- Assign a token as the Device ID that the NC475 Tek-CARE Appliance Server will refer to with this alarm.
- Test the rule.

    NOTE: The text fields used to define rules are case-sensitive. This includes message field names, filter term expressions, device IDs, text messages and testing input.

Begin creating a Foreign Rule:

1. On the **Foreign Rules** page of the LS450 ConfigTool, click **Add**.
2. In the **Rule Set** drop-down box, select the Foreign Rule Set that was created earlier.

Figure 5 - Creating Foreign Rules
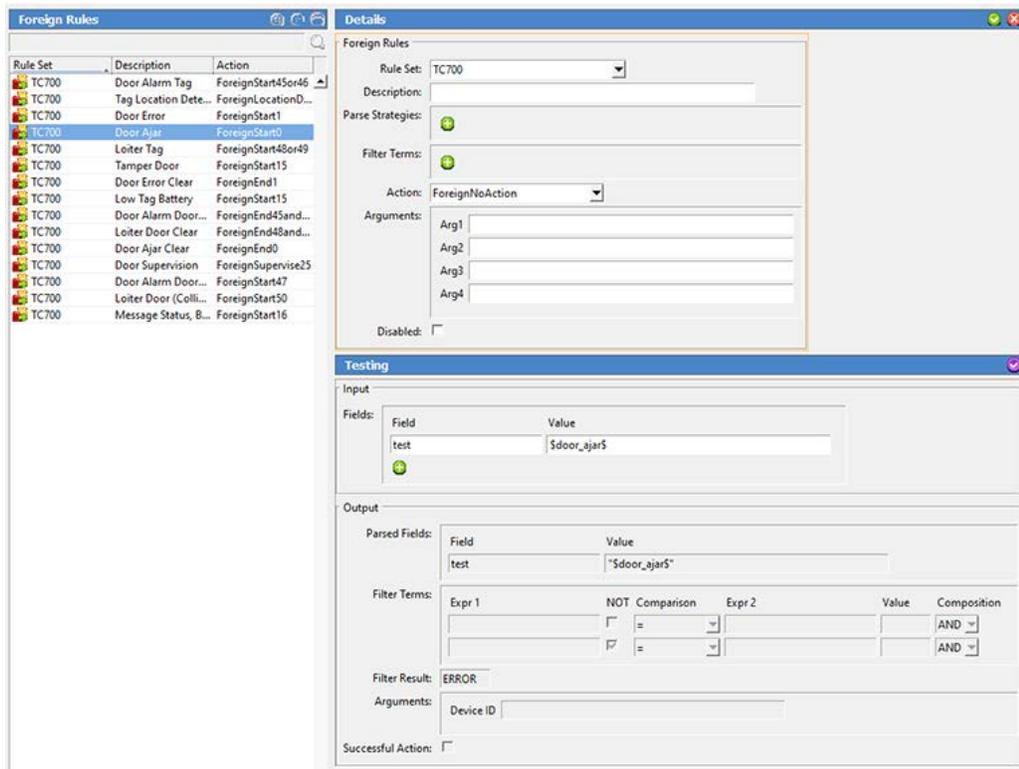
Parse the Incoming Messages

In order to recognize different types of foreign system messages, messages often must be broken down into tokens. Tokens are numbered sequentially (indexed) from left to right, beginning with zero (0). For example, the system might receive the single-line message, "ALARM START 0100" via a serial port. Rules parse this message into its component tokens—"ALARM," "START" and "0100"—and then define the action to take depending upon the tokens' values.

Three parsing methods are available, and each field in a message can be tokenized using a different parsing method and options. In the above example, the message can be parsed with the delimited method, using a space character as the delimiter.

Continue creating the Foreign Rule:

In the **Parse Strategies** section, click **Add** and then enter the field name in lowercase letters in the **Field** box. (Type "line" for serial protocol. Paging protocol requires three parse strategies: one with "capcode" in the Field box, one with "level" in the Field box, and one with "message" in the Field box.)

Choose either **Fixed Width**, **CSV**, or **Delimited** in the **Method** box, and complete the **Parameters** box as described in either **Fixed Width Parsing** or **Delimited Parsing**.

Fixed Width Parsing is used for a foreign system that outputs its messages in a columnar format—each token always contains a specific number of characters. This is typical of serial event printing outputs. See examples of fixed width parsing below.

Fixed Width Parsing Examples

		Output Tokens	
Input	Parameters	$line.0$	$line.1$
ABCDEFGHIJKLMNO	*	ABCDEFGHIJKLMNO	
ABCDEFGHIJKLMNO	3	ABC	
ABCDEFGHIJKLMNO	3,3	ABC	DEF
ABCDEFGHIJKLMNO	3,*	ABC	DEFGHIJKLMNO
ABCDEFGHIJKLMNO	-3	MNO	
ABCDEFGHIJKLMNO	-3,3	JKL	MNO
ABCDEFGHIJKLMNO	-3,*	ABCDEFGHIJKL	MNO

The parameters for fixed width parsing consist of one or more column widths separated by commas. Use an asterisk (*) as the last column width to include the remainder of the message as a token.

If the message is longer than the specified column widths and the last column width is not an asterisk (*), the extra characters will not appear in the parsed tokens. If the message is shorter than the specified column widths, the system will generate a parsing error.

If the parameter starts with a hyphen (-), the column widths will count from the end of the message first, but the tokens will be created in the sequence they appeared in the original message.

Fixed width formatted messages may include extra white space (such as spaces or tabs) between tokens. There are two ways to remove this extra white space from the tokens:

- Define extra column widths to create tokens that include the extra white space characters. You then ignore these extra tokens.
- Include the extra whitespace in your column widths and check the **Trim** option. Trim removes whitespace from the beginning and end of each token.

CSV (Comma Separated Value) Parsing is used for foreign systems that output data in CSV format.

Delimited Parsing is useful for messages that use specific characters to separate the tokens from each other. Examples include tab delimited, or whitespace delimited.

Using whitespace as a delimiter can be tricky, since tokens sometimes contain whitespace. The desired token would be split into multiple tokens, causing token numbering to be wrong for that message.

There are two forms of delimited parsing which you may use, depending on the parameters of the incoming message.

Delimited Parsing Examples

In these charts, a bullet represents a single space. Typed spaces will appear as bullets in the ConfigTool to help identify spaces in rules. Do not use the bullet character in the LS450 ConfigTool; use a space.

Single-Character Delimiters—If you include each character in the parameters only once, then each character in the parameters is treated as a single-character delimiter. Each single-character delimiter is removed from the message and its location in the message becomes a split point between tokens.

Input	Delimiter	Trim	Remove Empty	$line.0$	$line.1$	$line.2$	$line.3$
					Output Tokens		
one•two•three	•			one	two	three	
one•,•two•,•,•four	,	✓		one	two		four
one•,•two•,•,•four	,	✓	✓	one	two	four	
one•,•two•,•,•four	,		✓	one•	•two•	•	•four
one•,•two•,•,•four	,•		✓	one	two	four	
one•and•two•and•three	and	✓	✓	o	e	two	three
one,•and•two•or•three	and,or	✓	✓	e	tw	th	ee

Multiple-Character Delimiters—If the same character is used more than once in the parameters, that character is removed from the parameters and becomes a split point between the multiple-character delimiters. Each multiple-character delimiter is removed from the message and its location in the message becomes a split point between tokens.

Input	Delimiter	Trim	Remove Empty	$line.0$	$line.1$	$line.2$	$line.3$
					Output Tokens		
one•and•two•and•three	#and#	✓		one	two	three	
one•and•two•and•three	,and,	✓		one	two	three	
one•and•two•or•three	,and,or,	✓		one	two	three	
one•and•two•or•three	BandBorB	✓		one	two	three	

Continue creating the Foreign Rule:

If desired, check the **Trim** option to remove whitespace, such as spaces and tabs, from the beginning and end of each token.

When using delimited parsing, checking the **Option** box turns on the **Remove Empty** option to remove empty tokens. This is useful for properly indexing tokens separated by varying amounts of whitespace. Do not use this option with delimited parsing when a different column might be missing in each message. When using fixed width parsing, checking the **Option** box has no effect.

Referring to Tokens and Special Characters

In order to create foreign rules, you must be able to refer to specific parsed message tokens. You may also need to include a special character (such as a tab or carriage return). To differentiate token and special character references from straight text, they start and end with dollar signs ($). Text typed in foreign rule definitions without dollar signs (such as Sample Text) is not changed.

Example of token and special characters

This table uses the messages "ALARM START 0100" parsed to three tokens: "ALARM," "START" and "0100."

Input	Output
Sample Text	Sample Text
$line.0$	ALARM
Room $line.2$	Room 0100
$line$	ALARMSTART0100
$line_$	ALARM START 0100
$line.0$$line.1$	ALARMSTART

This table lists the special characters that are available.

Input	Special Character Output
&nt$	tab
nv	vertical tab
nr	carriage return
nn	line feed
nf	form feed
$nx??$	ASCII character with the hex value "??"

Figure 6 - ACII Code Chart

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	NUL	SOH	STX	ETX	EOT	ENQ	ACK	BEL	BS	HT	LF	VT	FF	CR	SO	SI
1	DLE	DC1	DC2	DC3	DC4	NAK	SYN	ETB	CAN	EM	SUB	ESC	FS	GS	RS	US
2		!	"	#	$	%	&	'	(	)	*	+	,	-	.	/
3	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
4	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
5	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
6	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
7	p	q	r	s	t	u	v	w	x	y	z	{	|	}	~	DEL

Token References

Token references are used in filter term expressions, device IDs and text messages to refer to specific parsed message tokens. This is how they are created:

1. Start with a dollar sign ($).
2. Next, type the field name (line, capcode, level or message).
3. Type a period followed by the token number. (Token numbering starts at 0.)
4. Repeat step #3 if a second token number is required. (Future parsing methods or protocol providers may produce hierarchical arrays of tokens which need more than one token number to address.)
5. End with another dollar sign ($). If the token reference does not include an index number (for example, $line$), all of the tokens are joined together with no spaces. If the token reference uses an underscore (_) as the token number (for example, $line_$), all of the tokens are joined together with spaces between them.

Special Character References

Special character references are used in filter term expressions to refer to characters that you could not otherwise type (such as a tab or carriage return).

Creating Filters

Filters determine which messages the foreign rule applies to. Each filter is made up of one or more single-line terms. Multiple terms are combined by the composition operator (AND, OR) that is used between each term:

- First, each term's Expr 1 and Expr 2 are compared using its **Comparison** option (=, <, <=, >, >=, CONTAINS, STARTS WITH, ENDS WITH, or IS IN). The comparison is negated if the NOT checkbox is checked.
- Second, all terms with AND as the **Composition** option are combined.
- Third, all terms with OR as the **Composition** option are combined to produce the final result of the filter evaluation.
- Finally, if the filter evaluation is TRUE, the rule's action will be performed (unless there is an error within the rule).

If the final result of a message's filter evaluation is FALSE, the action will not be performed. If it is TRUE, the action will be performed.

Filter Examples

	Expr 1	NOT	Comparison	Expr 2	Composition
Filter Term #1:	$line.0$		=	TROUBLE	AND
Filter Term #2:	$line.1$		=	START	AND

These three Filter examples use the message "ALARM START 0100" parsed to "ALARM," "START" and "0100":

Filter Term #1					
	Expr 1	NOT	Comparison	Expr	Composition
Example #1	$line.0$		=	TROUBLE	AND
	ALARM		=	TROUBLE	AND
Example #2	$line.0$		=	TROUBLE	OR
	ALARM		=	TROUBLE	OR
Example #3	$line.0$	✓	=	TROUBLE	AND
	ALARM	✓	=	TROUBLE	AND

Filter Term #2				
	Expr 1	NOT	Comparison	Expr
Example #1	$line.1$		=	START
	START		=	START
Example #2	$line.1$		=	START
	START		=	START

Example #3	$line.1$		=	START
	START		=	START

Filter Evaluation		
	Result of Each Term	**Final Result**
Example #1	false AND true	FALSE
Example #2	false OR true	TRUE
Example #3	true AND true	TRUE

Continue creating the Foreign Rule:

In the **Filter Terms** section, click **Add** and create the first filter term. Repeat for each additional filter term that you require.

Actions

A foreign rule's **Action** is the Tek-ALERT operation performed if the rule's filter evaluation is TRUE, and there are no errors parsing the message or extracting the Device ID. Most available actions in the drop-down box correspond to specific input categories on the **Behaviors** page of the LS450 ConfigTool. Other actions send a text message, admit/update or discharge a patient, or disable the rule.

Effect of an Action

Action	Input Category	Effect
ForeignNoAction	none	Disables the rule, allowing you to deactivate a rule without deleting it.
ForeignStart0–14	Start Stop	Start call from Device ID on input # (0–14).
ForeignEnd0–14	Start Stop	End call from Device ID on input # (0–14).
ForeignEndStartStop	none	End all calls from Device ID on all Start Stop inputs (0–14 and 35–44).
ForeignStart15–19	Start Acknowledge	Start call from Device ID on input # (15–19). End call via Event Monitor's Acknowledge button.
ForeignStart20–24	Start Timeout	Start call from Device ID on input # (20–24). End call when length of time in timer has elapsed (0–65767 seconds; approx. 18.25 hours maximum). If call is resent, timer restarts.
ForeignSupervise25–29	Supervised	Start call from Device ID on input # (25–29) when signal is not received for the timer's length of time (0–65767 seconds; approx. 18.25 hours maximum). End call when signal resumes.
ForeignStart30–34	Exclusive	Start call from Device ID on an input in the Exclusive group (30–34), and end any other existing call in the group. Just one Exclusive input per Device ID is active at a time.

ForeignEndExclusive	Exclusive	End the call from Device ID on inputs 30–34.
ForeignTextMessage	none	Send the specified text message (including Device ID) at the specified Level to the Staff members that are either assigned to the Device ID, assigned to the same zones as the Device ID, or assigned to all Device IDs.
ForeignStart35–39	Start Stop Side A	Start call from Device ID, side A, on input # (35–39).
ForeignStart40–45	Start Stop Side B	Start call from Device ID, side B, on input # (40–44).
ForeignEnd35–39	Start Stop Side A	End call from Device ID, side A, on input # (35–39).
ForeignEnd40–44	Start Stop Side B	End call from Device ID, side B, on input # (40–44).
ForeignForwardStart1–10	none	Before using ForeignForward inputs, call TekTone Technical Support at (800) 327-8466 option 3. They are designed to integrate with OneView products. Start/End call from Device ID on the station assigned to the location with the same name as Device ID.
ForeignFowardEnd1–10	none	
PatientAdmitOrUpdate	none	Add a patient with corresponding location/side and doctor, or update location/side and doctor for an existing patient.
PatientDischarge	none	Remove patient from all corresponding locations.

Arguments

Each action refers to a specific set of arguments which are defined using token references. Most actions include the **Device ID** argument, which refers to a specific foreign device. Use one or more token references to assemble a foreign device ID from tokens in the message. Or, leave the argument blank and the action will be applied to all foreign devices on the interface.

The **ForeignTextMessage** action includes these arguments: **Device ID**, **Message** and **Level**. You may wish to enter a combination of text and token references in the Message argument. The **Level** argument refers to a pager escalation code; possible values are A, B, C or D. (Default labels for these codes are A=Low, B=Medium, C=High, D=Urgent.)

The **PatientAdmitOrUpdate** and **PatientDischarge** actions include these arguments: **Location**, **Side**, **Patient Name** and **Doctor**. Enter the corresponding token reference for each argument.

Finish creating the Foreign Rule:

Enter token references and/or straight text in each of the arguments. Click **Apply**.

Testing

Test your foreign rule to verify that it parses your sample messages as expected, and returns the desired TRUE or FALSE filter result.

- Click on your foreign rule in the **Foreign Rules** list to select it.
- Enter the field name in the **Testing** section's **Field** box. (Type "line" for serial protocol. Paging protocol requires three testing fields: one with "capcode" in the box, one with "level" in the box, and one with "message" in the box. Click **Add** to create each additional **Field** box.)

- Type a sample input message in the **Value** box. Click on the purple (test) button. Verify that the parsed fields, filter result and arguments all return the expected results.

Enable or Disable Rules

If the new rule is not to be used immediately, check the **Disabled** box in the details pane to disable the rule, but retain the rule programming. Once the configuration is committed to the system, the rule may be enabled or disabled at any time. Enabling or disabling a rule requires a system commit.

Import Foreign Device Rules

To import the rules, go to **Tool>Import Foreign Device Rules**. This option will open a window with default rules. Choose the appropriate set of foreign rules and click **Okay**. Once imported, go to the **Foreign Rules** page to make sure the import is successful.

Create an Interface

The interface defines the port, protocol (Serial, CompII, TAP, NC300/NC300II, HL7, TCP/IP, UDP, Centrak, and TC700) and options required to read messages from the foreign system. Create one interface for each foreign rule set.

The interface designates the rule set that the rules engine uses to evaluate each message received via the interface. This choice of rule set also decides which of the hardware behaviors the foreign systems bound to this interface are able to select from.

1. Using the **Interfaces** page of the LS450 ConfigTool, click **Add**.
2. Choose the **Protocol** (Serial, CompII, TAP, NC300/NC300II, HL7, TCP/IP, UDP, Centrak, or TC700) used by the foreign system.
3. In the **Port** box, type the number of the virtual COM port that you previously assigned to this foreign system. Use the number only; do not include the letters "COM." (See Configure Foreign Systems as Virtual COM Ports on the TekTone PC.)
4. Choose the **Options** (if any) required for the protocol. In the example below, the Serial protocol requires a specific **Baud Rate**, **Byte Size**, **Parity** and **Stop Bits**.
5. In the **Rule Set** drop-down box, select the **Foreign Rule Set** that was just created. Click **Apply**.

Protocol providers parse the low level protocol the foreign system is sending and pass these messages to the rules engine for evaluation. Some advanced protocol providers can perform more internal evaluation and pass these messages to later stages of the foreign system interface, skipping the parsing stage or the rules engine entirely.

Create a New Serial Port

Go to **Serial Ports** page and click **Add**.

Choose a **Serial Port Number** above the default numbers already created. Select the **Serial Port Type** (which is either Standard, CT601, or CT701) and enter the **IP Address** for the serial converter. The **TCP Port** will default to a figure depending on the type of serial port chosen. Change this number only if necessary. Click **Apply** once finished.
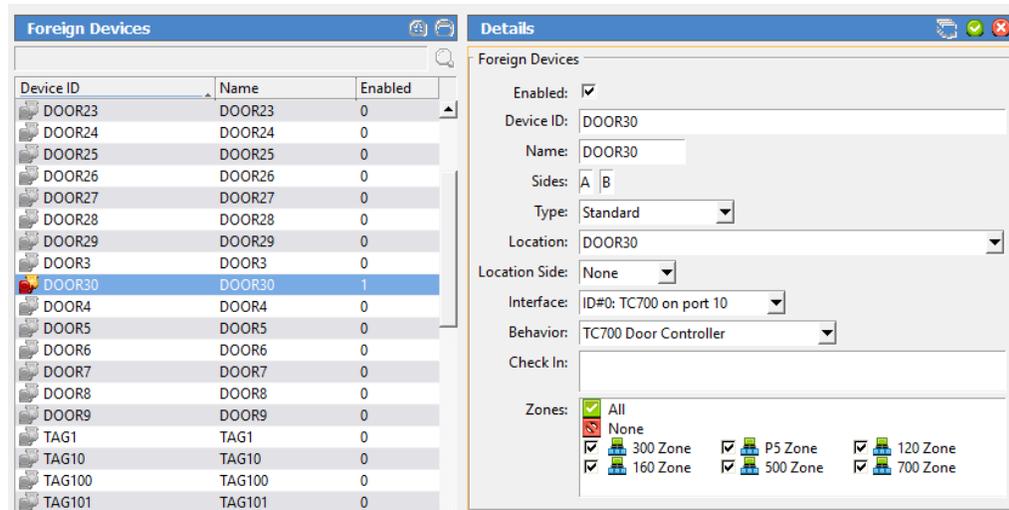
Add Foreign Devices

Foreign devices can be assigned to zones. Nurse call master stations assigned to the same zones will display calls from those foreign devices. Zones are also used to send automatic text messages to assigned staff members.

Create a foreign device for each parsed Device ID:

1. Using the **Foreign Devices** page of the LS450 ConfigTool, click **Add**.
2. In the **Device ID** box, type the Device ID that will appear in messages from a specific foreign device.
3. In the **Name** box, type a name for this device. This name will be used by the NC475 Tek-CARE Appliance Server to display calls on event monitors and nurse call master stations. If desired, replace the single-character identifiers for Side A and Side B in the **Sides** boxes.
4. From the drop-down box, select a **Type** of foreign device.
5. If desired, choose a **Location** and a **Location Side** for this device from the drop-down boxes.
6. In the drop-down box, choose the **Interface**.
7. In the drop-down box, choose the **Behavior** that you created.
8. Check the boxes for the **Zones** to assign this device to.
9. Click **Apply**. The Device ID and name are added to the **Foreign Devices** list.
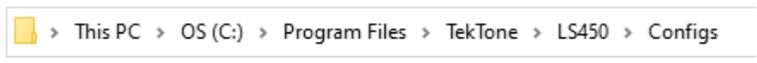
Figure 7 - Foreign Devices
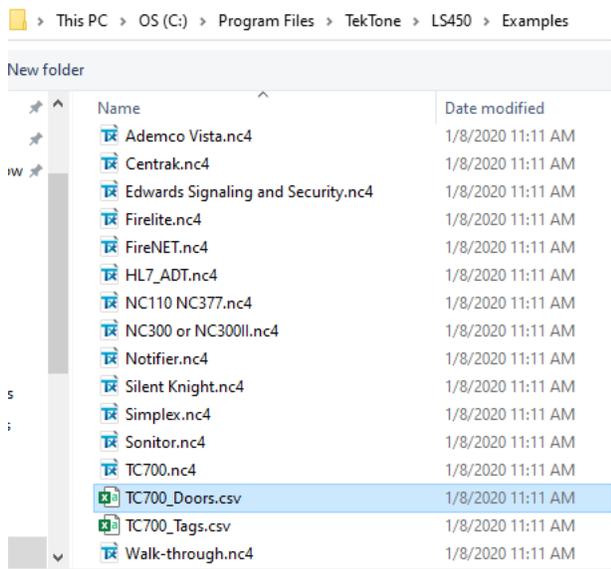
Import Foreign Devices

Go to **Tools>Import Foreign Devices from File**. Select the correct **Interface** and click **Ok**. Choose the **Hardware Behavior** for the foreign devices and select **Ok**.

In the Address bar, click **LS450**.

> This PC > OS (C:) > Program Files > TekTone > LS450 > Configs

Then select the **Examples** folder to import examples of already created foreign devices. In this example, choose the appropriate .CSV file.

Figure 8 - Examples Folder

Choose the file and click **Open**. Select the **File** type and choose **Ok**.

Importing Tek-CARE NC300II Stations as Foreign Devices

See the Tek-CARE NC300II Database Import, in the IL855 LS450 ConfigTool Manual for complete instructions.

Set up Hardware Behaviors

In order to integrate with NC475 Tek-CARE Appliance Server, events on the foreign system are mapped to call types on Tek-ALERT. A hardware behavior maps call inputs to call types. Many call types are available in the default configuration. You may create additional call types, or rename existing call types, using the Call Types page of the LS450 ConfigTool. See the IL855 LS450 ConfigTool Manual for more information. Foreign rules can trigger these categories of call input:

Start Stop Inputs are used when the foreign system sends a clearly recognizable message to indicate the beginning of an alarm, and then sends another one to indicate the end of the alarm. **Start Stop Side A** and **Start Stop Side B** inputs enable one Device ID to trigger multiple start stop inputs, according to the value of another token reference.

Start Acknowledge Inputs are used when the foreign system sends a clearly recognizable message to indicate the beginning of an alarm, but does not send one to indicate the end of the alarm. Therefore, these calls must be acknowledged (reset) manually on an event monitor or remote event monitor. To acknowledge a call, click on the call and then click **Acknowledge**.

Start Timeout Inputs are used when the foreign system sends a clearly recognizable message to indicate both the beginning and the continued status of an alarm, but does not send one to indicate the end of the alarm. The call is placed and stays active as long as status messages continue to be received. The call clears automatically when no status messages have been received for the length of time (in seconds) specified in the input's timer.

Supervised Inputs are used when the foreign system is continually sending messages to indicate the condition is normal, and a call must be triggered when messages stop being received. A call is suppressed as long as the system continues to receive the supervision messages. A call is placed when no supervision messages are received for the length of time (in seconds) specified in the input's timer. The call is cleared automatically when a new message is received.

Exclusive Inputs are used when the foreign system sends a clearly recognizable message to indicate the beginning of an alarm, which triggers a call. It may then send a message to indicate the end of the alarm. Or it may send a message to indicate another alarm type, which replaces the original call as the only active call for this Device ID; a pre-existing call for this Device ID on any other exclusive input is cleared automatically. Only one exclusive input per Device ID can be active at a time.

Figure 9 - Behaviors Page
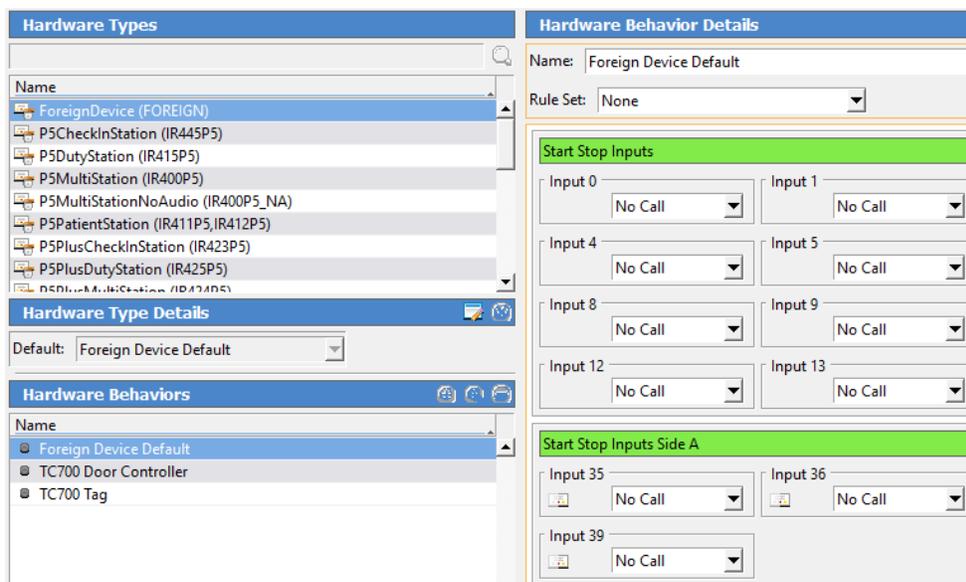
1. Using the **Behaviors** page of the LS450 ConfigTool, click **Add**.
2. In the **Hardware Types** section, click on **ForeignDevice** (FOREIGN).
3. In the **Hardware Behaviors** section, select **Foreign Device Default**. Click **Add** to create a duplicate hardware behavior.
4. In the **Name** box of the **Hardware Behavior Details** section, type a name for your new hardware behavior. Select the foreign rule set you created earlier in the **Rule Set** drop-down box.
5. Scroll down to the input category that includes the inputs you assigned in your rule actions. Select a call type (such as Smoke, Inactivity, Security, or Help) for each input that you used in a foreign rule. Also set the timers for Start Timeout and Supervised inputs.
6. Click **Apply**.

Add Facility Staff

Skip this step if the facility does not require the use of paging or email communication. In this step, staff members will be added to the system and assigned to pagers or email addresses.

Add Facility Staff in the ConfigTool

1. Choose **Staff** from the page selection pane. The **Staff** page will appear.
2. To add a new staff member, click the **Add** button to unlock the **Details** editing pane. Type the staff member's name in the Name field, select the correct type (if any) from the Staff Type drop-down menu, and check the Active box to enable the staff member.
3. Check the boxes in the **Paging**, **Phones**, and **Email Address** list for which choices to associate with the new staff member. If the staff member is to be assigned to one or more home zones, check the appropriate boxes in the **Home Zones** list as well. If the staff member is to be assigned to all zones, leave all zones checked.
4. Click **Apply** to add the new staff member to the system.
5. Repeat for each additional staff member.
6. When all updates have been made, select **File>Save Configuration** and **File>Commit Configuration to System.**

Add Radio Pocket Paging

Radio pocket paging provides an effective means of alerting staff members to events received by the NC475 Tek-CARE Appliance Server. The system automatically sends text messages to staff in response to patient calls. In addition, the NC475 Tek-CARE Appliance Server can send manual text messages to staff pagers. Follow this procedure to add radio pocket paging to the Tek-CARE system:

1. Connect the NC365B Tek-PAGING Paging Transmitter to the NC475 Tek-CARE Appliance Server's COM3 serial port, as shown in **Figure 2 on page 8**, using the null modem serial cable that is included with the paging transmitter.

2. Follow the instructions in the paging transmitter manual to locate and set up the paging transmitter. (See IL671 NC365B Manual.)

3. Start the LS450 ConfigTool on the programming laptop. Click on **Load Configuration From System**. Using the **Pagers** section of the LS450 ConfigTool, configure the paging transmitter using the following protocol settings. Then add pager CAP codes. Click **Apply** once finished.

NC365B

Base Type	Scope
CAP Base	10000
Scope Baud	Fast

4. Using the **Assignments** page of the LS450 ConfigTool, add staff shifts, if desired, and then add staff, groups and staff assignments. See **Create Staff Assignments on page 28** for more information.

5. Select **File>Save Configuration As** to save a copy of the new system configuration, and select **File>Commit Configuration To System** to apply the new configuration. The software will restart. (See the IL855 LS450 ConfigTool Manual for more information.)

Add LS453 Email Output Software

The LS453 Email Output is a software module for the NC475 Tek-CARE Appliance Server that enables email addresses to be added. The software sends calls and other events via email to the assigned staff members. Events can also be sent to anything that has an email gateway—for example, sending an SMS message to a cellphone.

Requirements

The facility must have a standard non-authenticated SMTP server, configured to accept messages from the NC475 Tek-CARE Appliance Server. (The LS453 Email Output system does not support SMTP authentication.) The SMTP server may be on the facility's LAN, or through the facility's ISP. The LS453 Email Output system has been successfully tested using Sendmail, Postfix and Microsoft Exchange.

Configure and Enable the Email Output

Connect the NC475 Tek-CARE Appliance Server to the facility's network, as shown in **Figure 2 on page 8**. Start the LS450 ConfigTool on the technician's programming laptop. Click **Load Configuration From System**. Use the LS450 ConfigTool to enable and configure the LS453 Email Output:

1. Select the **Email** page.

2. Click **Edit** in the Settings panel and check the **Enabled** checkbox. Enter the facility's **SMTP Host** address, enter the **SMTP Port** number, and enter an email address in the **From Address** box.

3. If the facility wishes to have reports and missed reports sent to the email, check **Reports Enabled** and **Send Missed Reports**. Click **Apply**.

4. Select **File>Save Configuration As** to save a copy of the new system configuration.
5. Select **File>Commit Configuration To System** to enable Email Output on the Tek-CARE system. The software will restart. (See the IL855 LS450 ConfigTool Manual for more information.)

Create Staff Groups

Skip this step if the Tek-CARE system does not include the use of paging or email communication. A staff group is a group of facility staff members that have similar characteristics—for example, the staff members work the same shift, cover the same zone, are all nurses, or are all aides. A staff member can be added to multiple staff groups.

Staff groups are used to send custom text messages to the pagers of a specific group of staff members. They may also be used to create staff assignments for automatic text messages.

Creating Staff Groups in the ConfigTool

1. Select **Staff** from the page selection pane and click **Add** in the **Staff Groups** pane.
2. Type a name in the Name field of the **Staff Groups>Details** pane to give a name to the new staff group.
3. Check the boxes of the staff members to be added to the new staff group.

   NOTE: Staff members may be added to multiple staff groups.

4. Once all staff members have been selected, click **Apply** to create the new staff group.
5. Repeat for each additional staff group.
6. When all updates have been made, choose **File>Save Configuration** and select **File>Commit Configuration to System**.
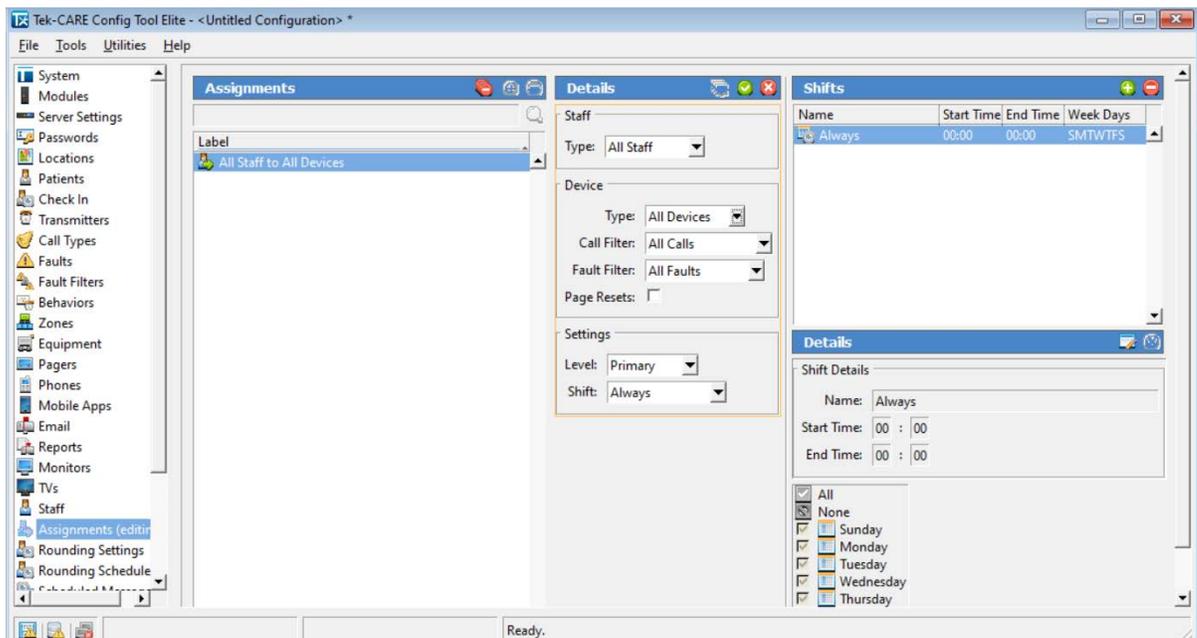
Create Staff Assignments

Assignments define which calls are sent to each staff device. They are used to assign shifts to staff and staff groups, which determines when they will receive calls. They are also used to assign patient stations and/or zones to staff and staff groups, which determines which patient stations will send them calls.

Create Staff Assignments in the ConfigTool

1. Choose **Assignments** from the page selection pane. The **Assignments** page (shown below) will appear.

2. In the **Details-Staff** pane, choose the **Staff Type** (**Staff**, **Group**, or **All Staff**) and the **Staff Name** (the name of a staff member or a staff group) from their respective drop-down menus.

3. In the **Details-Device** pane, select the appropriate **Type** (**Station**, **Transmitter**, **Zone**, **Foreign**, or **All Devices**), **Name** (determined by the **Type** selection), **Call Filter** (**All Calls**, **No Calls, Only Code**, **High Priority Calls**, or **All But Presence**), and **Fault Filter** (**All Faults**, **No Faults**, **Missing**, or **Maintenance**) settings. To send a page when a call is reset, check the **Page Resets** box.

4. From the **Details-Settings** pane, choose the **Level** of the staff member or group (**Primary**, **Secondary**, or **Tertiary**) and the **Shift** from the drop-down menus.

Figure 10 - Assignments Page

5. Click **Apply** to add the assignment.

6. Repeat for all additional staff assignments.

7. When all updates have been made, select **File>Save Configuration** to update the saved configuration file. Once the configuration has been saved, select **File>Commit Configuration to System**.

Enable Maintenance Faults

The software-latched **Maintenance Fault** indicates that one or more other faults have occurred on the system. Use it to reduce paging and email traffic when there are multiple faults, and to diagnose intermittent faults. When the system has one or more faults, each assigned staff member will receive just one page and/or email for the maintenance fault.

1. Using the **Faults** page of the LS450 ConfigTool, check the **Enable Maintenance Fault** checkbox.
2. Using the **Assignments** page of the LS450 ConfigTool, add staff assignments to the Maintenance fault. (Staff assignments may also be created later using the **Assignments** register of the LS477 Event Monitor.)
3. Select **File>Save Configuration As** to save a copy of the new system configuration, and select **File>Commit Configuration To System** to apply the new system configuration. The Tek-CARE software will restart. (See the IL855 LS450 ConfigTool Manual for more information.)

Using the Maintenance Fault:

- When the system has one or more faults, each assigned staff member will receive just one page and/or email for the Maintenance fault.
- Even if the system has intermittent faults, the Maintenance fault will latch on and be visible on event monitors. Use the Tek-CARE Reporting System (see **Using the Tek-CARE Reporting System on page 31**) to determine which intermittent fault occurred.
- When all other faults are resolved, perform a redetect to reset the maintenance fault.

Save the Current Configuration

System configuration should now be complete, and the system should be completely functioning. It is now time to save and back up the final system configuration. Once complete, the USB flash drive containing the backup should be turned over to the facility for safekeeping.

TekTone recommends that the installing company create a second backup of the initial configuration that is archived by the installing company for maintenance purposes.

Create the Final Backup

1. Open the ConfigTool software. When prompted, choose **Load Configuration from System** to ensure that the most current system configuration is open for editing.
2. Select **File>Save Configuration** to update the configuration saved on the programming laptop.
3. Insert the included TekTone USB flash drive into any available USB port.
4. In the ConfigTool, select **File>Save Configuration As…** and browse to the USB flash drive. Type in a file name and click **Save**.
5. If a configuration already exists on the flash drive, do not overwrite the old configuration, instead, save the new configuration with the date in the file name.
6. Safely eject the flash drive and remove it from the NC475 Tek-CARE Appliance Server. In the ConfigTool, select **File>Commit Configuration to System**.

Walk-Through Example

NOTE: The configuration built in this example is included in the LS450 ConfigTool examples directory: C:\Program Files\TekTone\LS450\Examples\Walk-through.nc4.

As an example, we are going to walk through an integration with a Tek-CARE NC110 nurse call system. The voltage interface sends its output using Scope paging protocol. Since we do not have a specific Scope protocol provider, and Scope sends one message per line, we will use our standard serial protocol provider. Here is sample output of the various call levels from one "point":

A0000008A Point 1 Steady

A0000008B Point 1 Medium

A0000008A Point 1 Steady

A0000008C Point 1 Fast

A0000008A Point 1 Steady

A0000008A Point 1 Reset

Looking at this data we notice the following things:

1. The voltage interface only sends us a message with the current call level. We do not receive a separate end message for each call level; a new call level just overrides anything we received previously. This indicates that we must use the exclusive inputs.
2. We need to use just two tokens from these messages: the point number which will serve as the Device ID, and the final word that indicates the current voltage on that point (Steady, Medium, Fast or Reset). Delimited parsing using a space as the delimiter will separate these tokens. We will also use the Remove Empty option in case there are extra spaces between words.

Following the steps outlined at the beginning of this section, here is how to create a new configuration:

1. Create and name a new rule set.
2. Create an interface, setting the protocol, port and serial options; then choose the rule set that was just created.
3. Create a rule for each voltage (Steady, Medium, Fast, Reset). Using Delimited parsing and the Remove Empty option, the voltage token is $line.3$. The Device ID (point number) token is $line.2$. Use these Exclusive actions:

Voltage	Action
Steady	ForeignStart30
Medium	ForeignStart31
Fast	ForeignStart32
Reset	ForeignEndExclusive

4. Create a foreign device hardware behavior for this rule set with appropriate call types assigned to the first three exclusive inputs.

Input	Call Type
30	Routine
31	Bath
32	Smoke

5. Add a foreign device to the interface for each point on the Tek-CARE NC110 system. Use the point number as the Device ID, and the corresponding room number as the name.

Using the Tek-CARE Reporting System

The Tek-CARE Reporting System is part of the Tek-CARE software suite. The reporting system records nurse call and emergency call system events and faults. It is also used to create custom summary and detail reports on system activity.

To start the Tek-CARE Reporting System by accessing the reporting system remotely from a facility PC.

> **NOTE**: In order to access the reporting system remotely, both the NC475 Tek-CARE Appliance Server and the facility PC must be connected to the facility LAN.

Using any computer on the facility's local area network (LAN):

1. Run a web browser on the networked PC.
2. Type the NC475 Tek-CARE Appliance Server's static IP address into the web browser's address bar.
3. If password protection is enabled, the Tek-CARE Reporting System password window will appear. Enter an access password and click **Login**.
4. The Tek-CARE Reporting System homescreen will appear.

Creating Reports

About Datasets (Versions 7200 and Prior)

In order to keep report creation times short while the system collects more and more data, calls are stored in datasets that span one month. A second set of datasets are also maintained that includes calls from the middle of one month to the middle of the next. Reports cannot span datasets.
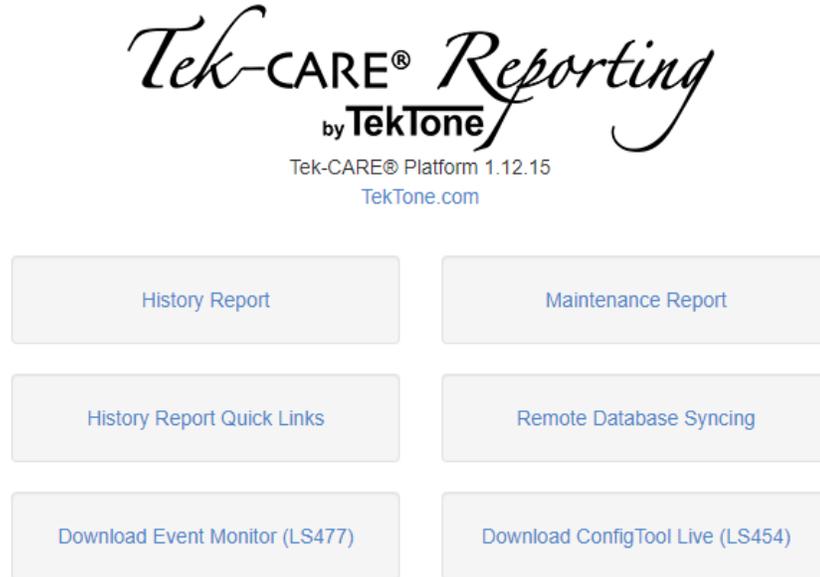
Create a History Report

History reports contain information about calls, alarms, and system faults. To create a history report, appropriate filters must be selected in the reporting system.

When the reporting system starts, the home screen of the reporting system appears that shows many options for filtering calls. By default, the filtering selections include all system events from all transmitters for the past seven days.

To create a custom report, follow the steps below.

1. Run a web browser on the networked PC.
2. Type the NC475 Tek-CARE Server's static IP address into the web browser's address bar.
3. If password protection is enabled, the Tek-CARE Reporting System password window will appear. Enter an access password and click **Login**.
4. The Tek-CARE Reporting System homescreen will appear.
5. Select a date range for the report by choosing one of the options from the **Filter** drop-down menu. The drop-down list includes such options as **Last Hour**, **Last 24 Hours**, **Last 7 Days**, **This Month**, and many more. You may also enter a custom date and time range manually.

Figure 11 - Reporting Database Selection

Tek-CARE® Reporting
by **TekTone**
Tek-CARE® Platform 1.12.15
TekTone.com

History Report	Maintenance Report
History Report Quick Links	Remote Database Syncing
Download Event Monitor (LS477)	Download ConfigTool Live (LS454)

6. If desired, select a **Time Range** within the selected **Date Range**. For example, to see events that occurred during third shift of the past seven days, select **Last 7 Days** from the Filter drop-down menu, uncheck the **No Filter** box in the **Time Range** pane and type 21:00 in the **Start** box of the **Time Range** pane and 07:00 in the **End** box.
7. If desired, choose a **Response Time** filter. Check the box labeled **Only events with response times over...** and type a response time into the boxes in MM:SS format.
8. Reports can be further filtered by **Zone**, **Device**, **Location**, **Patient**, and **Event Type**. Simply select which filters to apply to the report.

> **NOTE**: For windows with more than one option, hold the **Ctrl** key and click on multiple entries to select more than one entry. To quickly select a range, click on the first entry you would like to select, then hold down the **Shift** key, and click the last entry you would like to select.

Figure 12 - Reporting System Homescreen

9. In the **Summary** pane, select the information to be included in the report summary. By default, **Overall** and **Full Summaries** are selected. These choices are sufficient for most reports. The other selections available break the report down further into very detailed and specific pieces.

10. The **Details** pane shows each individual call in the body of the report. By default, details are not shown. To show call details, check the **Show Details** box, then choose if the details should include information about the zone the call was placed from by checking the **Include Zones** box.

11. To group overlapping calls together, check the box labeled **Group** overlapping events, allowing a gap up to... Be sure to allow a small gap when grouping events (at least 5 seconds).

12. In the **Output Types** pane, choose HTML to open the report in the browser window or CSV to open the report as a Microsoft Excel® spreadsheet.

13. If desired, enter a description of the report in the **Report Description** pane.

14. Click **Create Report**.

Quick Links

To speed up report creation, the Tek-CARE Reporting Software provides several options for quick and easy creation of commonly requested reports. By clicking the **Quick Links** button on the reporting home screen, reports including all events from the Last Hour, Last 24 Hours, Last 7 Days, Last Week, This Week, and several more options are available.

Create a Low Battery Report

TekTone recommends creating a low battery report once every week for systems with wireless transmitters and other devices. A low battery report will generate a list of transmitters with low batteries. Replace any low batteries immediately.

To create a low battery report, click the **Maintenance Report** button which will show a list of available **Low Battery Transmitters** and **Line Power Down Transmitters**, both in-use and not in-use. A web browser will open and display the low battery list.

Viewing and Interpreting Report Data

Tek-CARE reports are presented with all requested data visible in table format. The information contained in the tables may also be viewed in graph format for easier interpretation.

To view graphs of information in a particular section, click the **Show Graph** button below the table. To hide a graph, click the **Hide Graph** button below the graph. To quickly view all available graphs, click the **Show All Graphs** button at the top of the report page. To hide all graphs, click the **Hide All Graphs** button at the top of the report page.

Each section of the report may also be hidden by clicking the **Hide Section** button under the section title. The section then collapses, hiding the data from view. To reveal the hidden data, click the **Show Section** button under the section title.

To hide all sections, click the **Hide All Sections** button at the top of the report page. To view all sections, click the **Show All Sections** button at the top of the report page.

LS454 ConfigTool Live

The LS454 ConfigTool Live is a simplified version of the LS450 ConfigTool that is used by facility staff to accomplish everyday tasks on the Tek-CARE system.
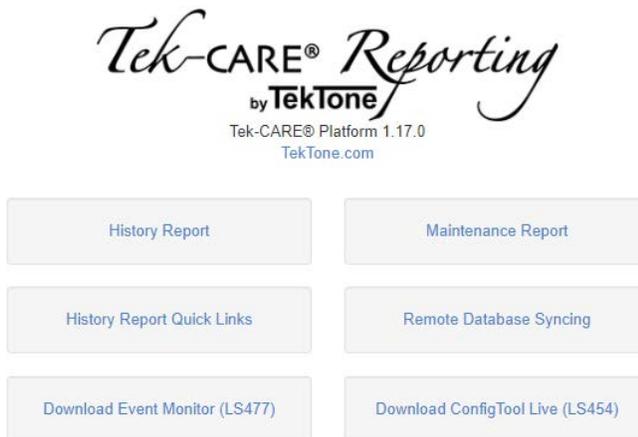
The LS454 ConfigTool Live is installed on a PC that is networked with the NC475 over the facility LAN. The LS454 ConfigTool Live can be installed on multiple networked machines if desired.

> **NOTE**: Programming the ConfigTool Live should only be done from one computer at a time. It is not recommended to run multiple instances of the software simultaneously.

To begin installation, open a web browser on the facility PC and navigate to the IP address noted during the Facility LAN setup phase of NC475 installation.

From the **Reporting** screen, click the option to **Download ConfigTool Live (LS454)**.

**Figure 13 - Reporting Screen**

Once the setup file downloads, run the installer on the facility PC.

After setup is complete, double-click the LS454 ConfigTool Live shortcut on the desktop to open the application.

Once the application has opened, a splashscreen will appear. Enter the IP address of the NC475 and click the **OK** button. The LS454 ConfigTool Live will open.
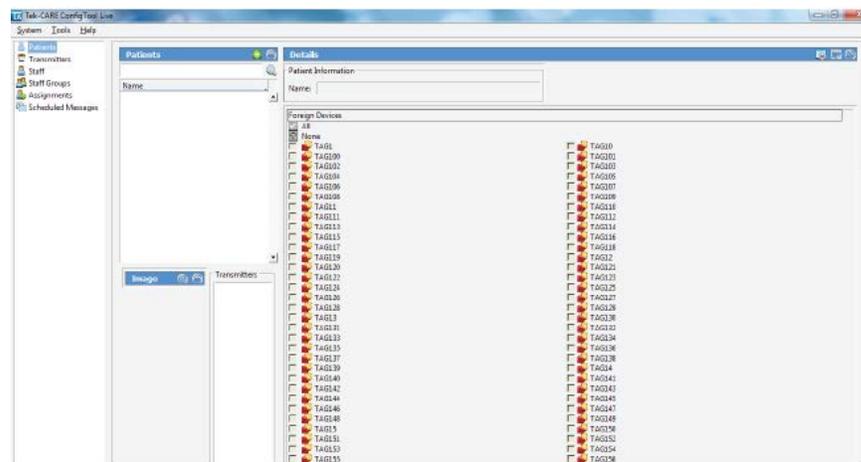
Figure 14 - ConfigTool Live Connection
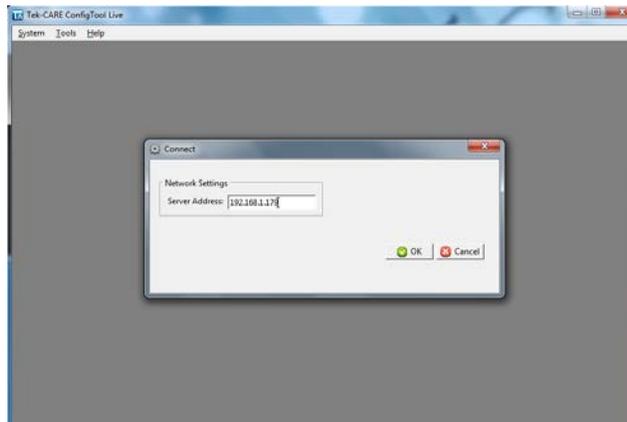
A technician who is familiar with the LS450 ConfigTool should provide hands-on training with facility staff who will be using the LS454 ConfigTool Live. The process for editing information in the LS454 ConfigTool Live is analogous to editing information in the LS450 ConfigTool.

Note that all changes made using the ConfigTool Live are immediately written to the system. No commit is necessary. The ConfigTool Live always imports the most recent system configuration for editing.

Figure 15 - ConfigTool Live Home Screen

The registers to be edited may be selected in the navigation pane on the left side of the screen.

The **System** menu includes connection options for the ConfigTool Live as well as the ability to set the system time. If the system has been password protected, use the **Access** option in the **System** menu to enter the password.

The **Tools** menu at the top of the window includes the ES and FA traffic windows for adding Tek-CARE500 wireless devices.

The **Help** menu includes license information and system version information.

> **NOTE**: Changes made using the ConfigTool Live are immediately written to the system. Remember to always choose **Load Configuration From System** when the LS450 ConfigTool is used. This ensures that the most current configuration with all changes is loaded into the LS450 ConfigTool for editing.

Troubleshooting

Monitor Fault

A Monitor fault occurs when a Remote Event Monitor PC closes its copy of the LS477 Remote Event Monitor software. Monitor faults are displayed at the LS477 Event Monitor. Monitor faults can be cleared at an LS477 Event Monitor.

To clear a monitor fault using an Event Monitor or Remote Event Monitor:

1. Select **Menu>Faults>Redetect**.
2. The NC475 Tek-CARE Appliance Server will redetect all remote event monitors, and then clear all existing monitor faults.

Network Fault

Any network faults at the LS477 event monitor indicates one of the following:

- the LS477 event monitor software has been shut down, or
- the ethernet cable from the NC475 Tek-CARE Appliance Server to the facility's LAN has been disconnected.

Pager Base Fault

A Pager Base fault can occur only if paging has been set up. It indicates that the paging transmitter cannot be detected.

Maintenance Fault

The software-latched **Maintenance Fault** indicates that one or more other faults have occurred on the system. It is used to reduce paging and email traffic when there are multiple faults, and to diagnose intermittent faults.

- Use the Tek-CARE Reporting System (see **Using the Tek-CARE Reporting System on page 31**) to determine which intermittent fault occurred.
- When all other faults are resolved, select **Menu>Faults>Redetect** to reset the Maintenance fault.