



Dialogic® Brooktrout® Fax Products

Linux End User Guide

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About this Publication

Introduction

This ***Dialogic® Brooktrout® Fax Products Linux® End User Guide*** is for users running either of the following in a Linux environment:

- Dialogic® Brooktrout® Fax Software
- Dialogic® Brooktrout® TR1034 Series and Dialogic® Brooktrout® TruFax® boards.

This Dialogic® Brooktrout® SR140 Fax Software User Guide contains the following:

- Chapter 1 explains how to get started.
- Chapter 2 describes activating Dialogic® Brooktrout® Fax Software products
- Chapter 3 describes configuring the Dialogic® Brooktrout® SR140 Fax Software. This chapter does not apply to users of the Dialogic® Brooktrout® TR1034 Series and Dialogic® Brooktrout® TruFax® boards.
- Chapter 4 explains testing the Dialogic® Brooktrout® SR140 Fax Software
- Chapter 5 provides virtual model specifications.
- Chapter 6 provides instructions to install the Dialogic® Brooktrout® TR1034 Series and Dialogic® Brooktrout® TruFax® boards. This chapter does not apply to users of the Dialogic® Brooktrout® SR140 Fax Software.

Manual Conventions

This manual uses the following conventions:

- ***Italics*** denote the names of variables in the prototype of a function, and file names, directory names, and program names within the general text.
- The **Courier** font in bold indicates a command sequence entered by the user at the system prompt, for example:
cd /usr/sys/brooktrout/boston/bfv.api
- The Courier font not bolded indicates system output, for example:
C:>Files installed.
- The Courier font also denotes programming code, such as C and C++. Programming code appears in program examples.
- **Bold** indicates the data type of the prototype of a function, Bfv API functions, dialog boxes, dialog box controls, windows, and menu items.
- Square brackets [] indicate that the information to be typed is optional.
- Angle brackets < > indicate that you must supply a value with the parameter.



The Caution icon is used to indicate an action that could cause harm to the software or hardware.



The Warning icon is used to indicate an action that could cause harm to the user.

Terminology

Updated Terminology

The current version of this document includes terminology that differs from previous versions. Please note the changes below:

Former Terminology	Replaced with...
Host-based fax	Dialogic® Brooktrout® SR140 Fax Software or Brooktrout SR140 Fax Software or SR140 Software or SR140
Virtual modules	
Virtual boards	
Software modules	
VoIP modules	
SR140 virtual modules	
TR1000 Series SDK	Dialogic® Brooktrout® SDK
TR1000 Series Product	Dialogic® Brooktrout® Fax Board or Brooktrout fax board or board
TR1000 Series Module	
TR1000 Series Board	
Brooktrout System Software	
	Dialogic® Brooktrout® Runtime Software

Dialogic® Brooktrout® TR1034 Fax Board Terminology

The Dialogic® Brooktrout® TR1034 Fax Board is also referred to herein by one or more of the following terms, or like terms including "TR1034":

- Brooktrout TR1034 Fax Board
- Brooktrout TR1034 Board
- TR1034 Fax Board
- TR1034 Board
- TR1034

Related Documents

For product information, white papers, FAQs, and more, access the Dialogic web site at ***www.dialogic.com***.

System Requirements for the Dialogic® Brooktrout® SR140 Fax Software

Minimum System Requirements

The minimum system requirements for running any number of SR140 channels is a Pentium P4 2.66 GHz with 512MB RAM. Refer to the ***Recommended System Configurations*** section of the Release Notes for a table describing the CPU utilization for this and other system types.

Supported and Tested Devices for Interoperability

For the latest listing of Dialogic® Brooktrout® FoIP interoperability information refer to the following site:

<http://www.dialogic.com/interoperability/fax.htm>

This list includes the following hardware devices (and their respective software revisions) that have been tested for interoperability with the SR140 Fax Software:

- IP PBX
- Gateways
- Other devices

Telephony Requirements

<i>Physical</i>	<i>Media</i>	<i>Call Control</i>
Ethernet 10/100	T.38	H.323
	RTP v2 G.711	SIP

Supported Operating Systems

A supported operating system is one for which the SR140 Fax Software has been designed and tested.

- Enterprise Linux ES/AS 4.0
- Enterprise Linux 5.0

Getting Technical Support

Dialogic provides technical services and support for customers who have purchased hardware or software products from Dialogic. If you purchased products from a reseller, please contact that reseller for technical support.

To obtain technical support, please use the following web site:

www.dialogic.com/support/

1 - Getting Started

This chapter provides an introduction and quick start installation instructions for installing the Dialogic® Brooktrout® SR140 Fax Software.

Introduction

What is a Virtual Module?

Dialogic's intelligent fax board platform, the Dialogic® Brooktrout®TR1034 Fax Board, provides Dialogic ISV (Integrated Software Vendor) partner's fax application with the capability to communicate from their application to the telephone or IP network. For software-only systems using IP only, Dialogic has implemented the SR140 as a virtual module. Although it is software, the SR140 appears to the fax application just like a board. That helps simplify your fax application publisher to provide a single product that works for hardware and software.

What is a Software License?

The SR140 is delivered inside your fax application. The SR140 license is the right to use the software products in an entitlement purchased from Dialogic. The license is represented by the contents of a License File that is used by the software to restrict use to that entitlement. When you install the software, you acknowledge the License Agreement that governs SR140 licensing.

A License Key is delivered in paper form and shows you what your entitlement is and allows you to apply your entitlement to a computer system when you install the SR140 Fax Software.

Make sure to keep your License Key certificate in a safe place, where you can find it easily.

What is Product Activation?

As well as helping you stay within your entitlement, your SR140 Fax Software product uses copy protection technology. Following installation of the software, Product Activation is a process for tying a license to a particular system, limiting use of that licensed software to one computer system. Product Activation is simple and may be completed via the Internet, email or by fax and involves

supplying your License Key shown on the License Key certificate and a unique identifier of the computer system that can be used to lock a license to a computer (known as node-locking).

What is Configuration?

All modules - virtual modules or real boards - need to know how to handle call control over the IP network. Once you have installed the software and activated your product, you need to enter settings that control how connections are made between the IP network and the virtual module. This process is called configuration.

What is Involved in Getting it Working?

- ***Supported Operating System***

For a list of supported operating systems see [*Supported Operating Systems on page 13.*](#)

- ***Product Activation***

For more information see [*Activating Dialogic® Brooktrout® Products on page 19.*](#)

- ***SR140 Configuration***

For more information see [*Configuring the Dialogic® Brooktrout® SR140 Fax Software on page 40.*](#)

- ***Test***

For more information see [*Testing the SR140 on page 47.*](#)

Quick Start Steps

When doing the installation, you need:

- Root privileges for the server

and either of the following:

- Enterprise Linux ES/AS 4.0
- Enterprise Linux ES/AS 5.0

Use the installation program provided with your application software to install the software for the SR140.

2 - Activating Dialogic® Brooktrout® Products

This chapter describes how to activate a license for the SR140.

The SR140 functionality is protected against piracy and abuse by licensing technology that uses product activation. A License Key is sold to the user who exchanges the key for a license file during or after installing the software. The license file is tied to the system during activation by imprinting a unique system signature (a node ID) on the license file, and is based on the machine's MAC address.

The License Key can either be a unique, paid-for license key that provides a perpetual license or a demo license key that results in software that provides limited support for a limited time. Both types of product - licensed as demo or paid-for - require activation. You have several ways to activate the product.

The licensing software also verifies the following:

- ***The signature of the license is not broken.***
- ***The license is not expired.***
- ***The node ID of the license matches the node ID of the compute (sometimes referred to as the “Node Lock” of the computer).***

Please contact Dialogic Technical if you are unable to use the license.

See ***[Getting Technical Support on page 14.](#)***

Preparing for Activation

Because Dialogic® Brooktrout® SR140 Fax Software is an IP-based technology, Dialogic uses the IP network and the Internet to perform Product Activation. Ideally, the system you are installing on should be connected to an IP Network and to the Internet.

Archive the License Key Certificate and the License File once the product has been activated.

Note: Because the license software verifies if the system clock has been set back, you should ensure that the system date is set correctly.

Displaying Node IDs

You can run the listnodeid utility to print out the node ID. You need root privileges run the utility.

The following is an example of the output:

```
$ listnodeid
ID value (vendor defined): UYPWK6XW01BGEKODJO4MLQ
```

The following is the default installation location for the listnodeid:

```
/usr/sys/brooktrout/boston/fw
```

To execute the listnodeid you have to enter the following:

```
./listnodeid
```

Methods to Activate a License

- ◆ Using the interactive web method

Activates licenses using the Dialogic License Activation website. After successfully processing activation information, you can choose to download the file immediately or have the license emailed to you. Within a couple of minutes Dialogic sends an email containing a license file, if you select the email option. See [*Activating a License Using the Web on page 23*](#).

- ◆ Create a request for email or fax

See [***Activating a License Using Email or Fax on page 27***](#). After successfully processing activation information, Dialogic sends an email containing a license file. Dialogic sends a license in about one working day.

Activating a License Using the Web

You can activate your Dialogic® Brooktrout® SR140 Fax Software license on the web using a computer that has web access. This can be a different computer than the server on which you are installing the SR140.



It is critical that you enter the node ID information on the website without errors. The software generates an unusable license when you enter incorrect node ID information. The second attempt to obtain the license using the corrected node ID information is considered a re-hosting. In this case, you to refer to [Re-Hosting License Files on page 35](#).

➤ ***Follow the steps below:***

1. On a computer that has Internet Access, enter the web address www.dialogic.com/activation, which directs you to a secure server. The following screen appears.

Please Login

License Key*:

Submit

* Please enter the License Key exactly as it appears on your certificate.

Help

2. Enter your original License Key (this can be found on your License Key certificate) and click **Submit**. The following screen appears.

Dialogic

Generate, Re-Host or View Licenses

[Generate Licenses](#) [Re-host Licenses](#) [View Licenses](#)

* Generate License - to create a new license from your License Key; Re-Host License to view or download a license you have already activated.

[Logout](#) [Home](#) [Help](#)

3. Click **Generate Licenses**. The following screen appears.

Select Items to Activate

Select Product:

[Filter Products](#)

950-101-v34-30 1.0 SR140-30F

Order	Item #	Avail/Total
BRKT35	1	95/100

[Select Hostid](#)

License Type:

Node ID Type:

Node ID:

[Generate License](#)

[Logout](#) [Home](#) [Help](#)

- Select the Product you are activating. Select the Node ID Type and enter the Node ID.

Select Items to Activate

Select Product: 950-101-v34-30 1.0 SR140-30F

[Filter Products](#)

950-101-v34-30 1.0 SR140-30F

Order	Item #	Avail/Total
BRKT35	1	95/100

[Select Hostid](#)

License Type: Locked Uncounted

Node ID Type: VID

Node ID: E23F3691D66C1D2E174

[Generate License](#)

[Logout](#) [Home](#) [Help](#)

- Click **Generate License**.

Confirm your Selection

950-101-v34-30 1.0 SR140-30F

Order	Item #	Avail/Total
BRKT35	1	95/100

License Type: Locked Uncounted

Node ID Type: VID

Node ID: 910CF1B311E99E23F3691D66C1D2E174

[Confirm](#) [Cancel](#)

[Logout](#) [Home](#) [Help](#)

- Verify that the information on this screen is correct and click **Confirm**. The following screen appears.

Dialogic®

Deliver License

```

FEATURE SR140 BRKTD 1.0 permanent uncounted \
  VENDOR_STRING=VoiceCh=0:FaxCh=30:Links=0:V34Enab=30:AdvSph=0:AdvFax=30:T38Enab=30 \
  HOSTID=VID=910CF1B311E99E23F3691D66C1D2E174 ISSUED=10-Jan-2008 \
  SN="BRKT35: 2696" TS_OK SIGN="09FC 80C3 A2A6 DD76 2805 53F3 \
  AEDF CC36 8495 09AA 4CFE 69B0 84F3 D306 7D54 1A47 496D 0CFC \
  4CD4 CED6 53DD 5ACC C100 1DD7 18C6 AE0D 2EDF FA33 AE87 BD5E"
  
```

Send to:

7. Click **Save to File** or enter your email address and click **Email** to have the License emailed to you.
8. Follow the instructions ***Installing Licenses on page 29*** to install the license file.

Dialogic®

Deliver License

License has been sent to: bfulginiti@dialogic.com

Activating a License Using Email or Fax

When your system cannot support the previous options (for example, you have no Internet connections) you can activate your license by sending the information to Dialogic using email or fax.

Note: If you activate your license by email or fax, Dialogic will send you the license file in about one business day.

➤ ***To activate a Brooktrout license by Email or Fax, follow the steps below:***

1. Create a Software License Request text file with the following information.
 - ◆ Node ID Type
 - ◆ Node ID
 - ◆ License Key
 - ◆ First Name
 - ◆ Last Name
 - ◆ Email
 - ◆ Phone
 - ◆ Company
 - ◆ Address
 - ◆ City
 - ◆ State
 - ◆ Zip
 - ◆ Country
 - ◆ Application
2. Email the saved file to activation@dialogic.com as an attachment, or fax this information to +1 781-433-2350 at the Dialogic License Activation Center for processing.
3. When you receive the license file from Dialogic, go to ***Installing Licenses on page 29*** to install it in the correct location. The following is a sample Software License Request file that you can use as a guide.

Figure 2-1 Sample Software License Request

```
Software License Request
Node Lock Type: VID
Node Lock: 910CF1B311E99E23F3691D66C1D2E174
License Key: brktxx-xxxxxx
First Name: Steve
Last Name: Boyle
Email: techsupport@dialogic.com
Phone: 781-292-3000
Company: Dialogic Corporation
Address: 15 Crawford St.
Address 2:
City: Needham
State: MA
Zip: 02494
Country: USA
Application: test
```

Note: A special demonstration license is available in either a single- or two-channel configuration that will run for a 30 day period. Contact your Dialogic sales representative to obtain this license.

Products with demonstration licenses run with limited functionality. Please note that only one demonstration license may be used at a time. Domestication licenses have incoming and outgoing fax pages overlaid with a Demonstration watermark.

Installing Licenses

The following environment variable must be set to the directory where the license files are located.

`BRKTD_LICENSE_FILE`

You can set the environment variable to point to any directory. Place a copy of your license files in the directory that you have chosen. The licensing software will automatically use the licenses when required.

Managing License Files

The section contains the following instructions to manage the license files:

- [*Naming License Files on page 30*](#)
- [*Backing Up Licenses on page 30*](#)
- [*Removing Licenses on page 31*](#)
- [*Replacing Lost or Unrecoverable Licenses on page 31*](#)
- [*Re-Installing Your Product on page 31*](#)
- [*Restoring License Files on page 32*](#)
- [*Re-Hosting License Files on page 35*](#)



If you remove or add Ethernet network cards to your system, the license files may become invalid. To activate the products, re-host the licenses (see [*Re-Hosting License Files on page 35*](#)).

Naming License Files

All license files end with the **.lic** extension. One file can contain one or more licenses. The license filename is usually in either form:

dd-mmm-yyyy.lic

dd-mmm-yyyy-x.lic (next available number)

However, the license filename can be any filename with a **.lic** extension.

Backing Up Licenses

To back up licenses, copy all ***.lic** files from the directory into a safe location. Copying the license files back to the same directory restores the licenses.

The path to the directory containing the license files can be found in the environment variable:

`BRKTD_LICENSE_FILE`

Removing Licenses

To remove a license follow the steps below. (You need to know the license serial number.)

1. You can find the path to **.lic** file in the environment variable:
`BRKTD_LICENSE_FILE`
2. Open each **.lic** file until you find the file that includes the one with the serial number in it.
3. Delete the license containing that serial number.

If there are no more entries in the **.lic** file, you can delete the file.

Replacing Lost or Unrecoverable Licenses

When a license is lost or not recoverable, get a new copy by going through the web activation process again. See [**Activating a License Using the Web on page 23**](#).

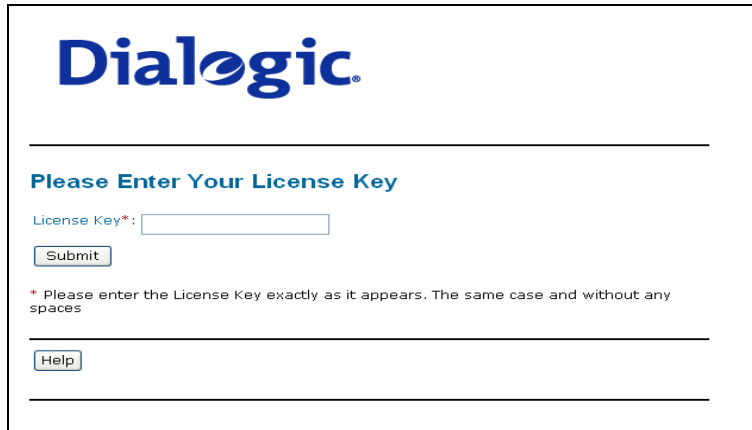
Re-Installing Your Product

If you want to simply re-install your product on the same computer system after upgrading or replacing your hard disk or any other upgrade that maintains the your network card's MAC address, you can use the same license file without having to re-activate your product.

Restoring License Files

If anything ever happens to your computer that leads to corruption of your software and the License File, retrieving another copy is a simple procedure. To retrieve another copy of your License File, follow the steps below:

1. Visit the Dialogic activation website at: www.dialogic.com/activation. The following screen appears.



The screenshot shows the Dialogic activation website. At the top is the Dialogic logo in blue. Below the logo is a horizontal line. Underneath the line is the text "Please Enter Your License Key" in blue. Below this text is a label "License Key*" followed by a text input field. Below the input field is a "Submit" button. Below the button is a red asterisk followed by the text "Please enter the License Key exactly as it appears. The same case and without any spaces". Below this text is a horizontal line. Underneath the line is a "Help" button. Below the button is another horizontal line.

2. Enter your original License Key (this can be found on your License Key certificate) and click **Submit**. The following screen appears.

Select Items to View

Hostid:

Select Product:

<input checked="" type="checkbox"/>	950-101-v34-30 1.0 SR140-30F	<input type="button" value="Order"/>	<input type="text" value="Node ID"/>
	BRKT35	VID=7C5D4EDA1E13293A898BA0B14DB58082	
<input type="checkbox"/>	950-101-v34-30 1.0 SR140-30F	<input type="button" value="Order"/>	<input type="text" value="Node ID"/>
	BRKT35	VID=7C5D4EDA1E13293A898BA0B14DB58082	
<input type="checkbox"/>	950-101-v34-30 1.0 SR140-30F	<input type="button" value="Order"/>	<input type="text" value="Node ID"/>
	BRKT35	VID=910CF1B311E99E23F3691D66C1D2E174	

☐ Display licenses only (no wrappers)

3. Click **View Licenses**. The following screen appears.

Select Items to View

Hostid:

Select Product:

<input checked="" type="checkbox"/>	950-101-v34-30 1.0 SR140-30F	<input type="button" value="Order"/>	<input type="text" value="Node ID"/>
	BRKT35	VID=7C5D4EDA1E13293A898BA0B14DB58082	
<input type="checkbox"/>	950-101-v34-30 1.0 SR140-30F	<input type="button" value="Order"/>	<input type="text" value="Node ID"/>
	BRKT35	VID=7C5D4EDA1E13293A898BA0B14DB58082	
<input type="checkbox"/>	950-101-v34-30 1.0 SR140-30F	<input type="button" value="Order"/>	<input type="text" value="Node ID"/>
	BRKT35	VID=910CF1B311E99E23F3691D66C1D2E174	

☐ Display licenses only (no wrappers)

4. In the **Select Product** window, select your product and then select the appropriate Node ID. Click **View**. The following screen appears.

Deliver License

```
FEATURE SR140 BRKTD 1.0 permanent uncounted \
  VENDOR_STRING=VoiceCh=0:FaxCh=30:Links=0:V34Enab=30:AdvSph=0:AdvFax=30:T38Enab=30 \
  HOSTID=VID=7C5D4EDA1E13293A898BA0B14DB58082 ISSUED=08-Nov-2007 \
  SN="BRKT35: 2122" TS_OK SIGN="0893 F8BC D985 2C75 1A0E 3DA8 \
  F91E 1BC7 016E EF10 2587 25D4 D0A5 21B9 BCCD 0898 CEF3 5DF0 \
  98D3 E990 8D15 C720 6F6D DBB7 F5E8 8565 5DF6 4F73 6725 A5BA"
```

Send to:

5. Click **Save to File** or enter your email address and click **Email** to have the License emailed to you.
6. Follow the instructions ***Installing Licenses on page 29*** to install the license file.

Re-Hosting License Files

To allow you to upgrade your computer to a new system or recover from a network card failure, Dialogic allows you to “re-host” your licensed software from one computer system to another. This process involves returning your current license and receiving another one.

The activation center web site allows you to automatically re-host your licensed software one time without technical support. For subsequent re-hosts you will need to contact Dialogic Technical Services and Support.

➤ ***Follow the steps below:***

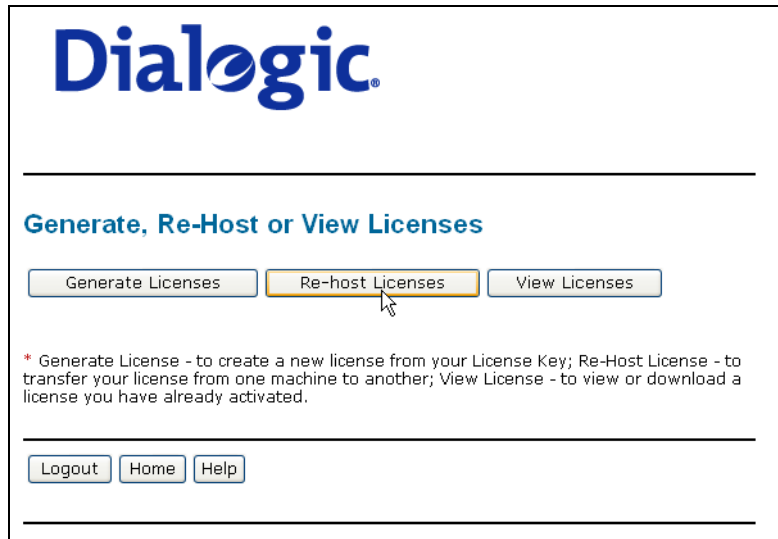
1. Visit the Dialogic activation website at:
www.dialogic.com/activation

The following screen appears.



The screenshot shows the Dialogic activation website. At the top is the Dialogic logo in blue. Below it is a horizontal line. Under the line is the text "Please Enter Your License Key" in blue. Below that is a text input field labeled "License Key*:". Below the input field is a "Submit" button. Below the button is a note: "* Please enter the License Key exactly as it appears. The same case and without any spaces". Below the note is a horizontal line. Below the line is a "Help" button. Below the button is another horizontal line.

2. Enter your original License Key (this can be found on your License Key certificate) and click **Submit**. The following screen appears

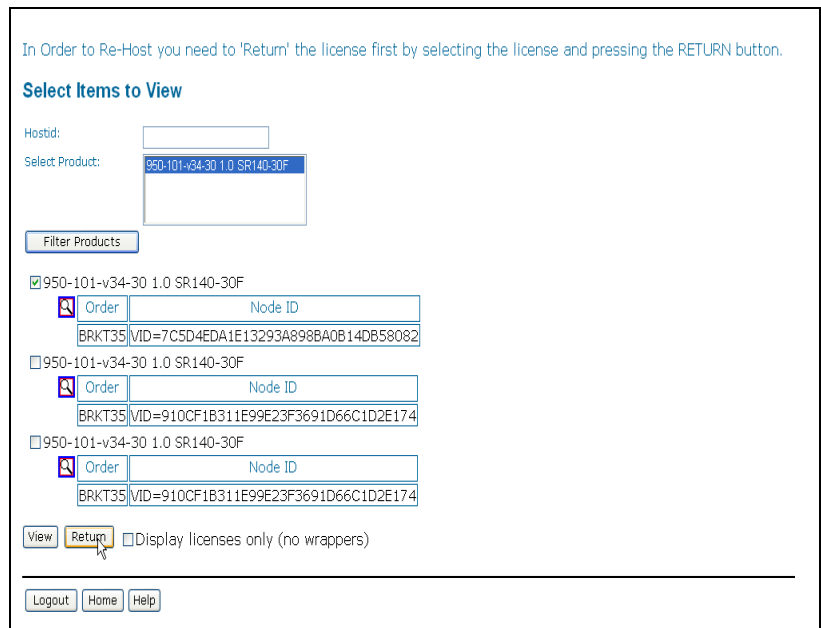


Dialogic®

Generate, Re-Host or View Licenses

* Generate License - to create a new license from your License Key; Re-Host License - to transfer your license from one machine to another; View License - to view or download a license you have already activated.

3. Click **Re-host Licenses**. The following screen appears.



In Order to Re-Host you need to 'Return' the license first by selecting the license and pressing the RETURN button.

Select Items to View

Hostid:

Select Product:

<input checked="" type="checkbox"/>	950-101-v34-30 1.0 SR140-30F	<input type="text" value="Order"/>	<input type="text" value="Node ID"/>
	BRKT35	VID=7C5D4EDA1E13293A898BA0B14DB58082	
<input type="checkbox"/>	950-101-v34-30 1.0 SR140-30F	<input type="text" value="Order"/>	<input type="text" value="Node ID"/>
	BRKT35	VID=910CF1B311E99E23F3691D66C1D2E174	
<input type="checkbox"/>	950-101-v34-30 1.0 SR140-30F	<input type="text" value="Order"/>	<input type="text" value="Node ID"/>
	BRKT35	VID=910CF1B311E99E23F3691D66C1D2E174	

☐ Display licenses only (no wrappers)

4. Select your product and click **Return** to return the license to Dialogic. The following screen appears.

Confirm your Selection

950-101-v34-30 1.0 SR140-30F

Order	Node ID
BRKT35	VID=7C5D4EDA1E13293A898BA0B14DB58082

5. Verify that the information on this screen is correct and click **Confirm**. The following screen appears.

Select Items to Re-host

Select Product:

950-101-v34-30 1.0 SR140-30F

Last Hostid
VID=7C5D4EDA1E13293A898BA0B14DB58082

License Type:

Node ID Type:

Node ID:

6. In the **Select Product** box click the product for which you are re-hosting. Select the Node ID Type and enter the Node ID. The Node ID Type must be **VID** (Vendor Defined Node ID).

The screenshot shows a web form titled "Select Items to Re-host". At the top, there is a "Select Product:" label followed by a dropdown menu displaying "950-101-v34-30 1.0 SR140-30F". Below this is a "Filter Products" button. The product name "950-101-v34-30 1.0 SR140-30F" is repeated, followed by a "Last Hostid" label and a text box containing "VID=7C5D4EDA1E13293A898BA0B14DB58082". Below this is a "Select Hostid" button. The "License Type:" is set to "Locked Uncounted". The "Node ID Type:" is a dropdown menu set to "VID". The "Node ID:" text box contains "E23F3691D66C1D2E174". A "Generate License" button is highlighted with a yellow border and a mouse cursor. At the bottom are "Logout", "Home", and "Help" buttons.

7. Click **Generate License**. The following screen appears.

The screenshot shows a web form titled "Confirm your Selection". It displays the same product information as the previous screen: "950-101-v34-30 1.0 SR140-30F", "Last Hostid" label, and "VID=7C5D4EDA1E13293A898BA0B14DB58082". The "License Type:" is "Locked Uncounted", "Node ID Type:" is "VID", and "Node ID:" is "910CF1B311E99E23F3691D66C1D2E174". At the bottom are "Confirm" and "Cancel" buttons, with a mouse cursor pointing at the "Confirm" button. Below these are "Logout", "Home", and "Help" buttons.

8. Click **Confirm**. The following license appears.

Deliver License

```

FEATURE SR140 BRKTD 1.0 permanent uncounted \
VENDOR_STRING=VoiceCh=0:FaxCh=30:Links=0:V34Enab=30:AdvSph=0:AdvFax=30:T38Enab=30 \
HOSTID=VID=910CF1B311E99E23F3691D66C1D2E174 ISSUED=04-Jan-2008 \
SN="BRKT35: 2639" TS_OK SIGN="0BC8 08EC A958 2334 B372 1424 \
OD5D FA7B E3FA 784A D5C4 54D3 2B2A E98B 9438 1D1E 5969 C1DF \
QADB 8591 AD10 8DA7 8DEE 7B17 E2E9 E9D2 AF18 6CA8 A733 BCA1"

```

Save to File

Send to: bfulginiti@dialogic.com | Email

Logout Home Help

9. Click **Save to File** or enter your email address and click **Email** to have the License emailed to you.
10. Follow the instructions ***Installing Licenses on page 29*** to install the license file.

Dialogic®

Deliver License

License has been sent to: bfulginiti@dialogic.com

Logout Home Help

3 - Configuring the Dialogic® Brooktrout® SR140 Fax Software

This chapter describes how to configure the Dialogic® Brooktrout® SR140 Fax Software.

Call Control Configuration File

The call control configuration file, which contains telephony and IP configuration parameters contains several keywords which are used to identify and configure an SR140.

This chapter contains the Global Module Parameters and the Internet Protocol (IP) Call Control Configuration Parameter that you need to configure.

Note: Refer to the following two sample configuration files for complete files which can be copied and customized to suit your needs

```
callctrl_sip_hbf.cfg  
callctrl_h323_hbf.cfg
```

Refer to the appendix ***Configuration Files*** in the ***Dialogic® Brooktrout® Bfv APIs Reference Manual*** for general instructions on creating configuration files.

Global Module Parameters

Set the following parameters to define configuration information that applies to the whole module (`module.#`). Set values for these parameters when you begin to define the configuration of a module.

Parameter
channels

Value
Specifies the number of channels on either a hardware or virtual module configured to receive a firmware download.

Note: This parameter only applies when using the Boston Host Service (Bostsrv). If you use the service, you must start it before you start any applications (see your installation and configuration guide for instructions).

When the firmware is downloaded to a module for the first time, the assigned ordinal channel numbers start wherever the assignment left off on the previous module. As the system initializes the modules, this numbering process creates a continuous ordering of the channel assignments across all the modules in the system. On later downloads, each module's ordinals begin at the same location, regardless of any decrease or increase in the channel count of a lower-numbered module. Therefore, if you decrease the channel count for a lower numbered module, the process creates gaps in the channel numbering assignments, possibly affecting your application. If you attempt to increase the channel count above any module's initial channel count, the system ignores the added channels.

For the following situations, restart the driver whenever you want to:

1. Get a continuous assignment of channel numbers after decreasing the channel count on any module.
2. Increase the number of channels above a module's initial channel count.

Set this parameter as follows:

- | | |
|----------|--|
| 0 | Specifies downloading the firmware to the default value of the number of channels on the module. |
| 1 – 1024 | Specifies a value defining the number of channels on the module configured to receive a firmware download. |

Range: 1 – 1024 (not to exceed the maximum number of available channels on the module).

Value Type: decimal

Default: 0

vb_firm

Indicates that the module is a virtual module and specifies the filename of the shared library that contains the loadable firmware for the virtual module.

Note: This parameter only applies when using the Boston Host Service (Bostsrv). If you use the service, you must start it before you start any applications (see your installation and configuration guide for instructions).

Default: No default. Absence of the parameter indicates that the module is not a virtual module.

Configuring Ethernet Interface Parameters

In the `module.#/ethernet.#` section of the configuration file, identify the module's interface `x` using the 1-based index of the Ethernet interface. This index allows an application to configure modules with multiple interfaces. Set the following parameter for a module configured to use an Ethernet interface.

Parameter *ip_interface*

Value

Specifies the identity of the device on the PC with the IP interface that the virtual module can use for sending IP messages.

Note: This parameter only applies to SR140 fax applications using a virtual module.

Set the value of this parameter to the name of any device in the PC with an IP interface. If you do not provide a value (blank string), the virtual module chooses the first interface in the PC to send its messages.

Note: The format for the value provided by this parameter is operating system dependent.

The Linux format is the ethernet device name.

For example:

```
ip_interface=eth0
```

Value Type: character string (up to 256 characters)

Default: <blank> (the virtual module uses the first interface in the PC for sending IP messages)

Example of Call Control (callctrl.cfg) Files

This section provides example settings in a call control configuration file for the Single Virtual Module, Single Stack configuration:

```
[module.41]
# This parameter should be modified to point to the correct location of the
# bostvb.so
    vb_firm=/usr/sys/brooktrout/boston/fw/bostvb.so
# This parameter should be set to the number of channels licensed for the
# SR140 product
    channels=4

[module.41/ethernet.1]
    ip_interface=
    media_port_min=56000
    media_port_max=57000
[module.41/host_cc.1]
    host_module=1
    number_of_channels=4
[host_module.1]
    module_library=brktsip_mt.so
    enabled=true
[host_module.1/t38parameters]
    t38_fax_rate_management=transferredTCF
    t38_fax_version=0
    t38_max_bit_rate=14400
    t38_fax_udp_ec=t38UDPREdundancy
    media_renegotiate_delay_inbound=4000
    media_renegotiate_delay_outbound=-1
    t38_fax_fill_bit_removal=false
    t38_fax_transcoding_jbig=false
    t38_fax_transcoding_mmr=false
    t38_t30_fastnotify=true
    t38_UDPTL_redundancy_depth_control=5
    t38_UDPTL_redundancy_depth_image=2

[host_module.1/rtp]
    rtp_frame_duration=20
    rtp_jitter_buffer_depth=100
    rtp_silence_control=inband
    rtp_type_of_service=0
    rtp_voice_frame_replacement=0
    rtp_codec=pcmu
    rtp_codec=pcma
```

```
[host_module.1/parameters]
sip_contact=0.0.0.0:0
sip_description_URI=http://www.dialogic.com
sip_default_gateway=0.0.0.0:0
sip_email=
sip_from=from@brooktrout.com
sip_max_forwards=70
sip_max_sessions=256
sip_phone=+1-4085551212
sip_proxy_server1=
sip_proxy_server2=
sip_proxy_server3=
sip_registration_interval=60
sip_registration_server1=
sip_registration_server2=
sip_registration_server3=
sip_session_description=description_brooktrout
sip_session_name=session_brooktrout
sip_username=brooktrout
```

4 - Testing the SR140

Dialogic includes a large collection of sample application programs and utilities with the Bfv API modules.

Sources for the sample applications are located in either ***boston/bfv.api/app.src*** or ***boston/bfv.api/bapp.src***

The following two sample applications allow you to test your configuration.

- fax
- tfax

If you do not have access to these sample applications you can request them from your software supplier.

fax

The ***fax*** program uses the highest level infopkt file fax sending and receiving routines to send or receive facsimiles. The local ID is specified from the command line. (This application is very similar to ***faxhl.c***.)

Bfv API debug mode is turned on. The ***btcall.cfg*** file is the user configuration file. The ***fax*** program is found in the ***app.src*** directory.

Command Syntax

fax [options] <infopktfile>

Arguments

<infopktfile>	Name of the file to send or receive.
-l <string>	Set local ID.
-L	Loop for testing.
-r	Receive a fax.
-s <num>	Send to given phone number.
-u <unitnum>	Use specific channel number.
-w	On receive, do not wait for ring.

Requires one -s or -r argument.

tfax

The **tfax** program uses the low-level TIFF-F file fax sending and receiving routines to send and receive facsimiles.

Turn on the Bfv API **debug** program from the command line. The **btcall.cfg** file is the configuration file. The **tfax** program is found in the **app.src** directory.

Command Syntax

tfax [-u <unitno>] [-v] -s <phoneno> <tiff_file>
or

tfax [-u <unitno>] [-v] -r <tiff_file>

Arguments

-r	Receive mode.
-s <phoneno>	Send mode.
<tiff_file>	Name of the file to send or receive.
-u <unitno>	Channel number.
-v	Turn on Bfv API debug mode.

5 - SR140 Specifications

Virtual Module Specifications

Fax

- ITU T.30; ITU T.38; IETF RTP; Group 3
- ASN.1 (2002)
- V.17, V.29, V.27ter, V.21, V.34 (T.38 ONLY) modulation
- Up to 33.6 Kbps (14.4 Kbps for RTP G.711 fax pass-through) with auto fallback
- Normal and fine resolution: 1200x1200
- MH, MR, MMR compression
- Transparent image conversion
- A4, A3 and B4 page sizes with scaling
- A4 and B4 TIFF F file widths
- Enhanced ASCII conversion support with headers
- Error Correction Mode (ECM)
- Line error detection/repeat good line

RTP

- G.711 20ms and 30ms Packets

Voice

- Prompt Playback
- Prompt Record
- Playback Gain Control
- Inbound and Outbound Silence Suppression
- Dynamic Range Control
- High Frequency Preemphasis

Signal Generation/Detection

- G.711 Single Frequency Tone Generation
- G.711 DTMF Tone Generation
- G.711 DTMF Tone Detection
- Adaptive Call Progress Analysis

Call Control

- H.323
- SIP

Operating Systems

- Enterprise Linux ES/AS 4.0
- Enterprise Linux 5.0

6 - Installing Hardware

This chapter applies to users of the **Dialogic Brooktrout®** TR1034 Series and **Dialogic Brooktrout® TruFax®** boards. This chapter does not apply to users of the Dialogic Brooktrout SR140 Fax Software.

For detailed hardware installation instructions, see the hardware installation card that came with your Brooktrout board.

Installation Overview

This section describes how to install your fax board on a Windows Server 2003 system.

If you already have the Brooktrout System Software installed and working on your system, do the following:

- Install your fax board. Refer to ***Installing Your Board on page 54.***
- Reboot your computer and configure the telephony for your Brooktrout board.
- Enter your dialing information.
- Register with Dialogic.

If this is a new installation, do the following:

- Check your system to verify the minimum system requirements.
- Install the Brooktrout System Software. ***Installing the Brooktrout System Software on page 144***
- Install your fax board. Refer to ***Installing Your Board on page 54.***
- Reboot your computer and configure the telephony for your Brooktrout board.
- Enter your dialing information.
- Register with Dialogic.

Installing Your Board

Before installing your board, make sure you have assigned the board a unique module number (see Determining the Board Module Number).

➤ ***Follow these instructions to install your Brooktrout board into your computer:***

1. Power off your PC and any peripheral equipment connected to it.
2. Unplug your PC power cord.
3. Remove the outside cover of your computer.
4. Open your computer and locate a free PCI slot in the computer chassis.
5. Remove the slot cover.
6. Carefully align the Brooktrout board with the PCI slot and firmly seat the board into the slot.
7. Tighten the mounting bracket screw to secure the board to the chassis.



Warning: When installing the board, be sure that the mounting bracket is securely fastened to the chassis and the chassis is plugged into a grounded three prong plug. Improper chassis or bracket grounding can result in harmful or fatal electrical shock as well as component damage.

8. Replace the outside cover of your computer.
9. Use the cable supplied with your board and connect one end of the cable into the RJ-45 telephone connector on the board's mounting bracket.
10. Plug the other end of the cable into the wall connector for your telephone service.
11. Reconnect your PC power cord, and power on your computer.