X4 Configurator. Product Manual



A complete guide to the installation and use of *Thinklogical's* X4 Configurator web-based control system for the Thinklogical family of VX, MX and HDX Routers



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PREFACE

Conventions Used in this Manual

As you read this manual you will notice certain conventions that bring your attention to important information. These are **Notes** and **Warnings**. Examples are shown below.

<u>Note</u>: Important Notes appear in blue text preceded by a yellow exclamation point symbol, like this.

A note is meant to call the reader's attention to helpful information at a point in the text that is relevant to the subject being discussed.

Warning! All Warnings appear in red text, followed by blue text, and preceded by a red stop sign, like this.

A warning is meant to call the reader's attention to critical information at a point in the text that is relevant to the subject being discussed.

BEFORE STARTING ANY PROCEDURE, IT IS RECOMMENDED THAT YOU READ THE INSTRUCTIONS THOROUGHLY!

X4 Configurator Software Package

Overview

X4 is a web-based control system for Thinklogical's® family of VX, MX, and HDX routers. It runs on a separate Windows or Linux computer and allows for easy configuration, management and control of any number of routers.

The installation files, rpm for Linux and exe for Windows, will be on the included CD and are also available from the Thinklogical FTP site: <u>http://ftp.thinklogical.com/ftp/VxRouter/X44/</u> Please choose the latest version for your chosen platform (Linux or Windows).

Linux Installation

The Linux installation using **yum** or **rpm** is automatic and allows a few installation options:

```
First time installation: rpm -I filename.rpm
Upgrade existing installation: rpm -U filename.rpm
```

Windows Installation

The Windows installation program will have a name similar to X44_02_41.exe When executed, Windows may open a warning window as shown below:



Click the "Yes" button to continue.

Select Install Compone	nts
Select components to install:	 ✓ Install Python2.6 ✓ Install Python win32 extensions ✓ Create LSI/X44 Directory Tree ✓ Install X44 Configurator Programs ✓ Install X44 Default Configuration Fi ✓ Create X44 Configurator Service ✓ Start X44 Configurator Service
Space required: 22,2MB	
Cancel Nullsoft Insta	all System v2.46

First installation

Thinklogical VX Router X44	F Configurator Setup: In 🗖 🖻 🔀	
Select components to install:	 ☐ Install Python2.6 ☐ Install Python win32 extensions ☑ Create LSI/X44 Directory Tree ☑ Install X44 Configurator Programs ☑ Install X44 Default Configuration Files ☑ Create X44 Configurator Service ☑ Start X44 Configurator Service 	
Space required: 1.6MB		
Cancel Nullsoft Install	System v2.46	

Installation if an update

If this is the first installation, then leave all the checkboxes checked. However, if this is an update from an earlier version, you can safely uncheck the first two boxes for "Install Python2.6" and "Install Python win32 extensions" as they will already be on your computer. Click Install.

Create 1	folder: C:\Program Files\LSI			2
🕞 Thinklo	gical VX Router X44 Config	urator Setup	83	
Should th (Yes = al	ne X44 configuration files b I users, No = only you)	e available to a	ill users?	
		Yes	No	
	Al death tractal Contains 00.40	× Rady	Close	

Click "Yes".

Extract: stations_H80_21M.csv 100% Extract: stations_hd.csv 100% Output folder: C:\ProgramData\LSI Install X44 Default Configurator Files done. Creating X44 Configurator Service Execute: "C:\Program Files\LS1\X44\tools\installService.bat" "C:\Program Creating X44 returned 0 Starting X44 configurator Service Execute: "C:\Program Files\LS1\X44\tools\startService.bat" "C:\Program Starting X44 returned 0 Completed	Thinklogica	cal VX Router X44 Configurator Setup: C 👝 💿 🔀	
Cancel Nullsoft Install System v2.46 < Back Close	Extract: station Extract: station Output folder: Install X44 De Creating X44 Execute: "C:\F	ons_H80_21M.csv 100% ons_hd.csv 100% r: C:\ProgramData\LSI efault Configuration Files done. Configurator Service Program Files\LSI\X44\tools\installService.bat" "C:\Program returned 0	
	Creating X44 0 Starting X44 0 Execute: "C:\F Starting X44 r Completed	Configurator Service (Program Files\LST\X44\tools\startService.bat" "C:\Program returned 0	

Please note the last five rows. The fifth from the bottom should read "Creating X44 returned 0" and the second from the bottom should read "Starting X44 returned 0". If either of these lines does not show "returned 0", then a problem was encountered during installation and X4 will not work.

Firewall Considerations

If your firewall is enabled, you may require some additional configuration. By default, firewalls block connections on port 80, which is the standard for web communications. The easiest/fastest way to get around this is to disable the firewall, but this is not always acceptable. If you need your firewall enabled, you must open port 80.

In addition, Thinklogical VX routers periodically broadcast their connection status via UDP on port 17564. Firewalls normally block this as well, so the firewall requires a new inbound rule to let the status broadcast in.

NOTE: You may need administrator privileges to install this software and make the required changes to the firewall. Please speak to your network administrator or refer to your firewall program documentation for more information.

X4 Configurator Login

X4 is accessed via a web browser from any computer on the same network as the X4 server. Some of the administrative pages can be demanding on the JavaScript engine on the browser, so if it's running too slowly on your current browser, please try **Google Chrome**.

Set the browser's URL to the IP address of your server to load the page. Logins are required by default, so if this is your first access you may see this:

1	thinklogical
E	ixtend • Distribute • Innovate
	Please log in
	USERNAME admin
	PASSWORD
	Submit

The default user name is "admin" and the password is "admin" (You can change this later.)

Introduction

The first time you log in, the *CONNECT* page will load automatically.

thinklogical X4Configurator	CONNECT ADMIN MACROS STUDIO COMBI GROUPS LOGOUT
Connections	Click a source and then one or more destinations

This page is one of the pages used for connecting sources to destinations. However, the first time the program is accessed it will be unpopulated.

There are blue names across the top of the page along the right side, starting with *CONNECT* and ending with *LOGOUT*. These are links to the other pages. This document will describe each of them as needed.

The first step will be to click the *ADMIN* link. A new page will load that looks like this:

thinklogical [®] X4Configurator	CONNECT ADMIN MACROS			S STUDIO COMBI GROUPS LOGOUT			
Extend • Dishibute • Innovate	Macros	Stations	Routers	Snapshots	Tie Lines	Log	Help
Administration				Select from	the tabbed cho	oices abc	ve

Above the black stripe are tabs for the administrative functions beginning with **Macros** and ending with **Help**. Clicking on a tab will highlight it and load the settings for modifying the settings associated with that tab. Click the **Routers** tab and continue to the page.

ADMIN: Routers

On the *ADMIN* page, the **Routers** tab allows you to configure X4Configurator for your routers. The router (or router simulator program) must be already running and on the network. The setup process will attempt to communicate with the router over the network and will fail if the router does not respond or is a different type than the one you selected.

<i>thinklogical</i> [®] X4Configura		urator	CONN	ECT ADMIN	MACROS	STUDIO CO	OMBI GROUPS	LOGOUT
Extend - Distribute - Innovate	Extend - Distribute - Innovate					Snapshots	Tie Lines	Log Help
Administration						Select from	the tabbed cho	ices above
				\subset	Import	Export	SAVE	Cancel
Click inside any cell to change the c right-click inside any column header # Routers (version: X4.4)	contents of that cell, <i>rig</i> to add or delete colum	ht-click inside any cell ns (if appropriate), and	to see additional row o press the SAVE or Ca	ptions, ncel buttons (abo	ove) when chan	ges are complete.		
Router Name: Type:	IP Address:	Socket:	Enabled:	Default Station	s: Sync For	mat: House	Sync: Sync	Status:
				CREATE		Card II	ot mstaned	
ADD Tie Line Table								

If this is a fresh install, there will be no routers declared yet. Click on the gray row beneath the column header "Router Name:" and enter the name you will use for your router. If you click on the entries for the remaining fields, you will be offered pop-up lists of choices. For this example, we will use a VX80.

					Impor	t Export	SAVE	Cancel		
Click inside any cell to change the contents of that cell, right-click inside any cell to see additional row options, right-click inside any column header to add or delete columns (if appropriate), and press the SAVE or Cancel buttons (above) when changes are complete.										
# Routers (versi	on: X4.4)									
Router Name:	Type:	IP Address:	Socket:	Enabled:	Default Stations:	Sync Format:	House Sync:	Sync Status:		
A			Brown and		CREATE)	card not installed			
ADD Tie Line Ta	ble									

Next, choose the router type by clicking in the 'Type' gray box.

							-	
					Impor	t Expo	rt SAVE	Cancel
Click inside any o	all to change the	contents of that cell rig	ht click inside any o	oll to see additional n	ow options			
right-click inside any c	any column heade	r to add or delete colum	ns (if appropriate), a	and press the SAVE of	or Cancel buttons (above)	when changes are	complete.	
# D								
# Routers (ver	sion: X4.4)							
Router Name:	Type:	IP Address:	Socket:	Enabled:	Default Stations:	Sync Format:	House Sync:	Sync Status:
Α					CREATE		card not installed	
		😣 Router Typ	8					
		VX 40						
		VX 80						
		VX 160 VX 320						
ADD Tie Line	Table	VX 320V						
		VX 640 HDX 80						
		HDX 576						
		MX 48						

Clicking in the IP Address:, Socket:, and Enabled: boxes will pop up choices for each of those fields.

					Import	Export	SAVE	Cancel
click inside any c right-click inside a	ell to change the c any column header	contents of that cell, rigit r to add or delete colum	nt-click inside any cell ns (if appropriate), and	to see additional re press the SAVE of	ow options, r Cancel buttons (above)	when changes are o	complete.	
ing it concerns to be	,		in the second second second			and an analysis are t		
2								
# Routers (vers	sion: X4.4)							
Router Mamo	Threat	ID Address:	Cackate	Feeblad	Default Stations	Sume Formati	House Sume	Curre Status
Router Name.	Type.	IP Address.	SOCKEL.	Enabled.	Deraun Stations.	Sync Format.	House Sync.	Sync Status.
A	VX 80				CREATE		card not installed	
			IP Address	S				
			192,168,13,15	2				
			192.168.13.17					
			192 168 13 19					
			102.100.101.10	5 C				

When the router's name, type, IP address, socket, and enabled fields are complete, click the **SAVE** button near the top right corner.

Next, we will create some "stations." **Stations are source and destination elements that can be connected.** A station can contain a single port or multiple ports, and a single station can include ports located on multiple routers.

For this example we will create a default set of stations that has a single video head with keyboard and mouse (KVM 1 Head).

Click the 'CREATE' button under Default Stations:, then click on 'KVM 1 Head'.

lick inside any cell to char ght-click inside any colum	nge the contents of that cell, <i>rigi</i> in header to add or delete column	ht-click inside any cell ns (if appropriate), and	to see additional row press the SAVE or C	options, ancel buttons (above)	when changes are co	omplete.	
Routers (version: X4	.4)						
Router Name: Type	IP Address:	Socket:	Enabled:	Default Stations:	Sync Format:	House Sync:	Sync Status:
A VX 80	192.168.	17567	yes	CREATE		card not installed	
					Station Type	8	
					Video Only KVM 1 Head KVM 2 Head		
ADD Tie Line Table					(close)		
noo ne line table							
			_		port Exp	oort SAV	E Cance
ick inside any or	The page at 127.0.0).1:8080 says:	ditional row sAVE or C	options, ancel buttons (above)	oort Exp	oort SAV	E Cance
ick inside any ce	The page at 127.0.0 This step will erase any replace them with a defa router type you've select	D.1:8080 says: existing stations settings ault set of stations for the ted, "VX 80".	ditional row SAVE or C	options, ancel buttons (above)	when changes are co	oort SAVi	E Cance
ick inside any or htt-cilok inside a Routers (vers	The page at 127.0.0 This step will erase any i replace them with a defa router type you've select If you've already made m page, this work will be k	D.1:8080 says: existing stations settings ault set of stations for the ted, "VX 80". nodifications on the statiost.	ditional row SAVE or C s and e ons	options, ancel buttons (above) 1	when changes are co	omplete.	E Cance
ick inside any or <i>pht-click</i> inside a Routers (vers Router Name:	The page at 127.0.0 This step will erase any treplace them with a defa router type you've select If you've already made m page, this work will be la Any macros that use pre the stations may no long	D.1:8080 says: existing stations settings ault set of stations for the ted, "VX 80". nodifications on the statio st. eviously changed names f ger work as expected.	ditional row Save or C e ons for	Ump options, ancel buttons (above) 1 Default Stations: CREATE	when changes are co	omplete. House Sync: card not installed	E Cance
ick inside any or ph-click inside a Routers (vers touter Name:	The page at 127.0.0 This step will erase any of Provide the second second second second This step will rease any of the second second second second second Type second second second second second second second Type second second second second second second second second second Type second secon	D.1:8080 says: existing stations settings ault set of stations for the ted, "VX 80". nodifications on the stati- ost. eviously changed names f ger work as expected.	ditional row SAVE or C SAVE	Default Stations: CREATE	when changes are co Sync Format:	oort SAVI omplete. House Sync: card not installed	E Cance

Here is a last chance - if you've already configured your stations, you may not wish to overwrite them with the defaults. Since we haven't created any yet, click OK.

right-click	he page at 127.0.0.1:8080 says: refault stations list created.	idditional row options, he SAVE or Cancel bu	ttons (above) when	changes are con	nplete.	
# Route	Prevent this page from creating additional dialogs.					
Router I	ОК	bled: Defau	ult Stations: Syn CREATE	nc Format:	House Sync: card not installed	Sync Status:

The new stations have been created. We can inspect and change them by clicking the **Stations** tab.

ADMIN: Stations

As we've seen before, stations are the sources and destinations that can be connected together. Click the *ADMIN* link and then the **Stations** tab to get to the stations page.

thinl	klogical"	X4Configu	rator	CONN	ECT ADMIN M	ACROS STUE	DIO COMBI GROUP	S LOGO
Extend • Distribute •	Innovate			Macros	Stations R	outers Snap	oshots Tie Lines	Log H
Adminis	stration					Sel	ect from the tabbed che	oices above
					Imp	port Exp	oort SAVE	Cance
lick inside an	y cell to change the conter	ts of that cell, right-cl	lick inside any cell to	see additional row op	tions,	22 - 22	12	
ght-click insid	le any <i>column header</i> to ad	id or delete columns (if appropriate), and pr	ess the SAVE or Car	cel buttons (above)	when changes are c	omplete.	
01-11(
Stations (V	ersion: X4.4)							
Width:	Height:	Font Size:	Update Interval:	Destination Side:	Connection Type:	Touch Type:	STUDIO BREAK:	
120	28	12	2000	RIGHT	SHARE	VIEW	HIDE	
Source Categ	ory: Source Category:	Source Category:	Source Category:	Source Category:	Source Category:	Source Category:	ř.	
ALL						Contraction of Contraction Contraction		
Destination (atego Destination Catego	Destination Catego	Destination Catego	Destination Catego	Destination Catego	Destination Categ	8	
ALL	telde het Bekendertieteldet Beseide he	Benedalite Statistics and a state		The second s				
Source Name	: Router Name:	11:	12:	13:	Category:	Category:	Color:	
Src 1	A	UR-001	UT-001		ALL		fuchsia	
Src 2	A	UR-002	UT-002		ALL		lime	
Src 3	A	UR-003	UT-003		ALL		blue	
Src 4	A	UR-004	UT-004		ALL		red	
Src 5	A	UR-005	UT-005		ALL		purple	
Src 6	A	UR-006	UT-006		ALL		orange	
Src 7	A	UR-007	UT-007		ALL		vellow	
Src 8	A	UR-008	UT-008		ALL		green	
Src 9	A	UR-009	UT-009		ALL		navy	
Src 10	A	UR-010	UT-010		ALL		agua	
Src 11	A	UR-011	UT-011		ALL		fuchsia	
Src 12	A	UR-012	UT-012		ALL		lime	
Src 13	A	UR-013	UT-013		ALL		blue	
	۵	UR-014	UT-014		ALL		red	
Src 14	<u></u>				/ Whether			

This page is designed to operate like a simple spreadsheet. Any value can be changed by clicking in it and typing a new value. Values can be copied and pasted, but only one at a time.

For more powerful editing options, see the chapters **Import/Export Station Configurations** (pg. 18) and **Configuring via Spreadsheet** (pg. 20).

The first table, starting with the column "Width", sets up values that will be common for all the stations on certain pages. We can ignore it for now.

The second and third tables are also safely ignored for now. We will return to them later.

The fourth table, starting with the column header *Source Name:* defines the source stations. Since we created a default set with a single video and a data return channel for a VX80 named "A", we will find sources named Src 1 through Src 40. Each source will have two ports; the first for video and the second for the data return.

Source stations can be added or deleted by right-clicking on an existing station row and selecting Insert, Append, or Delete from the pop-up menu. Existing station rows can be copied and pasted using the same menu.

Width:	Height:	Font Size:	Update Interval:	Destination Side:	Connection Type:	Touch Type:	STUDIO BREAK:
120	28	12	2000	RIGHT	SHARE	VIEW	HIDE
Source Category:	Source Category:	Source Category:	Source Category:	Source Category:	Source Category:	Source Category:	
ALL						1	
Destination Categ	o Destination Catego						
ALL		0			()	0	
Source Name:	Router Name:	L1:	L2:	L3:	Category:	Category:	Color:
Src 1	A	UR-001	UT-001		ALL		fuchsia
Src 2	😣 Row	UR-002	UT-002		ALL	0	lime
Src 3	Insert	UR-003	UT-003		ALL		blue
Src 4	Append	UR-004	UT-004		ALL		red
Src 5	Delete	UR-005	UT-005		ALL		purple
Src 6	Copy	UR-006	UT-006		ALL		orange
Src 7	Pasto	UR-007	UT-007		ALL		yellow
Src 8	Faste	UR-008	UT-008		ALL		green
Src 9	A	UR-009	UT-009		ALL	0	navy
Src 10	A	UR-010	UT-010		ALL	0	agua
Src 11	A	UR-011	UT-011		ALL		fuchsia
Src 12	A	UR-012	UT-012		ALL		lime

Scrolling down the page, we find the next and final table, which is for destination stations.

					0		
Src 29	A	UR-029	UT-029		ALL		navy
Src 30	A	UR-030	UT-030		ALL		aqua
Src 31	A	UR-031	UT-031		ALL		fuchsia
Src 32	Α	UR-032	UT-032		ALL		lime
Src 33	A	UR-033	UT-033		ALL		blue
irc 34	A	UR-034	UT-034		ALL		red
irc 35	A	UR-035	UT-035		ALL		purple
irc 36	A	UR-036	UT-036		ALL		orange
irc 37	A	UR-037	UT-037		ALL		yellow
Src 38	A	UR-038	UT-038		ALL		green
Src 39	A	UR-039	UT-039		ALL		navy
Src 40	A	UR-040	UT-040		ALL		aqua
Destination Name.						Caregory.	
Dectination Mamo	Router Name:	L1:	12:	13:	Category:	Categoor	
resultation Name.					Contraction of the local division of the loc	category.	
ost 1	A	UT-041	UR-041		ALL	category	
Ost 1 Ost 2	A A	UT-041 UT-042	UR-041 UR-042		ALL ALL	Category	
Ost 1 Ost 2 Ost 3	A A A	UT-041 UT-042 UT-043	UR-041 UR-042 UR-043		ALL ALL ALL	catgory.	
Ost 1 Ost 2 Ost 3 Ost 4	A A A	UT-041 UT-042 UT-043 UT-044	UR-041 UR-042 UR-043 UR-044		ALL ALL ALL ALL		
Ost 1 Ost 2 Ost 3 Ost 4 Ost 5	A A A A A	UT-041 UT-042 UT-043 UT-044 UT-045	UR-041 UR-042 UR-043 UR-044 UR-045		ALL ALL ALL ALL ALL ALL		
Ost 1 Ost 2 Ost 3 Ost 3 Ost 4 Ost 5 Ost 5	A A A A A A	UT-041 UT-042 UT-043 UT-044 UT-045 UT-046	UR-041 UR-042 UR-043 UR-044 UR-045 UR-046		ALL ALL ALL ALL ALL ALL ALL		
Dest 1 Dest 1 Dest 2 Dest 2 Dest 3 Dest 4 Dest 5 Dest 6 Dest 7	A A A A A A A	UT-041 UT-042 UT-043 UT-044 UT-045 UT-046 UT-047	UR-041 UR-042 UR-043 UR-044 UR-045 UR-046 UR-047		ALL ALL ALL ALL ALL ALL ALL ALL ALL		
Dist 1 Dist 2 Dist 2 Dist 3 Dist 4 Dist 5 Dist 6 Dist 7 Dist 8	A A A A A A A A	UT-041 UT-042 UT-043 UT-044 UT-045 UT-046 UT-047 UT-048	UR-041 UR-042 UR-043 UR-044 UR-045 UR-046 UR-047 UR-048		ALL ALL ALL ALL ALL ALL ALL ALL ALL ALL		
Dost 1 Dost 1 Dost 2 Dost 3 Dost 3 Dost 3 Dost 4 Dost 5 Dost 6 Dost 7 Dost 8 Dost 9	A A A A A A A A	UT-041 UT-042 UT-043 UT-044 UT-045 UT-046 UT-047 UT-048 UT-049	UR-041 UR-042 UR-043 UR-044 UR-045 UR-046 UR-047 UR-048 UR-049		ALL ALL ALL ALL ALL ALL ALL ALL ALL ALL		
Dist 1 Dist 2 Dist 2 Dist 3 Dist 4 Dist 5 Dist 6 Dist 6 Dist 7 Dist 8 Dist 9 Dist 10	A A A A A A A A A	UT-041 UT-042 UT-043 UT-044 UT-045 UT-046 UT-047 UT-048 UT-049 UT-050	UR-041 UR-042 UR-043 UR-044 UR-045 UR-045 UR-045 UR-049 UR-050 UR-050		ALL ALL ALL ALL ALL ALL ALL ALL ALL ALL		
Dist 1 Dist 2 Dist 2 Dist 3 Dist 4 Dist 5 Dist 5 Dist 5 Dist 6 Dist 7 Dist 8 Dist 7 Dist 8 Dist 9 Dist 10 Dist 10 Dist 11	A A A A A A A A A A A	UT-041 UT-042 UT-043 UT-044 UT-045 UT-046 UT-047 UT-048 UT-049 UT-050 UT-051	UR-041 UR-042 UR-043 UR-044 UR-045 UR-046 UR-047 UR-047 UR-047 UR-049 UR-050 UR-051 UR-051		ALL ALL ALL ALL ALL ALL ALL ALL ALL ALL	cacyor:	
Sit 1 Sit 1 Sit 2 Sit 3 Sit 4 Sit 5 Sit 5 Sit 5 Sit 5 Sit 7 Sit 8 Sit 9 Sit 10 Sit 10 Sit 11 Sit 12	A A A A A A A A A A A	UT-041 UT-042 UT-043 UT-044 UT-045 UT-046 UT-047 UT-048 UT-049 UT-050 UT-051 UT-051 UT-051	UR-041 UR-042 UR-043 UR-044 UR-045 UR-046 UR-047 UR-047 UR-048 UR-049 UR-050 UR-051 UR-051		ALL ALL ALL ALL ALL ALL ALL ALL ALL ALL		
Sit 1 Sit 1 Sit 2 Sit 3 Sit 4 Sit 5 Sit 6 Sit 7 Sit 8 Sit 9 Sit 10 Sit 10 Sit 11 Sit 2 Sit 2 Sit 2 Sit 3 Sit 3 Sit 4 Sit 5 Sit 5 Sit 5 Sit 6 Sit 7 Sit 10 Sit 12 Sit 13 Sit 12 Sit 13 Sit 12 Sit 13 Sit 12 Sit 13 Sit 12 Sit 13 Sit 1	A A A A A A A A A A A A A A	UT-041 UT-042 UT-043 UT-044 UT-046 UT-046 UT-047 UT-048 UT-049 UT-050 UT-051 UT-052 UT-053	UR-041 UR-042 UR-043 UR-044 UR-045 UR-046 UR-047 UR-048 UR-049 UR-050 UR-051 UR-052 UR-053		ALL ALL ALL ALL ALL ALL ALL ALL ALL ALL		
Sist 1 Sist 1 Sist 2 Sist 3 Sist 4 Sist 5 Sist 6 Sist 7 Sist 7 Sist 8 Sist 9 Sist 10 Sist 11 Sist 12 Sist 13 Sist 14	A A A A A A A A A A A A A A A A	UT-041 UT-042 UT-043 UT-044 UT-045 UT-046 UT-047 UT-047 UT-047 UT-048 UT-049 UT-050 UT-051 UT-051 UT-053 UT-053	UR-041 UR-042 UR-043 UR-044 UR-045 UR-045 UR-047 UR-047 UR-047 UR-048 UR-047 UR-050 UR-051 UR-051 UR-053 UR-054		ALL ALL ALL ALL ALL ALL ALL ALL ALL ALL		
Dist 1 Dist 1 Dist 2 Dist 3 Dist 4 Dist 5 Dist 7 Dist 6 Dist 7 Dist 8 Dist 9 Dist 10 Dist 10 Dist 11 Dist 12 Dist 13 Dist 14 Dist 15	A A A A A A A A A A A A A A A A A A	UT-041 UT-042 UT-043 UT-044 UT-045 UT-046 UT-047 UT-047 UT-048 UT-049 UT-050 UT-051 UT-051 UT-053 UT-054 UT-055	UR-041 UR-042 UR-043 UR-044 UR-045 UR-046 UR-046 UR-047 UR-048 UR-049 UR-050 UR-051 UR-051 UR-052 UR-053 UR-054 UR-055		ALL ALL ALL ALL ALL ALL ALL ALL ALL ALL		
Dist 1 Dist 1 Dist 2 Dist 3 Dist 4 Dist 5 Dist 6 Dist 5 Dist 6 Dist 7 Dist 8 Dist 9 Dist 10 Dist 11 Dist 12 Dist 13 Dist 14 Dist 15 Dist 16 Dist 15 Dist 16 Dist 13 Dist 14 Dist 15 Dist 16 Dist 12 Dist 12 Dist 2 Dist 2 Dist 3 Dist 3 Dist 4 Dist 5 Dist 6 Dist 7 Dist 7 Dist 8 Dist 10 Dist 11 Dist 12 Dist 12 Dist 12 Dist 13 Dist 14 Dist 10 Dist 13 Dist 14 Dist 12 Dist 10 Dist 13 Dist 13 Dist 13 Dist 14 Dist 13 Dist 14 Dist 15 Dist 16 Dist 17 Dist 16 Dist 17 Dist 16 Dist 13 Dist 14 Dist 13 Dist 14 Dist 15 Dist 16 Dist 13 Dist 13 Dist 14 Dist 16 Dist 16 Dist 16 Dist 13 Dist 16 Dist 16 Di	A A A A A A A A A A A A A A A A A A	UT-041 UT-042 UT-043 UT-044 UT-045 UT-046 UT-047 UT-048 UT-049 UT-050 UT-051 UT-052 UT-053 UT-055 UT-055 UT-056	UR-041 UR-042 UR-043 UR-044 UR-045 UR-046 UR-047 UR-048 UR-048 UR-050 UR-051 UR-052 UR-053 UR-055 UR-055 UR-055		ALL ALL ALL ALL ALL ALL ALL ALL ALL ALL		
Dist 1 Dist 1 Dist 2 Dist 3 Dist 4 Dist 5 Dist 6 Dist 7 Dist 8 Dist 7 Dist 8 Dist 9 Dist 10 Dist 11 Dist 12 Dist 11 Dist 12 Dist 13 Dist 14 Dist 15 Dist 16 Dist 13 Dist 14 Dist 15 Dist 16 Dist 17 Dist 17 Dist 17 Dist 18 Dist 17 Dist 18 Dist 19 Dist 1 Dist 2 Dist 2 Dist 3 Dist 6 Dist 2 Dist 3 Dist 6 Dist 7 Dist 7 Dist 8 Dist 7 Dist 8 Dist 7 Dist 8 Dist 7 Dist 8 Dist 9 Dist 10 Dist 11 Dist 12 Dist 12 Dist 7 Dist 8 Dist 10 Dist 12 Dist 10 Dist 12 Dist 10 Dist 12 Dist 10 Dist 12 Dist 10 Dist 11 Dist 12 Dist 13 Dist 13 Dist 13 Dist 13 Dist 13 Dist 14 Dist 15 Dist 16 Dist 13 Dist 13 Dist 13 Dist 14 Dist 15 Dist 15 Dist 16 Dist 17 Dist 13 Dist 13 Dist 14 Dist 15 Dist 17 Dist 15 Dist 17 Dist 1	A A A A A A A A A A A A A A A A	UT-041 UT-042 UT-043 UT-044 UT-045 UT-046 UT-047 UT-047 UT-047 UT-049 UT-050 UT-051 UT-051 UT-053 UT-053 UT-054 UT-056 UT-056 UT-057	UR-041 UR-042 UR-043 UR-044 UR-045 UR-047 UR-047 UR-047 UR-047 UR-047 UR-051 UR-051 UR-051 UR-051 UR-053 UR-055 UR-056 UR-057		ALL ALL ALL ALL ALL ALL ALL ALL ALL ALL		

Scrolling back up to sources, it's time to examine the fields in depth.

Source Name:	Router Name:	L1:	L2:	L3:	Category:	Category:	Color:
Src 1	Α	UR-001	UT-001		ALL		fuchsia
Src 2	Α	UR-002	UT-002		ALL		lime
Src 3	Α	UR-003	UT-003		ALL		blue
Src 4	Α	UR-004	UT-004		ALL		red
Src 5	Α	UR-005	UT-005		ALL		purple

The first source station is named "Src 1". It has ports that are attached to the router named "A". The ports are named L1:, L2:, and L3: for convenience (since they match the first video, data return, and second video fiber names on Thinklogical fiber extenders), but the names are not important. Only the router name that precedes them and their order matter.

The port names require some explanation:

Thinklogical's VX160 and VX40 routers have boards that are labeled "Upstream" or "Downstream". The VX320 has two separate card cages in the same enclosure, "Up" and "Down". (*Please see the VX Router Manual for a view of the card cages and card designations.*)

The port names are very specific and unambiguously define a unique SFP and the Transmit "T" or Receive "R" port within that SFP. Ports in the "upstream" cards on VX160 and VX40 routers or the "up" card cage on the VX320 start with "U" and ports in the "downstream" cards (VX160, VX40) or "down" card cage (VX320) start with "D".

Cards in Thinklogical's other routers (VX80, VX320 Video, MX48, VX640, HDX80, and HDX576) do not have "upstream," "up," "downstream," or "down" designations. However, for consistency, the ports in those routers are always preceded by "U".

Our example of Src 1 on a VX80 has two ports. The first is port UR-001 and it is being used for video.

- "U" is because this port is on a VX80 (and they are all "U")
- "R" means this is receiving a signal from the TX extender (video in this case)
- 001 means this port is on the very first SFP in the card cage (bottom, left)

The second port on Src 1 is UT-001 and is for the data return channel (USB, serial, DDC, etc.)

- "U" is because this port is on a VX80 (and they are all "U").
- "T" means this is transmitting a signal to the TX extender (data in this case).
- 001 means this port is on the very first SFP in the card cage (bottom, left).

L3: is empty on these sources because we created a default set with single video and data return. If your sources have two heads, the second video will go in the *L3*: column.

The next two columns are labeled "Category". These allow the administrator to organize the sources and destinations so that they can be organized and viewed together or separated as appropriate. We will return to this topic later.

Scroll down to the lower half of the stations page to find the destinations.

Destination Name:	Router Name:	L1:	L2:	L3:	Category:	Category:
Dst 1	A	UT-041	UR-041		ALL	
Dst 2	Α	UT-042	UR-042		ALL	
Dst 3	А	UT-043	UR-043		ALL	
Dst 4	Α	UT-044	UR-044		ALL	
Dst 5	Α	UT-045	UR-045		ALL	

The default stations set up for single-headed KVM use half the SFPs as sources and half as destinations. Since there are eighty (80) SFPs, each with its own receiver and transmitter, there are eighty receiver ports and eighty transmitter ports. Every receiver port and every transmitter is completely independent. With the exception of the VX160, any receiver port can be connected to any transmitter port.

In Dst 3, the first port is UT-043 and it is being used for video.

- "U" is because this port is on a VX 80 (all "U").
- "T" means this is transmitting a signal from the router to the extender (video in this case).
- 043 means this port is on SFP number 43.

Similarly, the second port is the same as the first, with the exception of the "R" replacing the "T," since this port will receive the data return from the receiver extender.

Therefore, when told via a browser page to connect Src 1 to Dst 3, the router will

- Connect UR-001 to UT-043 (for the video).
- Connect UR-043 to UT-001 (for the data return).

At this point the two stations are considered connected.

NOTE: If the source and destination each have two heads, then the router will connect all the R ports from the source to all the T ports on the destination, and all the R ports on the destination to all the T ports on the source. Blank entries will be skipped. If a two-headed source is connected to a single-head destination, the first head of the source will be connected and the second will not. If a single-head source is connected to a double-head destination, the second head of the destination will be disconnected.

Adding New Ports

If your sources and destinations have more than two heads, additional port columns can be added. Right click on the existing *L3*: column header and select Append from the Column pop-up.

Source Name:	Router Name:	L1:	L2:	L3:	Category:	Category:	Color:
Src 1	A	UR-001	UT-001		😣 Column		fuchsia
Src 2	A	UR-002	UT-002		Append		lime
Src 3	A	UR-003	UT-003		Delete		blue
Src 4	A	UR-004	UT-004		ALL		red
Src 5	A	UR-005	UT-005		ALL		purple
Src 6	A	UR-006	UT-006		ALL		orange
Src 7	A	UR-007	UT-007		ALL		yellow
Src 8	A	UR-008	UT-008		ALL		green
Src 9	A	UR-009	UT-009		ALL		navy
Src 10	A	UR-010	UT-010		ALL		aqua
Src 11	A	UR-011	UT-011		ALL		fuchsia
Src 12	A	UR-012	UT-012		ALL		lime

A new *L3*: column appears. Left click on the new *L3*: header and select *L4*:

Source Name:	Router Name:	L1:	L2:	L3:	L3:	Category:	Category:	Color:
Src 1	A	UR-001	UT-001			Station Labels		fuchsia
Src 2	A	UR-002	UT-002			Deuter News	1	lime
Src 3	A	UR-003	UT-003			Router Name:		blue
Src 4	A	UR-004	UT-004			12:		red
Src 5	A	UR-005	UT-005			L3:		purple
Src 6	A	UR-006	UT-006			L4:		orange
Src 7	A	UR-007	UT-007			L5:		yellow
Src 8	A	UR-008	UT-008			Category:		green
Src 9	A	UR-009	UT-009			Color:		navy
Src 10	A	UR-010	UT-010			Viewable:		aqua
Src 11	A	UR-011	UT-011			Takeable.		fuchsia
Src 12	A	UR-012	UT-012			ALL	8	lime

The column will be renamed.

k inside any o	ell to change the conter	nts of that cell, right-c	lick inside any cell to	see additional row or	otions.				
-click inside	any column header to ac	d or delete columns ((if appropriate), and p	ress the SAVE or Ca	ncel buttons (above)	when changes are cor	mplete.		
ations (ve	sion: X4.4)								
lth:	Height	Font Size	lindate interval:	Destination Side	Connection Type	Touch Type	STUDIO BREAK		
)	28	12	2000	RIGHT	SHARE	VIEW	HIDE		
		The second s			2 	The second s			
rce Categor	Source Category:	Source Category:	Source Category:	Source Category:	Source Category:	Source Category:			
tination Cat	gol Destination Catego	Destination Catego	Destination Catego	Di Destination Catego	Destination Catego	Destination Catego			
rce Name:	Router Name:	<i>L1</i> :	12:	<i>L3</i> :	L4:	Category:	Category:	Color:	
1	A	UR-001	UT-001			ALL		fuchsia	
2	A	UR-002	UT-002			ALL		lime	
c 3	A	UR-003	UT-003			ALL		blue	

However, we don't need extra signals right now, so click the Cancel button (not **SAVE**).

At this point, we have a router and some stations defined, so X4 can make connections between sources and destinations. To see how this is done, proceed to the *CONNECT* **Page** in this manual.

Import/Export Station Configurations

Internally, all configurations for stations and routers are maintained in Comma Separated Value format, or CSV files. For complex installations, it is often easier to modify these stations and router configuration files using a spreadsheet program.

To save a local copy of the stations.csv file, select *ADMIN* **Stations** and click the "Export" button. A copy of the file will be downloaded through the browser's normal file download function.

NOTE: In file names for stations, the name must start with "stations" and end with ".csv". The part of the file name between "stations" and ".csv" is ignored, so the administrator can use the middle of the file name for any identifying information.

For example, the first time Windows downloads the "stations.csv" file into the download directory, it will be saved as "stations.csv". Future downloads may be named "stations (2).csv", etc. The administrator may decide to rename their saved "stations.csv" as "stations-phase-1.csv", and X4 will still upload it and save it as "stations.csv" internally.

This allows the administrator to maintain multiple stations and routers files with their own names.

To upload the stations.csv file, select *ADMIN* **Stations** and click the "Import" button. The web browser will pop up a file browser window and let you select the file to be uploaded. Select it and the file browser will close. Now click the "UPLOAD" button and the file will be transmitted to the server.

think	logical	X4 Config	CONNE urator	ECT ADMIN	MACROS	STUDIO CO	MBI GROUPS	s LC	GOUT
Extend + Distribute + I	nnovate		Macros	Stations	Routers	Snapshots	Tie Lines	Log	Help
Adminis	tration					Select from	n the tabbed cho	ices abo	ve
	Choose File	stationsAB.csv	UPLOAD		mport	Export	SAVE	Ca	ancel
Click inside an right-click insid	y cell to change the ca le any column header	ontents of that cell, <i>rig</i> , to add or delete colum	<i>ht-click</i> inside any cell ins (if appropriate), and	to see additiona d press the SAV I	l row options, E or Cancel b	outtons (above) wh	hen changes are co	omplete.	
# Stations (v	ersion: X4.4)								
120	Height: 28	Font Size: 12	Update Interval: 2000	Destination Sid RIGHT	e: Connect SHARE	tion Type: Touc VIEW	h Type: 510 SHO	JDIO BREA OW	K:

After the upload starts, the web browser will pop up an alert "Please allow a few seconds to reload...". Click the OK button and the page will reload.

think	logical	[™] X4Config	CONNE urator	ECT ADMIN	MACROS	STUDIO COM	MBI GROUPS	s LC	GOUT
Extend • Distribute • I	inovale —		Macros	Stations	Routers	Snapshots	Tie Lines	Log	Help
Adminis	tration					Select from	the tabbed cho	oices abo	ve
Click inside any <i>right-click</i> insid # Stations (v	y cell to change the c e any <i>column header</i> ersion: X4.4)	ontents of the to add or de	The page at localho Please allow a few second	st:8080 says: ds to reload	tions, cel b	Export duttons (above) whe	SAVE en changes are co	Ca	ancel
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Configuring via Spreadsheet

Configuring many stations using X4's ADMIN: **Stations** page can be slow. An alternative is to export the stations file (as described in **Import/Export Station Configurations** on page 18 and then make changes using a spreadsheet program like Excel or Open Office.

NOTE: It is important to save the file as CSV after editing and always keep an unedited backup.

45	7 B 2	: =							
-	A	В	С	D	E	F	G	ни	
	# Stations (version: X4.4)								
								0711010 005 014	
	width:	Height:	Font Size:	Update Interval:	Destination Side:	Connection Type:	Iouch Type:	STUDIO BREAK:	
	120	2	0	2000	RIGHT	STARE	VIEVV	SHOW	
	Source Category:	Source Category:	Source Category:	Source Category:	Source Category:	Source Category:	Source Category		
	ALL	1-5	1357						
	Destination Category:	Destination Category:	Destination Category:	Destination Category:	Destination Category:	Destination Category:	Destination Category:		
)	ALL	1-5	1357						
L									
	Source Name	Router Name:	Lte	12:	13	Category:	Category:	Category: Takeab	le: Color:
	Src 1	A	UR-001	UT-001		ALL	1-5	1357 user	tuchsia
•	Src 2	A	UR-002	UT-002		ALL	1-5	L 2 5 7 Licer	lime
;	Sic J	A		UT-003		ALL	1.5	1357 User	rod
,	Src 5	A	UR-005	UT-005		ALL	1-5	1357	nurole
3	Src 6	A	UR-006	UT-006		ALL		1001	orange
)	Src 7	A	UR-007	UT-007		ALL		1357	vellow
)	Src 8	A	UR-008	UT-008		ALL			green
L	Src 9	A	UR-009	UT-009		ALL			navy
2	Src 10	A	UR-010	UT-010		ALL			aqua
3	Src B1	В	UR-021	UT-021		ALL			red
4	Sre E2	В	UR-022	UT-022		ALL			blue
5									
7	Destinction Name:	Douter Neme	16	1.0	10	Colononu	Colocoru	Cotogos u Tokoob	101
Ŕ	Destriation Name.		LT.	LZ.	LJ.	All	1.5	1357 Takeau	le.
2	Dst 2	A	UT-042	UR-042		ALL	1-5		
)	Dst 3	A	UT-043	UR-043		ALL	1-5	1357	
L	Dst 4	A	UT-044	UR-044		ALL	1-5		
2	Det 5	A	UT-045	UR-045		ALL	1-5	1357 user	
3	Dst 6	A	UT-046	UR-046		ALL		user	
1	Dst 7	A	UT-047	UR-047		ALL		1357 user	
>	Dst 8	A	U1-048	UR-048		ALL			
,	Det 10	A	UT-049	UR-049		ALL			
	Det H1	л н	111-001	UR-030					
, a	Det B2	B	LIT-042	LIR-042		ALL			
ò	and one					5 M.L.			
1									
)(•)(•) Sheet1	() 4)

As shown, we have removed all the sources after "Src 10" and added three new ones that refer to router "B." Don't forget to insert a heading in the Category column so these new sources will be found.

The process is the same for destinations named "B1" and "B2."

Save this file with a new name and upload it using the instructions in **Import/Export Station Configurations.** Once the ADMIN: **Stations** page reloads there will be a shorter page with some new sources and destinations on router B as well as the previous ones from router A.

thin!		<mark>X4</mark> Configu	rator		CONNE	ECT ADMIN	MACROS STU	IDIO COMBI (GROUPS LOGOL
Admini	stration				Macros	Stations	Routers Sn	apshots Tie	Lines Log He
Auminis	suauon						3	elect from the tail	ibed choices above
							mport E	xport 9	AVE Cancel
Click incide an	w call to change the costs	nte of that coll right.	lick inside any cell to	coo additional row o	otions	_			
right-click insid	de any column header to a	dd or delete columns	(if appropriate), and pr	ress the SAVE or Ca	ncel buttons (above)	when changes are	complete.		
# Stations (version: X4.4)								
Width:	Height:	Font Size:	Update Interval:	Destination Side:	Connection Type:	Touch Type:	STUDIO BREAK	:	
120	28	12	2000	RIGHT	SHARE	VIEW	SHOW		
Source Categ	ory: Source Category:	Source Category:	Source Category:	Source Category:	Source Category:	Source Category	<i>r</i> :		
ALL	1-5	1357	1		1				
Destination (Catego Destination Catego	ol Destination Catego	Destination Catego	Destination Catego	Destination Catego	Destination Cat	egol		
ALL	1-5	1357							
Source Name	: Router Name:	11:	L2:	L3:	Category:	Category:	Category:	Takeable:	Color:
Sec. 1	Δ	UB-001	UT-001		ALL	1-5	1357	liser	fuchsia
Src 2	A	UR-002	UT-002		ALL	1-5	1337	user	lime
Src 3	A	UR-003	UT-003		ALL	1-5	1357	user	blue
Src 4	A	UR-004	UT-004		ALL	1-5		user	red
Src 5	A	UR-005	UT-005		ALL	1-5	1357		purple
Src 6	A	UR-006	UT-006		ALL				orange
Src 7	A	UR-007	UT-007		ALL		1357		yellow
Src 8	A	UR-008	UT-008		ALL				green
Src 9	A	UR-009	UT-009		ALL				navy
Src 10	A	UR-010	UT-010		ALL				aqua
Src B1	В	UR-021	UT-021		ALL				red
Src B2	В	UR-022	UT-022		ALL				blue
Destination N	Name: Router Name:		L2:	L3:	Category:	Category:	Category:	Takeable:	
Dst 1	A	01-041	UK-041		ALL	1-5	1357		
Dst 2	A	UT-042	UR-042		ALL	1-5	1257		
Det 4	A	UT-043	UR-044		ALL	1-5	1357		
Dst 5	A	UT-045	UR-045		ALL	1-5	1357	liser	
Dst 6	A	UT-046	UR-046		ALL		1.5.57	liser	
Dst 7	A	UT-047	UR-047		ALL		1357	user	
Dst 8	A	UT-048	UR-048		ALL				
Dst 9	A	UT-049	UR-049		ALL				
Dst 10	A	UT-050	UR-050		ALL				
Dst B1	В	01-041	UR-041		ALL				

ADMIN: Tie Lines

"Tie lines" are fiber interconnects between routers that allow sources on one router to be seen at destinations on another.

Thinklogical's implementation of tie lines can automatically allocate, utilize, and deallocate tie lines as necessary, even creating multi-hop connections utilizing intermediate routers when no direct paths are available.

Tie lines are created on the ADMIN: **Routers** page. First, we'll need more than one router. Right click on the existing router description to activate the Row pop-up, and then select Append from the list to add a new row.

think	logical	X4Config	urator	CC	DNNECT ADM	MIN MACROS	STUDIO CC	MBI GROUPS	S LOGOUT
Child - Childore - Anno				Macr	os Station	s Routers	Snapshots	Tie Lines	Log Help
Administ	ration						Select from	the tabbed cho	ices above
						Import	Export	SAVE	Cancel
# Routers (vers Router Name:	sion: X4.4) <i>Type:</i>	IP Address: 192.168.7.100	Socket: 17567	Enabled: yes	Default Stati	ons: Sync Form	nat: House S	Sync: Sync : t installed	Status:
ADD Tie Line	Insert Append Delete Copy Paste								

Enter the information for the second router as described in ADMIN: Routers.

*Note: The IP addresses shown in this manual are not the defaults used in most installations. Please insert your own addresses where appropriate.

Click inside any co right-click inside a	ell to change the o ny <i>column header</i>	contents of that cell, <i>right</i> to add or delete columns	<i>click</i> inside any (if appropriate),	cell to see additional ro and press the SAVE o	Impo ow options, r Cancel buttons (above)	when changes are	ort SAV	E Cancel
# Routers (vers Router Name:	ion: X4.4) <i>Type:</i>	IP Address:	Socket:	Enabled:	Default Stations:	Sync Format:	House Sync:	Sync Status:
A	VX 80	192.168.7.100	17567	yes	CREATE		card not installed	
В	VX 80	192.168.7.108	17567	yes	CREATE		card not installed	
ADD Tie Line T	able							

Click **SAVE** when done.

Next, create the Tie Line Table. This is done by clicking the "ADD Tie Line Table" button on the bottom left. When clicked, it will insert a headers and a single, blank row for the first tie line (and replaces the Add Tie Line Table button with a REMOVE Tie Line Table button).

Router Name:	Type:	IP Address:	Socket:	Enabled:	Default Stations:	Sync Format:	House Sync:	Sync Status:
A	VX 80	192.168.7.100	17567	yes	CREATE		card not installed	
В	VX 80	192.168.7.108	17567	yes	CREATE)	card not installed	1
The Line Name.	start kouter.	Stare FOIL.	cho kouter.	Lind Port.	Loop and the	Matomatic.		
					Ves	VAS		

Add the values for the first tie line. The start port is where the signal will exit the start router and will be a Transmit. The end port is where the signal enters the end router and will be a Receive port. Duplex means there is a second fiber for the return channel, so since duplex is true in this case, it would be on router A at port UR-071 and router B at UT-061.

The easiest way to add new tie lines is to:

- 1. Right click on the first one and select Copy.
- 2. Right click on the first one again, select Append.
- 3. Right click on the new, blank line and select Paste.

The choice of each tie line name is up to the administrator. It is used to uniquely identify the tie line to the program and for diagnostics as we will see later. Make sure that the Duplex and Automatic columns are set to "yes".

			(in appropriate), and		Cancer buttons (above)	when changes are a	complete.	
Routers (vers	ion: X4.4)							
Router Name:	Type:	IP Address:	Socket:	Enabled:	Default Stations:	Sync Format:	House Sync:	Sync Status:
A	VX 80	192.168.7.100	17567	yes	CREATE		card not installed	
В	VX 80	192.168.7.108	17567	yes	CREATE	5	card not installed	
Tie Line Name:	Start Router:	Start Port:	End Router:	End Port:	Duplex:	Automatic:		
AB-1	A	UT-071	В	UR-061	yes	yes		
AB-2	A	UT-072	B	UR-062	yes	yes		
AB-3	A	UT-073	В	UR-063	yes	yes		
3A-1	В	UT-064	A	UR-074	yes	yes		

In this case, we have created three duplex paths from A to B and one from B to A. Click **SAVE** when done.

Next, we need to create stations on both routers. If you are using one of the default files created automatically by X4, it probably has many more stations than are needed. Use the ADMIN Stations Export function to save a copy of stations.csv, and edit it using a spreadsheet program like Excel or Open Office.

(*The chapters on* **Import/Export Station Configuration** *and* **Configuring via Spreadsheet**, *show how to create additional source and destination stations on the second router. The rest of this chapter uses the stations created from those chapters.*)

Using and Monitoring Tie Lines

In the chapters and , we modified our stations file. It now looks like this, with sources and destinations from both routers A and B.

thinkle	ogical	X4Configu	rator		CONNE	ECT ADMIN I	MACROS S	STUDIO CON	IBI GROUP	S LOG
					Macros	Stations	Routers	Snapshots	Tie Lines	Log
Administra	ation							Select from t	he tabbed ch	pices above
						Im	port (Export	SAVE	Can
Click inside any cel right-click inside an	II to change the conter y column header to ac	nts of that cell, <i>right-c</i> id or delete columns i	lick inside any cell to (if appropriate), and pr	see additional row op ress the SAVE or Car	ntions, n cel buttons (above)	when changes are	complete.			
# Stations (versi	ion: X4.4)									
Width:	Height:	Font Size:	Update Interval:	Destination Side:	Connection Type:	Touch Type:	STUDIO BR	EAK:		
120	28	12	2000	RIGHT	SHARE	VIEW	SHOW			
Source Category:	Source Category:	Source Category:	Source Category:	Source Category:	Source Category:	Source Category				
ALL	1-5	1357			1					
Destination Cated	o Destination Catego	Destination Catego	Destination Catego	Destination Catego	Destination Catego	Destination Cate	10			
ALL	1-5	1357								
Source Name:	Router Name:	L1:	L2:	L3:	Category:	Category:	Category:	Takeab	le: Ca	lor:
Src 1	A	UR-001	UT-001		ALL	1-5	1357	user	fu	chsia
Src 2	A	UR-002	UT-002		ALL	1-5		user	lin	ie
Src 3	A	UR-003	UT-003		ALL	1-5	1357	user	blu	Je
Src 4	A	UR-004	UT-004		ALL	1-5		user	rei	ł
Src 5	A	UR-005	UT-005		ALL	1-5	1357		pu	rple
Src 6	A	UR-006	UT-006		ALL				or	ange
Src 7	A	UR-007	UT-007		ALL		1357		ye	low
Src 8	A	UR-008	UT-008		ALL				gr	en 🛛
Src 9	A	UR-009	UT-009		ALL				na	vy
Src 10	A	UR-010	UT-010		ALL				aq	ua
Src B1	В	UR-021	UT-021		ALL				rei	1
Src B2	В	UR-022	01-022		ALL				DI	Je
Destination Name	· Router Name:	11:	12.	13:	Category:	Category:	Category	Takeab	e.	
Det 1	A	UT-041	UR-041		All	1-5	1357			
Dst 2	A	UT-042	UR-042		ALL	1-5	1331			
Dst 3	A	UT-043	UR-043		ALL	1-5	1357			
Dst 4	A	UT-044	UR-044		ALL	1-5	1997			
Dst 5	A	UT-045	UR-045		ALL	1-5	1357	user		
Dst 6	A	UT-046	UR-046		ALL			user		
Dst 7	A	UT-047	UR-047		ALL		1357	user		
Dst 8	A	UT-048	UR-048		ALL					
Dst 9	A	UT-049	UR-049		ALL					
Dst 10	A	UT-050	UR-050		ALL					
U U L A V										
Dst B1	В	UT-041	UR-041		ALL					

Select *CONNECT* from the links across the top. There will be two new sources and two new destinations.

Select one of the older sources from router A and then a destination on router B. For this example we'll use Src 3 and destination Dst B2.

<i>thinklogical</i> [®] X4confi	CONNECT AD	MIN MACROS STUDIO	COMBI	GROUPS	LOGOUT
Extend + Distribute + Innovate	 1,000,300-359,300) 	ALL	1-5	1357	Help
Connections		Click a source an	d then one	or more desti	nations
SOURCES	DESTINATIONS-	DESTINATIONS-			7
Src 1 X Src B1 X	Dst 1 🕺	Dst B1	X		
Src 2 X Src B2 X	Dst 2	Dst B2	X	Src 3	
Src 3 X	Dst 3 🕺				
Src 4 X	Dst 4				
Src 5 X	Dst 5 💢				
Src 6 X	Dst 6				
Src 7 🗙	Dst 7 X				
Src 8 X	Dst 8 X				
Src 9 X	Dst 9 X				
Src 10 X	Dst 10				

Note that there is no obvious indication that the connection required tie lines. But if you select the *ADMIN* link and the **Tie Lines** tab, you will see the tie line in action.

thinklog	thinklogical X4Configurator				MACROS	STUDIO	COMBI	GROUPS	L	OGOUT
Extend • Distribute • Innovate		an sa kalanan kalangan 🥌 sa sa kalangan kalang	Macros	Stations	Routers	Snapsh	ots	ie Lines	Log	Help
Administration	n					Select	from the	tabbed choi	ices ab	ove
							C	SAVE	\Box	Cancel
Src 3		AB-1)		Dst B2					
	Α	AB-2) В							
		AB-3)[JC						
	В	BA-1	A (

This page shows that the source, "Src 3", is entering router "A" and output through the tie line named AB-1 to enter router "B" and finally being sent to destination "Dst B2".

Clicking directly on the tie line icon for AB-1 will pop up some brief information about that tie line.

thinklogi	cal X4c	onfigurator	CONN	ECT ADMIN	MACROS	STUDIO CON	BI GROUPS	S LOGOUT
Extend + Distribute + Innovate			Macros	Stations	Routers	Snapshots	Tie Lines	Log Help
Administration						Select from t	he tabbed cho	ices above
							SAVE	Cancel
Src 3	A The page	AB-1 AB-2 AB-3 at localhost:8080 say:	B		Dst B2			
	Same and the second sec	Line ===== IT-0071 IR-0061	ОК					

As you can see from this graphical representation and from the earlier tie line table on the ADMIN: **Routers** page, we have three tie lines leading from A to B and only one from B to A. To see what happens when the tie lines become "oversubscribed," go back to the *CONNECT* page and connect a source on B to a destination on A.

thinklogical X4Configurator	CONNECT	ADMIN	MACROS	STUDIO	COMBI	GROUPS	LOGOUT
Extend - Distribute - Innovate				ALL	1-5	1357	Help
Connections			Click a s	source and	then one	or more dest	inations
SOURCES	DESTINATIONS			DESTIN	ATIONS -		
Src 1 X Src B1 X	Dst 1				Ost B1		
Src 2 X Src B2 X	Dst 2				Ost B2	X 5	rc 3 🔒
Src 3 X	Dst 3	Х					
Src 4 X	Dst 4	X	Src B1				
Src 5 X	Dst 5						
Src 6 X	Dst 6	Х					
Src 7 X	Dst 7	Х					
Src 8 X	Dst 8	Х					
Src 9 X	Dst 9	Х					
Src 10 X	Dst 10	Х					

thinklogi	cal X	4 Configurator	CONN	ECT ADMIN	MACROS	STUDIO	COMBI	GROUPS	LO	GOUT
Extend • Distribute • Innovate			Macros	Stations	Routers	Snapsh	ots T	e Lines	Log	Help
Administration						Select	from the t	abbed choi	ces abov	0
							C	SAVE	Car	ncel
Src 3		AB-1	0		Dst B2					
	Α	AB-2	в	0						
	101940	AB-3								
Src B1	В	BA-1	A		Dst 4					

Note that only the tie line from B to A is in use. Now return to the *CONNECT* page (for which you probably have kept a browser tab open) and connect another B source to another A destination.

← → C ↑ [] localhost:8080/connect	5	2
thinklogical [®] X4cont	CONNECT ADMIN MACROS STUDIO COMBI GROUPS LO	30U
Extend • Distribute • Innovate	ALL 1-5 1357 H	elp
Connections	Click a source and then one or more destinations No path avail	able
SOURCES	DESTINATIONS	
Src 1 X Src B1 X	Dst 1 X Dst B1 X	
Src 2 X Src B2 X	Dst 2 🗶 Dst B2 🗙 Src 3 🖗	1
Src 3 X	Dst 3 X	
Src 4 X	Dst. 4 X Src B1	
Src 5 X	Dst 5 X	
Src 6 X	Dst 6 X	
Src 7 X	Dst 7 X	
Src 8 X	Dst 8 X	
Src 9 X	Dst 9 X	
Src 10 X	Det 10	

The red message "No path available" will appear for a few seconds and then disappear whenever there are not enough tie lines to complete the desired connection.

Here is how the same condition looks on the STUDIO and COMBI screens.

Destination Categories (page 1 of 1)	Dst Src	Source Categories (page 1 of 1)
ALL 1-5 1357	< >> < >> < >> < >> < >> < >> < >> < >	ALL 1-5 1357
Destination Entries (page 1 of 1)	Dst Pages Src Pages	Source Entries (page 1 of 1)
Dst 1 Dst 2 Dst 3 Src 81 Dst 4 Dst 5 Dst 6 Dst 6	 <th>Src 1 Src 2 Src 3 Src 4 Src 5 Src 6 Src 7 Src 8 Src 9</th>	Src 1 Src 2 Src 3 Src 4 Src 5 Src 6 Src 7 Src 8 Src 9
Dst 7 Dst 8 Dst 9	No path available	Src 10 Src B1 Src B2
Dst 10 Dst 81 Dst 82		
Sequences		
mac 1 mac 2		thinklogical
Actions		
DESTINATION: Dst 5		BREAK (VIEW) SHARE LOG IN



ADMIN: Snapshots

A "Snapshot" is a complete record of all the active connections on all the routers at the time it was recorded. It is a simple way to return all the connections to a previous state.

Snapshots are created and recalled from the *ADMIN* page **Snapshots** tab.

thinklogical [®] X4Configurator	CONN	ECT ADMIN	MACROS	STUDIO COI	MBI GROUP	S LO	OGOUT
Extend + Distribute + Innovate	Macros	Stations	Routers	Snapshots	Tie Lines	Log	Help
Administration				Select from	the tabbed ch	oices abc	ve
Select Snapshot to modify/delete							
xbk_284_12_43_55 xbk_284_12_43_59 xbk_284_12_44_39	xbk_284_	12_44_41	xbk_2	84_12_46_35]		
xbk_284_12_46_37 xbk_284_12_46_51 xbk_284_12_46_53	xbk_284_	12_58_44	xbk_2	84_12_58_45]		

The buttons that begin with xbk_ are created automatically during an operation and are the results of the last ten actions (connects or disconnects). The names always begin with "xbk_' followed by the day of the year, hour, minute and second. To go back to a previous time, click the button for that time.

A confirmation dialog will appear with one last chance to cancel.

				SAVE	Cancel
Select Snapshot to modify/delete 🗘					
xbk_284_12_43_55	The page at localhost:8080 says:	xbk_284_12_44_41	xbk_284_12_46_35]	
xbk_284_12_46_37	This will conform every port on every router to the snapshot named: "xbk_284_12_58_44". This can be very disruptive.	xbk_284_12_58_44	xbk_284_12_58_45]	
	Are you sure? Cancel to abort. OK to continue.				

Click OK and the action is performed.

To create a new snapshot with your own title, either select the most recent automatic snapshot from the drop-down list and give it your own name or pull down to the last option and select "Create New Snapshot".

Select Snapshot to modify/delete
xbk_284_12_43_55
xbk_284_12_43_59
xbk_284_12_44_39
xbk_284_12_44_41
xbk_284_12_46_35
xbk_284_12_45_37
xbk_284_12_45_51
xbk_284_12_45_53
xbk_284_12_58_44
xbk_284_12_58_45
Create New Snapshot

To give it a new name, click the "Press to Record" button and the new snapshot is created.

					SAVE	Cancel
Create New Snapshot	Change name here	Press to Record				
xbk_284_12_43_55	xbk_	The page at localhost:8080 says:	284_12_44_41	xbk_284_12_46_35]	
xbk_284_12_46_37	xbk_		284_12_58_44	xbk_284_12_58_45		

				(SAVE	Cancel
Select Snapshot to modify/delete 💠)					
startup	xbk_284_12_43_55	xbk_284_12_43_59	xbk_284_12_44_39	xbk_284_12_44_41		
xbk_284_12_46_35	xbk_284_12_46_37	xbk_284_12_46_51	xbk_284_12_46_53	xbk_284_12_58_44		
xbk_284_12_58_45						

NOTE: There is one last important point to remember about snapshots: When a snapshot is executed, each router will first disconnect every port and then proceed to reconnect only the ports that were connected when the snapshot was recorded. This means that every screen will first go dark and then be reconnected the way the snapshot recorded it.

ADMIN: Log

A log file is kept of all user and system maintenance activities. To see it, go to the *ADMIN* page and the **Log** tab.

thinklogical X4Configurator	CONN	ECT ADMIN	MACROS	STUDIO COI	MBI GROUPS	S LOGOUT
Extend - Distribute - Innovate	Macros	Stations	Routers	Snapshots	Tie Lines	Log Help
Administration				Select from	the tabbed cho	ices above
2012.10.10 11:24:04 (system notice) 2012.10.10 11:24:11 127.0.0.1 user 2012.10.10 12:37:01 127.0.0.1 admin 2012.10.10 12:37:02 (system notice) 2012.10.10 12:37:02 2012.10.10 12:37:02 (system notice) 2012.10.10 12:38:58 127.0.0.1 2012.10.10 12:38:58 127.0.0.1 admin 2012.10.10 12:38:58 (system notice) 2012.10.10 12:38:58 2012.10.10 12:38:58 (system notice) 2012.10.10 12:43:58 (system notice) 2012.10.10 12:43:58 (system notice) 2012.10.10 12:43:44 127.0.0.1 admin 2012.10.10 12:43:46 127.0.0.1 admin 2012.10.10 12:43:54 127.0.0.1 admin 2012.10.10 12:43:54 127.0.0.1 admin 2012.10.10 12:44:37 127.0.0.1 admin 2012.10.10 12:44:37 127.0.0.1 admin 2012.10.10 12:44:42 127.0.0.1 admin 2012.10.10 12:46:36 127.0.0.1 admin 2012.10.10 12:46:42<	access warning user8 login (local) success u uploader ['stat changes found, config r loading configuration f uploader ['stat changes found, config r loading configuration f share "Dat 1 disconnect src "Src 2 disconnect src "Src 2 disconnect src "Src 2 share "Dat 8 share "Dat 9 share "Dat 9 share "Dat 9 share "Dat 3 share "Dat 3 share "Dat 3 share "Dat 4 disconnect src "Src 4 loading configuration f	27.0.0.1 atte ser "admin", ionsAB.csv'] eload iles "a"Src B1" " " " " " " " " " " " " " " " " " "	mpted to ac group "admi	cess connect.) n" wes, lest at 20	ntml. Denied.	37:02)
2012.10.10 12:30:30 (system notice) 2012.10.10 13:02:27 127.0.0.1 admin 2012.10.10 13:09:44 127.0.0.1 admin 2012.10.10 19:05:36 127.0.0.1 admin 2012.10.10 19:11:00 127.0.0.1 admin	changes round, Config r share "Dst 6 share "Dst 5 snapExec "xbk_2 snapNew "start	"="Src B2" "="Src B2" 84_12_58_44" up"	itea 2 times	, iast at 201.	2.10.10 12:37	() () () () () () () () () () () () () (

ADMIN: Help

The final tab is context sensitive "Help." A short help pop-up is available for every tab on the *ADMIN* page and also on the *CONNECT* page.

think		figurator		CONNEC	T ADMIN	MACROS	STUDIO CO	MBI GROUP	S LOGOL	JT
Extend • Distribute • Int		ingulator	M	lacros	Stations	Routers	Snapshots	Tie Lines	Log Hei	lp
Administ	tration						Select from	the tabbed ch	oices above	
2012. 2012.	The page at localhost:808 The blue links across the top are that your user group is authorize The "Log" displays a recorded his profremed by the user interface, connections, disconnections, ma It is also helpful in finding config execution errors. X4Configurator: Version (0 2010-2012 Thinklo All rights reserved	0 says: a additional pages ed to access. story of actions including logins, incros, and snapshots. guration and X44.02.41 inc. i. OK	ress warning jin (local) au loader mages found, c ading configur loader mages found, c iding configur ire connect src iconnect src iconnect src ire ponnect ire ponnect ire ponnect ire ponnect ire ponnect ire ponnect ire ponnect ire ponnect ire ponnect ire ponnect ire ponnect ire ponnect ire ponnect ire ponnect ire ponnect ire ponnect p	user@127. ccess use: ['station onfig rela ation fill "Src 1" "Src 2" "Src 9" "Src 9" "Src 9" "Src 9" "Src 9" "Src 9" "Dst 11" "Dst 11" "Dst 3" "Dst 3"	.0.0.1 att: r "admin", isAB.csv'] ad bs 'src B1" "Src B1" "Src B1" "Src B1" "Src B1" Src B2" Src B2"	group "adm	ccess connect.	html. Denied		
2012.10.10 1 2012.10.10 1 2012.10.10 1 2012.10.10 1 2012.10.10 1 2012.10.10 1 2012.10.10 1 2012.10.10 1 2012.10.10 1	2:46:44 127.0.0.1 2:46:51 127.0.0.1 2:58:42 127.0.0.1 2:38:58 (system notice) 2:38:58 (system notice) 3:02:27 127.0.0.1 3:08:44 127.0.0.1 9:05:36 127.0.0.1 9:11:00 127.0.0.1	admin admin admin admin admin admin	share disconnect src share loading configur changes found, c share share snapExec snapExec snapNew	"Dst 3"= "Src B1" "Dst 4"= ation file onfig relo "Dst 6"= "Dst 5"= "xbk_284 "startup"	"Src B1" es (rep ad (reps "Src B2" "Src B2" 12_58_44"	peated 2 tin ated 2 time:	mes, last at 2 s, last at 201	012.10.10 12 2.10.10 12:3	:37:02) 7:02)	Ç

CONNECT Page

Click the *CONNECT* link at the top of the page.

thinkle Extend - Distribute - Innovate	gical [®] X4	Configurator	CONNECT ADMIN MACROS STUDIO COMBI GROUPS LOGOUT
Connection	ıs		Click a source and then one or more destinations
SOURCES	I SOURCES	I SOURCES	DESTINATIONS
Src 1 X	Src 11 X	Src 21 X	Dst 1 🕺
Src 2 X	Src 12 X	Src 22 X	Dst 2 X
Src 3 X	Src 13 X	Src 23 X	Dst 3 X
Src 4 🗙	Src 14 X	Src 24 X	Dst 4 X
Src 5 X	Src 15 X	Src 25 X	Dst 5 X
Src 6 X	Src 16 X	Src 26 X	Dst 6 X
Src 7 🗙	Src 17 🗙	Src 27 🗙	Dst 7
Src 8 X	Src 18 X	Src 28 X	Dst 8
Src 9 X	Src 19 X	Src 29 X	Dst 9 X
Src 10 🗙	Src 20 X	Src 30 X	Dst 10
SOURCES-			DESTINATIONS
Src 31 X			Dst 11
Src 32 X			Dst 12
Src 33 X			Dst 13
Src 34 X			Dst 14
Src 35 X	=		A Dst 15

Sources are on the left, destinations on the right. Click Src 1 and it will highlight in light blue.

ß	OURCES	1	SOURCES		SOURCES	DESTINATIONS
	Src 1	X	Src 11	X	Src 21 X	Dst 1 X
	Src 2	X	Src 12	X	Src 22 X	Dst 2 X
	Src 3	X	Src 13	x	Src 23 X	Dst 3 X
	Src 4	X	Src 14	x	Src 24 X	Dst 4

Now that Src 1 is selected, click Dst 3.

1	SOURCES		SOURCES		SOURCES		· •	P	ESTINATIONS -			
	Src 1	X	Src 11	Х	Src 21	Х			Dst 1	X		
	Src 2	X	Src 12	X	Src 22	X			Dst 2	Х		
	Src 3	Х	Src 13	X	Src 23	Х			Dst 3	X	Src 1	ĥ
	Src 4	Х	Src 14	X	Src 24	Х			Dst 4	X		

Now Dst 3 shows that Src 1 is driving it. The disconnect X in the center takes on the color of the source's top border and the name "Src 1" appears on the right side of the destination. The small mouse icon indicates that the data return from Dst 3 is driving Src 1.

On the left side, the rectangle for Src 1 gets a dashed, upper border to show that it is in use.



By mousing over Src 1 or Dst 3, the dashed border on the source will turn solid and all destinations being driven by it will have their top, gray borders become thicker and turn the color of the source that's driving them.

By default, when additional destinations are connected to a previously connected source, they will all *SHARE* the video from the source, but only the last one connected will have control of the mouse (as shown by the icon). *SHARE* will be explained below.



Here we have clicked Dst 4, which will now show the same, Src 1 video as Dst 3. But as the mouse icon shows, only the last destination clicked, Dst 4, is driving the data return back to the source.

Clicking a destination's colored X will disconnect that destination and clicking the X at the right side of the *source* will disconnect *all* the destinations connected to that source.

As stated above, when new destinations are connected to an already connected source, they will all SHARE the video and only one will have the data return. But SHARE is only one of three connection modes:

- SHARE: multiple video connections, last connection has data return
- **TAKE**: each newly connected destination removes the video from all previous destinations and the new destination also has the data return
- **VIEW**: each newly connected destination can view the video but will not take the data return.

To change the connection mode, return to ADMIN: Stations.

thinklogi Extend - Distribute - Innovate	cal[®] X4 Conf	gurator	CONN	ECT ADMIN	MACROS S	STUDIO COI Snapshots	MBI GROUPS	LOGOUT
Administration						Select from	the tabbed cho	ices above
					port	Export	SAVE	Cancel
Click inside any cell to char right-click inside any colum	nge the contents of that cell, n header to add or delete colu	<i>ight-click</i> inside any cell to mns (if appropriate), and p	o see additional row of ress the SAVE or Ca	otions, n cel buttons (above) when changes	s are complete.		
# Stations (version: X4								
Width: Heigi	ht: Font Size:	Update Interval: 2000	Destination Side: RIGHT	Connection Type: SHARE	Touch Type	STUDIO	BREAK:	U
Source Category: Source ALL	ce Category: Source Categ	ory: Source Category:	Source Category:	Source Category:	Source Cate	egory:		
Destination Catego Desti	ination Categol Destination C	ategol Destination Catego	Destination Catego	Destination Categ	ol Destination	Catego		

Click SHARE under *Connection Type:* in the first table.

Width:	Height:	Font Size:	Update Interval:	Destination Side:	Connection Type:	Touch Type:	STUDIO BREAK:
120	28	12	2000	RIGHT	SHARE	VIEW	HIDE
						😣 Connect	
Source Category:	TAKE Y:						
ALL						SHARE	
						VIEW	
Destination Catego	ego						
ALL							

Mouse over and select TAKE.

Width:	Height:	Font Size:	Update Interval:	Destination Side:	Connection Type:	Touch Type:	STUDIO BREAK:
120	28	12	2000	RIGHT	SHARE	VIEW	HIDE
						🙁 Connect	
Source Category:	Y:						
ALL						SHARE	
						VIEW	
Destination Catego	egol						
ALL							

If you next click the **SAVE** button, the *CONNECT* page will be in TAKE mode until you change it again. For now, leave it in SHARE mode.

While on the ADMIN: **Stations** page, examine the second and third tables that start with "Source Category" and "Destination Category." By default these rows will only have one entry: ALL.

Station Categories

Return to the **CONNECT** page.

thinkle Extend - Distribute - Innovat	ogical X4	Configurator	C	CONNECT	ADMIN	MACROS	STUDIO	COMBI	GROUPS	LOGOUT Help
Connection	ns					Click a	source and	then one	or more dest	inations
SOURCES-	SOURCES	SOURCES		DESTINATIO	NS		1			ſ
Src 1 X	Src 11 X	Src 21 X		Dst	L .,					
Src 2 X	Src 12 X	Src 22 X		Dst	2	X.				

There are two tabs on this page: **ALL** and **Help**. If you want to break up the stations into smaller collections, go back to the page.

thinklo	gical	4Configu	rator	CONN	ECT ADMIN	MACROS	STUDIO CO	MBI GROUP	S LOG	GOUT
Extend • Distribute • Innovate	<u>g</u> /	. i connigu	lutor	Macros	Stations	Routers	Snapshots	Tie Lines	Log	Help
Administrat	ion						Select from	the tabbed ch	oices above	Ð
						oort	Export	SAVE	Can	icel)
Click inside any cell t right-click inside any	o change the conten column header to ad	ts of that cell, <i>right-c</i> d or delete columns (lick inside any cell to (if appropriate), and p	see additional row or ress the SAVE or Ca	otions, ncel buttons (abov	ve) when chang	es are complete.			
					52	20				
# Stations (version	n: X4.4)									
Width: 120	Height: 28	Font Size:	Update Interval: 2000	Destination Side: RIGHT	Connection Typ SHARE	e: Touch Typ VIEW	De: STUDIC HIDE	BREAK:		U
Source Category:	Source Category:	Source Category:	Source Category:	Source Category:	Source Category	v: Source Ca	tegory:			
ALL	1-5									
Destination Catego	Destination Catego	Destination Catego	Destination Catego	Destination Catego	Destination Cat	Dectiontic	Catago			

Here is added a new entry to both the source and destination categories, "**1-5**". Click **SAVE** and return to the *CONNECT* page.



Click on the new tab **1-5** next to **ALL**.

thinklogical [®] X4Configurator	CONNECT ADMIN MACROS STUDIO COMBI GROUPS LOGOUT
Connections	Click a source and then one or more destinations

The tab is selected, but there are no sources or destinations.

Go back to the ADMIN: **Stations** page:

Width:	Height:	Font Size:	Update Interval:	Destination Side:	Connection Type:	Touch Type:	STUDIO BREAK:
120	28	12	2000	RIGHT	SHARE	VIEW	HIDE
Source Category:	Source Category:	Source Category:	Source Category:	Source Category:	Source Category:	Source Category:	
ALL	1-5						
	8						
Destination Categ	gol Destination Catego						
ALL	1-5	10			ĺ	1	
		49755	19220000	3527311			
Source Name:	Router Name:	L1:	L2:	L3:	Category:	Category:	Color:
Src 1	A	UR-001	UT-001		ALL	1-5	fuchsia
Src 2	A	UR-002	UT-002		ALL	1-5	lime
Src 3	A	UR-003	UT-003		ALL	1-5	blue
Src 4	A	UR-004	UT-004		ALL	1-5	red
Src 5	A	UR-005	UT-005		ALL	1-5	purple
Src 6	A	UR-006	UT-006		ALL		orange

Add "1-5" to the second Category column for the first five sources. Then scroll down to the destinations.

Src 40	Α	UR-040	UT-040		ALL		aqua
Destination Name:	Router Name:	L1:	L2:	L3:	Category:	Category:	
Dst 1	A	UT-041	UR-041		ALL	1-5	
Dst 2	Α	UT-042	UR-042		ALL	1-5	
Dst 3	Α	UT-043	UR-043		ALL	1-5	
Dst 4	A	UT-044	UR-044		ALL	1-5	
Dst 5	A	UT-045	UR-045		ALL	1-5	22
Dst 6	Α	UT-046	UR-046		ALL		
Dst 7	Α	UT-047	UR-047		ALL		
Dst 8	A	UT-048	UR-048		ALL		

Add "1-5" to the second Category column for the first five destinations. Then be sure to click the **SAVE** button.

Go back to the **CONNECT** page and click the **1-5** tab.

<i>thinklogical</i> [®] X4Configurator	CONNECT ADMIN MACROS STUDIO COMBI GROUPS LOGOUT
Connections	ALL 1-5 Help Click a source and then one or more destinations
SOURCES-	DESTINATIONS-
Src 1 X	Dst 1
Src 2 X	Dst 2
Src 3 X	Dst 3 X Src 1
Src 4 X	Dst 4
Src 5 X	Dst 5

Now clicking the **1-5** tab shows the sources and destinations included in that category. Stations can belong to multiple categories. To add a new category, return to *ADMIN* Stations.

Width:	Height:	Font Size:	Update Interval:	Destination Side:	Connection Type:	Touch Type:	STUDIO BREAK:
120	28	12	2000	RIGHT	SHARE	VIEW	HIDE
Source Category:	Source Category:	Source Category:	Source Category:	Source Category:	Source Category:	Source Category:	
ALL	1-5						
	<i>(</i>					2	
Destination Categ	o Destination Catego						
ALL	1-5				1		
		1997/05/	19220000	352 (31)			
Source Name:	Router Name:	L1 :	L2:	L3:	Category:	Category:	Color:
Src 1	A	UR-001	UT-001		ALL	1-5	fuchsia
Src 2	A	UR-002	UT-002		ALL	1-5	lime
Src 3	A	UR-003	UT-003		ALL	1-5	blue
Src 4	A	UR-004	UT-004		ALL	1-5	red
Src 5	A	UR-005	UT-005		ALL	1-5	purple
Src 6	A	UR-006	UT-006		ALL		orange

There are currently only two Category columns. To add a new one, right click on the top of the last Category (where it says *Category:*).

Width:	Height:	Font Size:	Update Interval:	Destination Side:	Connection Type:	Touch Type:	STUDIO BREAK:
120	28	12	2000	RIGHT	SHARE	VIEW	HIDE
				-			
Source Category:	Source Category:	Source Category:	Source Category:	Source Category:	Source Category:	Source Category:	
ALL	1-5						
	2 22						
Destination Cate	gol Destination Catego						
ALL	1-5						
Source Name:	Router Name:	L1:	L2:	L3:	Category:	Category:	Color:
Src 1	A	UR-001	UT-001		ALL	1-5	😣 Column
Src 2	A	UR-002	UT-002		ALL	1-5	Append
Src 3	A	UR-003	UT-003		ALL	1-5	Delete
Src 4	A	UR-004	UT-004		ALL	1-5	red
Src 5	Α	UR-005	UT-005		ALL	1-5	purple
Src 6	A	UR-006	UT-006		ALL	Ŭ.	orange

A pop-up window will appear. Select Append.

Width:	Height:	Font Size:	Update Interval:	Destination Side:	Connection Type:	Touch Type:	STUDIO BREAK:	
120	28	12	2000	RIGHT	SHARE	VIEW	HIDE	
5	20		12	C				
Source Category:								
ALL	1-5	1357						
Destination Catego								
ALL	1-5	1357	1					
Source Name:	Router Name:	L1:	L2:	L3:	Category:	Category:	Category:	Co
Src 1	A	UR-001	UT-001		ALL	1-5	1357	fuc
Src 2	A	UR-002	UT-002		ALL	1-5		lim
Src 3	A	UR-003	UT-003		ALL	1-5	1357	blu
Src 4	A	UR-004	UT-004		ALL	1-5	2	red
Src 5	A	UR-005	UT-005		ALL	1-5	1357	pur
Src 6	A	UR-006	UT-006		ALL.			ora
Src 7	Α	UR-007	UT-007		ALL		1357	yell
Src 8	A	UR-008	UT-008		ALL			gre
		110.000	117 000					Sec. 1

There now are three Category columns. Add "1 3 5 7" to some source rows. Next, add it to the Source Category and Destination Category tables (above). Then scroll down to the destinations

Destination Name:	Router Name:	L1:	L2:	L3:	Category:	Category:	
Dst 1	A	UT-041	UR-041		ALL	1-5	😣 Column
Dst 2	Α	UT-042	UR-042		ALL	1~5	Append
Dst 3	A	UT-043	UR-043		ALL	1-5	Delete
Dst 4	A	UT-044	UR-044		ALL	1-5	
Dst 5	A	UT-045	UR-045		ALL	1-5	
Dst 6	A	UT-046	UR-046		ALL		
Dst 7	A	UT-047	UR-047		ALL		
Dst 8	A	UT-048	UR-048		ALL		
Dst 9	A	UT-049	UR-049		ALL		

Right click the last Category header, select Append and add the new Category. Now add the new category to some sources as shown below.

Destination Name:	Router Name:	L1:	L2:	L3:	Category:	Category:	Category:
Dst 1	A	UT-041	UR-041		ALL	1-5	1357
Dst 2	Α	UT-042	UR-042		ALL	1-5	
Dst 3	Α	UT-043	UR-043		ALL	1-5	1357
Dst 4	A	UT-044	UR-044		ALL	1-5	
Dst 5	Α	UT-045	UR-045		ALL	1-5	1357
Dst 6	Α	UT-046	UR-046		ALL		
Dst 7	Α	UT-047	UR-047		ALL		1357
Dst 8	A	UT-048	UR-048		ALL		
Dst 9	Α	UT-049	UR-049		ALL		

Go back to the *CONNECT* page to see the results.

thinklogical [®] X4Configurator	CONNECT ADMIN MACROS STUDIO COMBI GROUPS LOGOUT
Extend - Dishibute - Innovale	ALL 1-5 1357 Help
Connections	Click a source and then one or more destinations
ISOURCES	DESTINATIONS
Src 1 X	Dst 1
Src 3 X	Dst 3 X Src 1 A
Src 5 X	Dst 5 X
Src 7 X	Dst 7 💢

MACROS Page

A macro is a sequence of operations that the user can create, save, and recall to repeat steps that will be executed frequently. They can be restricted to specific user groups or made available to all groups.

The easiest way to create a macro is to perform the desired steps and then let the *MACROS* page tell you what you've done and how to save it.

Use the *CONNECT*, *STUDIO*, or *COMBI* pages to make and/or break some connections and then select the *MACROS* link from the top of the page.

Initially, this page is blank since no macros have been created yet.

thinklogical	CONNECT ADMIN MACROS STUDIO COMBI GROU	IPS LOGOUT Help
Macros	Pressing a button (below) will execute that macro	Macro from History

Click the "Macro from History" button on the right side of the black bar.

11-1	cros		Pressing	a button (below) will e	xecute that	macro	Back to I	Macros
						New Mac	ro name?	SAVE	
	Action:	Destination/Macro:	Source:						
S	HARE	Dst 3	Src 1						
S	HARE	Dst 6	Src 1						
S	HARE	Dst 1	Src 2						
] s	HARE	Dst 8	Src 9						

The page now shows the most recent connect and disconnect operations that have been performed at this location by this user. Check the rows that should be part of a macro (in this case by using the "Select All" button) and enter a new name for the macro in the "New Macro Name?" field.

t Exter	hinklog	gical ⁻ X4	CONNECT Configurato	ADMIN r	MACROS	STUDIO	COMBI	GROUPS	LOGOUT
M	acros		Pressing	a button (below) will e	xecute that	t macro	Back	to Macros
						mac 1		SAV	E
	Action:	Destination/Macro:	Source:	Í.					
☑	SHARE	Dst 3	Src 1	1					
⊻	SHARE	Dst 6	Src 1	1					
\checkmark	SHARE	Dst 1	Src 2	1					
₫	SHARE	Dst 8	Src 9	1					
Se	lect All Deselect All	Clear History							

Next click the "SAVE" button and wait for the update. After a few seconds, the new macro will appear in its own box on the *MACROS* page.

thinklogical X4cc	CONNECT ADMIN	MACROS	STUDIO	COMBI	GROUPS	LOGOUT
Macros	Pressing a button	(below) will e	xecute the	t macro	Macro	from History
mac 1						

Clicking this button will execute the macro immediately.

Macros can also include other macros. Click the "mac 1" button, go to the *CONNECT* page and add one more connection.

Now return to the *MACROS* page and click "Macro from History".

			inch macro name:	Shire
Action:	Destination/Macro:	Source:		
SHARE	Dst 3	Src 1		
SHARE	Dst 6	Src 1		
SHARE	Dst 1	Src 2		
SHARE	Dst 8	Src 9		
MACRO	mac 1			
SHARE	Dst 11	Src 4		

Select the last two steps. Give this new macro a name and click SAVE.

mac 1	mac 2

"mac 2" will first execute "mac 1" and then perform any additional steps.

Macros are also available on the *STUDIO* page where they are called "Sequences".

Destination Calegories (page 1 of 1)	Dst Sro	Source Categories (page 1 of 1) ^11
Destination Entries (page 1 of 2) Src 2 (Src 1) Dst 1 Dst 2 Dst 3 Src 1 Dst 4 Dst 5 Src 9 Src 9 Dst 7 Dst 8	Det Pages Stro Pr	ges Source Entries (page 1 of 1) Src 1 Src 2 Src 3 Src 4 Src 5 Src 6 Src 7 Src 8 Src 9 Src 10 Src 81 Src 82
Sequences Mac 1 mac 2 Actions DESTINATION: Dst 4		thinklogical [®]

To execute a macro or "sequence" on the *STUDIO* page, select it and it will highlight. Then click the TAKE button to execute it.

The *STUDIO* page has another feature involving sequences: right click on one and it will display the actions that will be performed.

Destination Categories (page 1 of 1)	Ost Src < > < > < > < > < > <	Source Categories (page 1 of 1)
Destination Entries (page 1 of 2) Src 2 (Src 1) (Src 1) Dst 1 Dst 2 Dst 3 Src 1 Src 1 ACTION DESTINATION SOURCE SHARE Dst 3 Src 1 SHARE Dst 6 Src 1 SHARE Dst 1 Src 2 VIEW Dst 2 Src 1 SHARE Dst 8 Src 9	Dst Pages Src Pages	Source Entries (page 1 of 1) Src 1 Src 2 Src 4 Src 5 Src 7 Src 8 Src 10 Src 81
Sequences mac 1 Actions DESTINATION: Dst 4		thinklogical BREAK (VIEW) SHARE LOC IN

Left click on the sequence's description to close it.

Creating/Editing/Deleting Macros

Go to the *ADMIN* page and select **Macros** from among the tabs. Select "mac 1" from the "First Select Macro" drop down on the left side of the page.

thinkl Estend • Distribute • Innex Administra	ogical [®]	X4Config	urator	I ADMIN	MACRUS	510010 00	JINDI GROUPS	
Edend - Distribute - Innov	ation	A-+Config	urator					20000
Administr	ation							
Administr	ation		Macros S	Stations	Routers	Snapshots	Tie Lines	Log Hel
						Select from	n the tabbed choic	ces above
							SAVE	Cancel
lick inside any ce ight-click inside a First Select Macro.	ell to change the conte ny <i>column header</i> to a 🛊 New Name? (or	nts of that cell, <i>righ</i> dd or delete column leave unchanged)	<i>t-click</i> inside any cell s (if appropriate), and	to see additio press the SA	nal row options VE or Cancel t	, puttons (above) w	hen changes are con	nplete.
							Delete	This Macro
							SAVE	Cancel
lick inside any cr	ell to change the conte	nts of that cell. righ	t-click inside any cell	to see additio	nal row options	2		
ight-click inside a	ny column header to a	dd or delete column	s (if appropriate), and	press the SA	VE or Cancel	outtons (above) w	hen changes are con	nplete.
mac 1	New Name? (or	leave unchanged) r	nac 1	65			1	38
mac 1		icave anonanged/ i	inde 1					
							Delete	This Macro
Groups that can	see this macro							
Groups that can	see this macro	Group:	Group:	Grou):	Group:	Group:	Group:
Groups that can Group:	see this macro <i>Group:</i>	Group:	Group:	Grouj):	Group:	Group:	Group:
Groups that can Group: undefined	see this macro Group:	Group:	Group:	Grouj):	Group:	Group:	Group:
Groups that can Group: undefined	see this macro Group:	Group:	Group:	Grouj):	Group:	Group:	Group:
Groups that can Group: undefined Action:	see this macro Group: Destination:	Group: Source:	Group:	Grouj) :	Group:	Group:	Group:
Groups that can Group: undefined Action: SHARE	see this macro Group: Destination: Dst 3	Group: Source: Src 1	Group:	Grouj) :	Group:	Group:	Group:
Groups that can Group: undefined Action: SHARE SHARE SHARE	see this macro Group: Destination: Dst 3 Dst 6	Group: Source: Src 1 Src 1	Group:	Grouj):	Group:	Group:	Group:
Groups that can Group: undefined Action: SHARE SHARE SHARE	see this macro Group: Destination: Dst 3 Dst 6 Dst 1	Group: Source: Src 1 Src 1 Src 2	Group:	Grouj):	Group:	Group:	Group:
F Groups that can Group: undefined Action: SHARE SHARE SHARE SHARE	see this macro Group: Destination: Dst 3 Dst 6 Dst 1 Dst 8	Group: Source: Src 1 Src 1 Src 2 Src 9	Group:	Grouj	2:	Group:	Group:	Group:

From this page the macro can be renamed, modified, or deleted.

To add a step, right click on the row either above or below the desired point in the sequence. In this example we have chosen to insert a step before the last step.

Group:	Group:	Group:	Group:	Group:	Group:	Group:	Group
undefined							
Action:	Destination:	Source:					
SHARE	Dst 3	Src 1					
SHARE	Dst 6	Src 1					
SHARE	Dst 1	Src 2					
SHARE	Dst 8	Src 9					
# Groups that ca	n see this macro						
# Groups that ca <i>Group:</i>	n see this macro Group:	Group:	Group:	Group:	Group:	Group:	Group:
# Groups that ca <i>Group:</i> undefined	n see this macro Group:	Group:	Group:	Group:	Group:	Group:	Group:
# Groups that ca <i>Group:</i> undefined	n see this macro Group:	Group:	Group:	Group:	Group:	Group:	Group:
# Groups that ca Group: undefined Action:	n see this macro Group: Destination:	Group: Source:	Group:	Group:	Group:	Group:	Group:
# Groups that ca Group: undefined Action: SHARE	n see this macro Group: Destination: Dst 3	Group: Source: Src 1	Group:	Group:	Group:	Group:	Group:
# Groups that ca Group: undefined Action: SHARE SHARE	n see this macro Group: Destination: Dst 3 Dst 6	Group: Source: Src 1 Src 1	Group:	Group:	Group:	Group:	Group:
# Groups that ca Group: undefined Action: SHARE SHARE SHARE	n see this macro Group: Destination: Dst 3 Dst 6 Dst 1	Group: Source: Src 1 Src 1 Src 2	Group:	Group:	Group:	Group:	Group:
# Groups that ca Group: undefined Action: SHARE SHARE SHARE SHARE	n see this macro Group: Destination: Dst 3 Dst 6 Dst 1 Row	Group: Source: Src 1 Src 1 Src 2 Src 9	Group:	Group:	Group:	Group:	Group
# Groups that ca Group: undefined Action: SHARE SHARE SHARE SHARE	n see this macro Group: Destination: Dst 3 Dst 6 Dst 1 Row Insert	Group: Source: Src 1 Src 1 Src 2 Src 9	Group:	Group:	Group:	Group:	Group
# Groups that ca Group: undefined Action: SHARE SHARE SHARE SHARE	n see this macro Group: Destination: Dst 3 Dst 6 Dst 1 Row Insert Append	Group: Source: Src 1 Src 1 Src 2 Src 9	Group:	Group:	Group:	Group:	Group

Left click on the empty field below Action and you will be given a choice of Actions.

# Groups that can see	this macro						
Group:	Group:	Group:	Group:	Group:	Group:	Group:	Group:
undefined							
Action:	Destination:	Source:					
SHARE	Dst 3	Src 1					
SHARE	Dst 6	Src 1					
SHARE	Dst 1	Src 2					
SHARE	Action	Src 9					
	TAKE SHARE VIEW DISCONNECT MACRO						

Select VIEW and then click on the empty field below Destination to call up the pop-up of destinations.

Group:	Group:	Group:	Group:	Group	e -	Group:	Group:	
undefined								
Action:	Destination:	Source:						
SHARE	Dst 3	Src 1						
SHARE	Dst 6	Src 1						
SHARE	Dst 1	Src 2						
VIEW								
SHARE	Dst 8	X	Destination					
		Dst 1 Dst 4 Dst 7 Dst 10 Dst 10 Dst 13 Dst 16 Dst 19 Dst 22	Dst 2 Dst 5 Dst 8 Dst 11 Dst 14 Dst 17 Dst 20 Dst 22	Dst 3 Dst 6 Dst 9 Dst 12 Dst 15 Dst 15 Dst 18 Dst 21	•			
finally de	the same for	the source						

# Groups that can see	e this macro						
Group:	Group:	Group:	Group:	Group:	Group:	Group:	Group:
undefined							
Action:	Destination:	Source:					
SHARE	Dst 3	Src 1					
SHARE	Dst 6	Src 1					
SHARE	Dst 1	Src 2					
VIEW	Dst 2						
SHARE	Dst 8	Src 9	×	Source			
			Src 1 Src 4 Src 7 Src 10 Src 10 Src 13 Src 16 Src 19	Src 2 S Src 5 S Src 8 S Src 11 Sr Src 14 Sr Src 17 Sr Src 20 Sr Src 22 Sr	rc 3 rc 6 rc 9 c 12 c 15 c 15 c 18 c 21 c 21		

If the name is to be changed, it will be done in the field to the right of "New Name? (or leave unchanged)"

Administratio	on
Click inside any cell to	change the contents of that cell, <i>right-click</i> inside any cell to s
right-click inside any cc	<i>lumn header</i> to add or delete columns (if appropriate), and pre
mac 1	New Name? (or leave unchanged) mac 1

Finally, there is a row of Group headings that decide which users can see and execute this macro. The admin group can see all of them, but if other groups need to see them, they must all be listed. For this example we've changed "undefined" to "user" so user can see it.

# Groups that can see this macro									
Group:	Group:	Group:	Group:	Group:	Group:	Group:	Group:		
user									
Action:	Destination:	Source:							
SHARE	Dst 3	Src 1							
SHARE	Dst 6	Src 1							
SHARE	Dst 1	Src 2							
VIEW	Dst 2	Src 1							
SHARE	Dst 8	Src 9							

Click **SAVE** when all changes are complete.

STUDIO Page

Destination Categories (page 1 of 1)	Dst	Source Categories (page 1 of 1)
ALL 1-5 1357	< >> < >>	A4. 1-5 1357
Destination Entries (page 1 of 4)	Dst Pages Src Pages	Source Entries (page 1 of 2)
Dst 1Dst 2Dst 3Dst 4Dst 5Dst 6Dst 7Dst 8Dst 9Dst 10Dst 11Dst 12	 > ><th>Src 1 Src 2 Src 3 Src 4 Src 5 Src 6 Src 7 Src 8 Src 9 Src 10 Src 11 Src 12 Src 13 Src 14 Src 15 Src 16 Src 17 Src 18 Src 19 Src 20 Src 21</th>	Src 1 Src 2 Src 3 Src 4 Src 5 Src 6 Src 7 Src 8 Src 9 Src 10 Src 11 Src 12 Src 13 Src 14 Src 15 Src 16 Src 17 Src 18 Src 19 Src 20 Src 21
Sequences		
		<i>thinklogical</i> "
Actions DESTINATION: TAKE		(VIEW) SHARE LOG D

On the **STUDIO** page, the sources and destinations are reversed from the default **CONNECT** page. Here, sources are on the right and destinations on the left. Notice that the categories already created appear at the top of the page, but that the destination category and source category can be selected independently, as shown below.



To perform operations on this page, click the ALL button for both Source and Destination categories (top left and right) to show all the stations. To make a connection, select a destination and a source (in either order) and then select from the connection types along the bottom (TAKE, (VIEW), SHARE).

Destination Categories (page 1 of 1)	Dat Src < > < < > < >	Source Categories (page 1 of 1)
Destination Entries (page 1 of 4) Src 1 Dst 1 Dst 2 Dst 3 Dst 4 Dst 5 Dst 6 Dst 7 Dst 8 Dst 9 Dst 10 Dst 11 Dst 12 Dst 12	Det Pages Src Pages I I I I I I I I	Source Entries (page 1 of 2) Src 1 Src 2 Src 3 Src 4 Src 5 Src 6 Src 7 Src 8 Src 9 Src 10 Src 11 Src 12 Src 13 Src 14 Src 15 Src 16 Src 17 Src 18 Src 19 Src 20 Src 21
Sequences		<i>thinklogical</i> "
Actions DESTINATION: Dst 6 TAKE		

Here is selected Dst 6 and Src 4. Notice that Dst 6 appears in a window at the bottom left before we've performed any action to make sure we're affecting the correct destination.

Click the TAKE button (blue, bottom, next to the DESTINATION window) and the connection is made.

Destination Categories (page 1 of 1)	Dst	Src	Source Categories (page 1 of 1)
AL 1-5 1357	< > < >	< > < >	ALL 1-5 1357
Destination Entries (page 1 of 4)	Dst Pages	Src Pages	Source Entries (page 1 of 2)
Dst 1Dst 2Dst 3Dst 1Dst 2Dst 3Dst 4Dst 5Dst 6Dst 7Dst 8Dst 9Dst 10Dst 11Dst 12	X X	X X	Src 1 Src 2 Src 3 Src 4 Src 5 Src 6 Src 7 Src 8 Src 9 Src 10 Src 11 Src 12 Src 13 Src 14 Src 15 Src 16 Src 17 Src 18 Src 19 Src 20 Src 21
Sequences			-
			<i>thinklogical</i> [®]
Actions DESTINATION: Dst 6 Loc		LOCK	(VIEW) SHARE LOG IN

As mentioned earlier, the TAKE type connection performs differently than the SHARE and (VIEW). Leave Src 4 selected, select destination Dst 5 and click TAKE.

Now Dst 5 has Src 4 and the space above Dst 6 is blank, which signifies no connection.

Destination Categories (page 1 of 1)	Dat 4	Src < > < >	Source Categories (page 1 of 1)
- Destination Entries (page 1 of 4) Src 1 Dst 1 Dst 2 Dst 3 Src 4 Dst 4 Dst 6 Dst 7 Dst 8 Dst 9 Dst 10 Dst 11 Dst 12 Dst 1	Dst Pages	Src Pages	Source Entries (page 1 of 2) Src 1 Src 2 Src 3 Src 4 Src 5 Src 6 Src 7 Src 8 Src 9 Src 10 Src 11 Src 12 Src 13 Src 14 Src 15 Src 16 Src 17 Src 18 Src 19 Src 20 Src 21
Sequences			<i>thinklogical</i> [~]
Actions DESTINATION: Dst 5 TAKE	K UNLOC	×	(VIEW) C SHARE C LOG IN

By default, there is no way to disconnect stations on the **STUDIO** page.

If necessary or desirable, there is a way to add one. Using the browser's back key, go to the *ADMIN* **Stations** page. In the first table on the page, click the field below the *STUDIO BREAK:* header.

thinkle	gical	<mark>X4</mark> Configu	rator	CONN	ECT ADMIN	MACROS	STUDIO CO	MBI GROUP	S LOGOUT
Administra	tion			Macros	Stations	Routers	Snapshots Select from	Tie Lines	Log Help
						mport	Export	SAVE	Cancel
Click inside any cel right-click inside an # Stations (versi	to change the content y column header to an on: X4.4)	nts of that cell, <i>right-c</i> dd or delete columns	click inside any cell to (if appropriate), and p	o see additional row o rress the SAVE or Ca	ptions, ncel buttons (abov	re) when chan	ges are complete.		
Width:	Height:	Font Size:	Update interval:	Destination Side:	Connection Type	e: Touch T)	vpe: STUDIC	BREAK:	U
120	28	12	2000	RIGHT	SHARE	VIEW	HIDE		
Source Category: ALL	Source Category: 1-5	Source Category: 1357	Source Category:	Source Category:	Source Category	: Source C	ategory:		BREAK SHOW HIDE
Destination Catego	Destination Catego 1-5	Destination Catego 1357	Destination Catego	o Destination Catego	Destination Cate	egol Destinati	ion Categoi		

Select SHOW, click the **SAVE** button and select the *STUDIO* link. There will be a new, red "BREAK" button at the bottom. Select Dst 5, click BREAK and the destination will be disconnected.

Dst 1 Dst 2 Dst 3 Dst 4 Dst 5 Dst 6 Dst 7 Dst 8 Dst 9 Dst 10 Dst 11 Dst 12 Dst 12	Y V A A	X V X	Src 1 Src 2 Src 3 Src 4 Src 5 Src 6 Src 7 Src 8 Src 9 Src 10 Src 11 Src 12 Src 13 Src 14 Src 15 Src 16 Src 17 Src 18 Src 19 Src 20 Src 21
Sequences			thinklogical
Actions DESTINATION: Dst 5 TAKE		оск	BREAK (VIEW) SHARE LOG IN

The STUDIO page supports TAKE, SHARE, and (VIEW) connections. *The use of parentheses around VIEW is deliberate - parentheses around the source name in the destination box show that the source is being viewed but does not have the return channel and cannot control the keyboard/mouse.* If an operator wanted to see the video from a source without disturbing someone already using it, they would have to select the source and their own destination and then click (VIEW). It would then appear as below:

Destination Categories (page 1 of 1)	Dst	Src	Source Categories (page 1 of 1)
AL 1-5 1357	< > < >	< > < >	AU. 1-5 1357
Destination Entries (page 1 of 4)	Dst Pages	- Src Pages -	Source Entries (page 1 of 2)
Dst 1 Dst 2 Dst 3	K	[<	Src 1 Src 2 Src 3
(Src 1)	<	<	Src 4 Src 5 Src 6
Dst 4 Dst 5 Dot 6	▷	►	Src 7 Src 8 Src 9

The operator has selected Src 1 and Dst 6 and clicked the (VIEW) button. Now the video from Src 1 is at both Dst 3 and Dst 6, but only Dst 3 has control of the keyboard/mouse.

SHARE allows cooperative viewing. If the operator at Dst 6 clicked the SHARE button, both Dst 3 and Dst 6 would still have the video, but the keyboard/mouse control would move to Dst 6 and Dst 3 would show Src 1 in parentheses (as below).

Destination Categories (page 1 of 1)	Dst < > < >	Src < > < >	Source Categories (page 1 of 1)
Destination Entries (page 1 of 4)	- Dst Pages -	Src Pages	Source Entries (page 1 of 2)
Dst 1 Dst 2 Dst 3 Dst 4 Dst 5 Dst 6	<	< 	Src 1 Src 2 Src 3 Src 4 Src 5 Src 6 Src 7 Src 8 Src 9

At this point, Dst 1 could take back control by selecting Dst 1 and clicking SHARE.

TAKE removes the video from any destinations that are currently viewing it and also takes control of the keyboard/mouse.

The **LOCK** and **UNLOCK** buttons allow the user to restrict a source and destination. If a connected destination is selected and the the LOCK button clicked on, both that destination and the source that is feeding it become locked and unavailable for other connections. They turn red to show this status and will not allow any connection changes to the destination or the source until the destination is unlocked

In this capture, Dst 3 has been selected and the LOCK button clicked. Both are now red.



If an operator attempts to connect Src 1 with another destination, Dst 6 in the example below, the program will display a notice that no new connections or disconnections involving this source and this destination will be allowed until the destination is unlocked from the source.

Destination Categories (page 1 of 1)	Dst Src Source Categories (page 1 of 1) < > < > I< > I
Destination Entries (page 1 of 4)	Dst Pages Src Pages Source Entries (page 1 of 2)
Dst 1 Dst 2 Dst 3	I Src 1 Src 2 Src 3 Src 6
Dst 4 Dst 5 Dst 6	The page at localhost:8080 says: This source is in use by a locked destination. No changes can be made until it is unlocked.
Dst 7 Dst 8 Dst 9	

Selecting Dst 3 and clicking the blue UNLOCK button will release it.

NOTE: The **STUDIO** page does not have any clear way to move to other screens. This is intentional - *this page is designed for users and operators who will seldom need any other page*. The only way to get to other pages are either the browser's back button or by changing the browser's URL to another page.

COMBI Page

Select **COMBI** from the links across the top. (You may need to use the browser's back button if you were last on the **STUDIO** page.)

SOURCES								
ALL	1-5 1 3 5	57						
Src 1	Src 2	Src 3	Src 4	Src 5	Src 6	Src 7	Src 8	
Dst 3*								< > 1 of 2
Src 9	Src 10	Src 11	Src 12	Src 13	Src 14	Src 15	Src 16	
Src 17	Src 18	Src 19	Src 20	Src 21	Src 22	Src 23	Src 24	
DESTINATIONS	4							
ALL	1-5 1 3 1	57						
		Src 1*						
Dst 1	Dst 2	Dst 3	Dst 4	Dst 5	Dst 6	Dst 7	Dst 8	1 of 3
Dst 9	Dst 10	Dst 11	Dst 12	Dst 13	Dst 14	Dst 15	Dst 16	
think	logica	I.		TAKE	SHARE	VIEW BI		UNLOCK

This page combines features from the *CONNECT* and *STUDIO* pages and is designed to work on both full size displays and touch-screens.

As in the **STUDIO** page, the user can select a source or a destination first. Once a source and a destination have been selected, the user can connect using the buttons across the bottom right.



One difference from the *STUDIO* page is that on this page **the source icons also show which destinations they are driving**. In this example, Src 1 (top left) shows Dst 6* and Dst 3 in its window. The asterisk after Dst 6 means that it has the return channel and has control of the keyboard/mouse. In the destinations section at the bottom half of the page, both destinations show Src 1 as their source. But Dst 3 appears in parentheses, indicating it is video only, and Dst 6 has the asterisk, indicating that Dst 6 has control.

The tabs below the SOURCES and DESTINATIONS banners (ALL, 1-5, 1 3 5 7) are the same as the categories in the *STUDIO* page and the LOCK and UNLOCK functions also work the same way as in the *STUDIO* page.

There is also a *COMBI-M* Page. It includes a Macros button at the bottom, right corner that links to the *MACROS* page. In all other ways, however, it is the same as the *COMBI* page and is used mostly for demonstration purposes.

Multiple Browser Tabs

When switching back and forth between X4 pages, it is often convenient to make use of the browser's ability to maintain multiple open tabs. This way an administrator can keep the *ADMIN* page on one tab, the *CONNECT* page on another tab, and so on.

At the top of the image below, the browser shows tabs for *COMBI*, *ADMIN*, *STUDIO* and *CONNECT*, all available at the same time for easy access to whichever page is needed.

C m	l 📋 localhost:8080/a	dmin						7 전
think	logical	X4Configu	rator	CONN	ECT ADMIN N	MACROS STUD	IO COMBI GF	Roups Logo
ixtend • Distribute • Ir	nnovate	-		Macros	Stations R	Routers Snap	shots Tie Li	ines Log H
Adminis	tration					Sele	ect from the tabb	ed choices above
					Im	port Exp	ort SA	VE Cance
lick inside an	cell to change the conter	ats of that cell right-c	lick inside any cell to	see additional row o	ptions			
ght click inside	e any <i>column header</i> to ac	id or delete columns (if appropriate), and pr	ress the SAVE or Ca	ncel buttons (above)	when changes are co	omplete.	
Stations (v	ersion: X4.4)							
(-								
Wīdth:	Height:	Font Size:	Update Interval:	Destination Side:	Connection Type:	Touch Type:	STUDIO BREAK:	
120	28	12	2000	RIGHT	SHARE	VIEW	SHOW	
· · ·								
Source Catego	ny: Source Category:	Source Category:	Source Category:	Source Category:	Source Category:	Source Category:		
ALL	1-5	1357						
Destination C:	atego Destination Catego	Destination Catego	Destination Catego	Destination Catego	Destination Catego	Destination Catego	2	
	1-5	1357	Descination Catego	Destination catego	Destination catego	Destimation catego	2	
	1,5	1557						
Source Name:	Router Name:	L1:	L2:	L3:	Category:	Category:	Category:	Color:
Src 1	A	UR-001	UT-001		ALL	1-5	1357	fuchsia
Src 2	A	UR-002	UT-002		ALL	1-5		lime
Src 3	A	UR-003	UT-003		ALL	1-5	1357	blue
Src 4	A	UR-004	UT-004		ALL	1-5		red
Src 5	Α	UR-005	UT-005		ALL	1-5	1357	purple
Src 6	A	UR-006	UT-006		ALL			orange
Src 7	A	UR-007	UT-007		ALL		1357	yellow
Src 8	A	UR-008	UT-008		ALL			green
Src 9	A	UR-009	UT-009		ALL			navy
Src 10	A	UR-010	UT-010		ALL			aqua
Src 11	A	UR-011	UT-011		ALL			fuchsia
Src 12	A	UR-012	UT-012		ALL			lime
Src 13	A	UR-013	UT-013		ALL			blue

GROUPS Page

NOTE: Sometimes it is important to restrict access to assets and control pages. Thinklogical's X4 supports this requirement through the use of user groups, or just groups.

Use the browser's back button (or one of the tabs you've opened for easy access to different pages) to get back to a page with links across the top and select the *GROUPS* link.

think	logical	X4Configu	rator	CON	NECT	ADMIN	MACROS	STUDIO	COMBI	GROUPS	LOGOUT
											Help
Groups/l	Jsers Admini	stration									
						C	Import	Export		SAVE	Cancel
Click inside any right-click inside Logins Require yes # Group defin	cell to change the cont any column header to d: Default Croup: admin itions	tents of that cell, <i>right-c</i> add or delete columns Restore on Restart no	: <i>lick</i> inside any c (if appropriate), a	ell to see additional row and press the SAVE or 0	options, Cancel b	uttons (abo	ve) when chan	ges are com	plete.		
Group Name:	Startpage:	Page:	Page:	Page:	Page	2	Page:	1	Page:	Page:	
admin	connect	admin	macros	studio	com	bi	groups				U
user	studio	combi	macros	touchscreen							
toucn	compi-m	macros									
# User definit	ions										
Username:	Group:	Local Password:									
admin	admin	admin									
user	user	user									
# Groups ass	igned by IP addres	s (touchpanels)									
IP Address:	Group:	Comment:									
192.168.13.11	2 touch	104 (104 (104 (104 (104 (104 (104 (104 (

This page defines users, groups and the access granted to them. There are four tables on this page which will be indexed by the leftmost header for each table.

Logins Required -- If this value is set to *yes*, then every user must enter a username and password in order to access X4. If this value is set to *no*, then users need not log in and they will all be assigned to a group named in the next field, the *Default Group*.

Restore on Restart -- If this is set to *yes*, then when X4 is started it will automatically set the router(s) to the last set of connections present when X4 was last running. (See ADMIN: **Snapshots** for more information.)

The next table is labeled *Group Definitions* and each row starts with a *Group Name*. This table determines which pages are available to each group. The *Startpage* will be presented when the user logs in. The remaining fields are all labeled *Page* and they are the links found at the top of the page that will be available to the group. As shown above, the admin group will have links to the *Connect, Admin, Macros, Studio, Combi*, and *Groups* pages.

To add, change or delete page permissions to a group, click on any of the existing page fields or a blank one.

Logins Required:	Default Group:	Restore on Restar	C					
yes	admin	no						
# Group definition	ons							
Group Name:	Startpage:	Page:	Page:	Page:	Page:	Page:	Page:	Page:
admin	connect	admin	macros	studio	combi	groups		
user	studio	combi	macros	touchscreen				
touch	combi-m	macros				Reades		
# User definitior	าร	18	_			connect		
Username:	Group:	Local Password:				admin		
admin	admin	admin				studio		
user	user	user				combi		
# Groups assigr	ned by IP address	(touchpanels)				combi-m groups		
IP Address:	Group:	Comment:				(blank)		
102 168 7 112	touch							

The "Pages" pop-up provides a list of page choices or blank if the page is to be removed from this group.

The next table is for *User Definitions* and starts with the username. This is the name the user/operator will use when logging in. The next field is *Group* and shows to which user group the user/operator will be assigned after logging. The final field is the *Local Password* for that user. This field will let you change passwords for any account, including admin.

The last table is labeled *#Groups assigned by IP address (Touchpanels)*. This table is used most often for touchpanels where typing in a username and password may be difficult. Any communications coming from these addresses will be treated as though received from a logged-in user of the group name shown.

For example, if a touchpanel is connected to the network at IP address 192.168.13.112, that device is automatically assigned to the group "touch," which will only be able to see the startpage, combi-m and macro page.

So far, we have only demonstrated restricted access to page links, but it is possible to restrict access to macros and source and destination assets as well. For instance, we have declared a user named *user* with password *user* and group name *user*. As this page shows, this user will only have access to the *Studio*, *Combi*, *Macros*, and touchpanel pages.

Click the *LOGOUT* link (top right) and log in as *user* with password *user*.

Since our startpage is Studio, we are immediately taken to the **STUDIO** page, but there are no sources or destinations shown. (We'll fix that in a minute.)

Destination Calegories (page 0 of 0)		Det < > < >	sr < > < >	Source Categories (page 0 of 0)
Destination Entries		Det Pages	Src Pages	Source Entries
Sequences				thinklogical
Actions DESTINATION: TAKE	Loca		LOCK	

Unfortunately, since we've assigned *user* to start out in the **STUDIO** page, there are no page links at the top, but there's an easy solution. In the URL at the top of the page, change *studio* to another page that this user is allowed, like *combi*.

				~ •
SOURCES				
				< >
				< >
DESTINATIONS			_	K
DESTINATIONS				X X
DESTINATIONS				× ×
DESTINATIONS				

Again, the page has loaded, but there are no assets visible (soon to be corrected).

For a test, enter a page that this user is not allowed, such as admin.



This demonstrates that the user will be restricted to only the pages they are allowed.

Use the LOGIN link at the bottom of this warning to again login as *admin*, password: *admin* (unless you've changed the password). Select the *ADMIN* link at the top and then select the **Stations** tab.

thinkl Extend - Distribute - Innov	ogical	<mark>X4</mark> Configu	rator			CONNECT	ADMIN MACRO	S STUDIO CO	MBI GROUPS	S LOGOUT
Administr	ation							Select from	the tabbed cho	ices above
Click inside any ce right-click inside an	Il to change the conter by column header to ac	nts of that cell, <i>right-</i> d dd or delete columns	click inside any cell tr (if appropriate), and p	o see additional row o press the SAVE or Ca	ptions, In cel buttons (above) when changes are o	Import complete.	Export	SAVE	Cancel
# Stations (vers	ion: X4.4)									
Width: 120	Height: 28	Font Size: 12	Update Interval: 2000	Destination Side: RIGHT	Connection Type: SHARE	Touch Type: VIEW	STUDIO BREAK: SHOW			
Source Category: ALL	Source Category: 1–5	Source Category: 1357	Source Category:	Source Category:	Source Category:	Source Category:				
Destination Categ	Destination Catego 1-5	Destination Catego	Destination Catego	o Destination Catego	o Destination Categ	o Destination Categ	go.			
Source Name:	Router Name:	L1:	12:	L3:	Category:	Category:	Category:	Color:	Color:	
Src 1 Src 2 Src 3 Src 4 Src 5 Src 6 Src 7	A A A A A A	UR-001 UR-002 UR-003 UR-004 UR-005 UR-006 UR-007	UT-001 UT-002 UT-003 UT-004 UT-005 UT-006 UT-007		ALL ALL ALL ALL ALL ALL ALL ALL	1-5 1-5 1-5 1-5 1-5	1357 1357 1357 1357	fuchsia lime blue red purple orange vellow		
Src 8 Src 9	A	UR-008 UR-009	UT-008 UT-009		ALL			green navy		

As done before, right click on the rightmost *Category:* header and select Append. A new *Category:* column will appear. Now left click on the *Category:* header at the top of this new column and a pop-up list of stations labels will appear.

Width:	Height:	Font Size:	Update Interval:	Destination Side:	Connection Type:	Touch Type:	STUDIO BREAK:	ľ	
120	28	12	2000	RIGHT	SHARE	VIEW	SHOW		
Source Category:									
ALL	1-5	1357							
17.1126/Berg									
Destination Catego									
ALL	1-5	1357							
Internation of									
Source Name:	Router Name:	L1:	L2:	L3:	Category:	Category:	Category:	Category:	Color:
Src 1	A	UR-001	UT-001		ALL	1-5	1357		Station Labels
Src 2	A	UR-002	UT-002		ALL	1-5			Deuter Nemer
Src 3	A	UR-003	UT-003		ALL	1-5	1357		Router Name:
Src 4	A	UR-004	UT-004		ALL	1-5			12:
Src 5	A	UR-005	UT-005		ALL	1-5	1357		L3:
Src 6	A	UR-006	UT-006		ALL				L4:
Src 7	A	UR-007	UT-007		ALL		1357		L5:
Src 8	A	UR-008	UT-008		ALL				Category:
Src 9	A	UR-009	UT-009		ALL				Color:
Src 10	A	UR-010	UT-010		ALL				Viewable:
Src 11	A	UR-011	UT-011		ALL				Takeable:
Src 12	A	UR-012	UT-012		ALL				mne
Src 13	A	UR-013	UT-013		ALL				blue
Src 14	A	UR-014	UT-014		ALL				red
Src 15	Α	UR-015	UT-015		ALL				purple
Src 16	A	UR-016	UT-016		ALL				orange

Click the bottom choice, "Takeable:". The new column header, which used to read *Category*:, will now be *Takeable*:.

Source Name:	Router Name:	L1:	L2:	L3:	Category:	Category:	Category:	Takeable:	Color:
Src 1	A	UR-001	UT-001		ALL	1-5	1357		fuchsia
Src 2	A	UR-002	UT-002		ALL	1-5			lime
Src 3	A	UR-003	UT-003		ALL	1-5	1357		blue
Src 4	A	UR-004	UT-004		ALL	1-5			red
Src 5	A	UR-005	UT-005		ALL	1-5	1357		purple
Src 6	A	UR-006	UT-006		ALL				orange
Src 7	A	UR-007	UT-007		ALL		1357		yellow
Src 8	A	UR-008	UT-008		ALL				green
Src 9	A	UR-009	UT-009		ALL				navy
Src 10	A	UR-010	UT-010		ALL				aqua

Now add the group name "user" to a few of the source rows as shown below:

Source Name:	Router Name:	L1:	L2:	L3:	Category:	Category:	Category:	Takeable:	Color:
Src 1	A	UR-001	UT-001		ALL	1-5	1357	user	fuchsia
Src 2	A	UR-002	UT-002		ALL	1-5		user	lime
Src 3	A	UR-003	UT-003		ALL	1-5	1357	user	blue
Src 4	A	UR-004	UT-004		ALL	1-5		user	red
Src 5	A	UR-005	UT-005		ALL	1-5	1357		purple
Src 6	A	UR-006	UT-006		ALL				orange
Src 7	A	UR-007	UT-007		ALL		1357		yellow
Src 8	A	UR-008	UT-008		ALL				green
Src 9	A	UR-009	UT-009		ALL				navy
Src 10	A	UR-010	UT-010		ALL				aqua

Scroll down to the bottom and do the same thing for some destinations: Right click the right-most *Category:* header, select Append. Left click on the new *Category:* header, select *Takeable:* and enter "user" into some destination rows.

think	logical	X4Confi	gurator		CONNECT	ADMIN	MACROS	STUDIO CO	ombi group	s Log	OUT	
Extend • Distribute • Inn	ovate					Macros St	ations	Routers	Snapshots	Tie Lines	Log H	lelp
Administ	ration								Select from	n the tabbed ch	oices above	
							Im	port	Export	SAVE	Canc	el
Src 37	A	UR-037	UT-037		ALL					yellow		0
Src 38	A	UR-038	UT-038		ALL					green		
Src 39	A	UR-039	UT-039		ALL					navy		
Src 40	A	UR-040	UT-040		ALL					aqua		L
Destination Nar	ne: Router Name:	L1:	L2:	L3:	Category:	Category:	Cate	gory:	Takeable:			L
Dst 1	Α	UT-041	UR-041		ALL	1-5	135	7				
Dst 2	А	UT-042	UR-042		ALL	1-5						
Dst 3	A	UT-043	UR-043		ALL	1-5	135	7				
Dst 4	A	UT-044	UR-044		ALL	1-5						
Dst 5	A	UT-045	UR-045		ALL	1-5	135	7	user			
Dst 6	A	UT-046	UR-046		ALL				user			
Dst 7	A	UT-047	UR-047		ALL		135	7	user			
Dst 8	A	UT-048	UR-048		ALL							

Now click the **SAVE** button

NOTE: This might be a good time to make use of a second browser. It cannot be just another window for the same browser because the browser cookie that makes you admin will carry over to the other windows. But if you've been using Google Chrome so far and you have Firefox or Internet Explorer available, it would be convenient to login on a different browser as "user". If another browser is not available, you'll just need to log in and out more often.

To see the changes you've made, you'll need to log out of *admin* and log back in as *user*, because as long as you're logged in as *admin*, you'll never see the restricted choices you're creating for *user*.

00	Welcome!	
Welcome!	+	
localhost:8080	tî ▼ 0	🗄 🚱 🕶 Google 🔍 🍙 💽 🔹
	thinklogica	7 tm
	Extend + Distribute + Innovate	4
	Please log in	
		1
	USERNAME user	
	PASSWORD ••••	
	*	

Hit submit and you will go directly to the **STUDIO** page and display the source and destination stations that you've made *Takeable*:.

Destination Categories (page 1 of 1) ALL 1-5 1 3 5 7 Destination Entring (page 1 of 1)	Dst < > I< > Dut Baser	Src >>	Source Categories (page 1 of 1) ALL 1-5 1 3 5 7 Source Entrine (name 1 of 1)
Destination Entries (page 1 or 1) Src 1 Dst 5 Dst 6	LY V	Site Pages	Source Entres (page 1 or 1) Src 1 Src 2 Src 3 Src 4
Sequences			thinklogical
	LOCK	UNLOCK	BREAK (VIEW) SHARE LOG IN

NOTE: *Takeable:* does not mean that only the TAKE button applies. The stations you've made Takeable: are also viewable and shareable. When used in the context of Group permissions, it just means that they are available to this user group.

Setting the URL to Combi wil	now show the same stations	as found in the STUDIO page.
------------------------------	----------------------------	-------------------------------------

0 0 1 cor	ИВІ	+		COMBI	_	_	_	
Ocalhost:80	180/combi	<u></u>		Ŷ	🔻 🔿 🚱 🕶 Goo	gle		
SOURCES								
ALL	1-5 1 3	57						
Src 1	Src 2	Src 3	Src 4					
Dst 6*, Dst 3								
DESTINATIONS								
ALL	1-5 1 3	57						
	Src 1*							
Dst 5	Dst 6	Dst 7						
think	logica	2.	Т	SHARE	VIEW	BREAK	LOCK	UNLOCK

Appendixes

File Locations

On a Windows computer, the program files can typically be found in:

64 bit Windows 7: C:\Program Files (x86)\LSI\X44\

32 bit Windows 7 and XP The configuration files are in:

> Windows 7: Windows XP: Data\LSI\X44\setup\

C:\Program Files\LSI\X44\ C:\Program Data\LSI\X44\setup\

C:\Documents and Settings\All Users\Application

On a **Linux** computer, the program and data files are found in: /opt/lsi/vxrouter/intuicon/X44/

Other Documentation

These documents are available on our web and ftp sites and provide additional helpful information.

- Manual_Customer_Overview_VXRouters_Rev_B.pdf
- Manual_MX48_Rev_B.pdf
- VX40_160_320_320V_Manual_Rev_J.pdf
- Manual_VX640_Rev_B.pdf
- Router-ASCII-API.pdf
- Configuring-the-ASCII-Interface.pdf
- Router_SNMP_Traps.pdf
- Router_Interfaces.pdf

The letter after '_Rev_' may differ from this list. As the manuals are updated, the next letter is sequence

How to Contact Us Customer Support

Thinklogical is an engineering company and you will receive the assistance you require directly from our most knowledgeable engineers. We believe that the first line of support is the design engineer that developed each particular product. Therefore your needs will be handled promptly by our in-house engineers who are most familiar with your products.

Thank you for choosing Thinklogical® products for your application.

We appreciate your business and are dedicated to helping you successfully use our products.

thinklogical. is always here to help you.

To contact us, please use the following telephone numbers and internet-based methods:

Website

Check out our website for firmware updates, support information and general information about all of the products we offer.

Our internet website offers product information on all current systems, including technical specification sheets and installation guides (for viewing online or for download), product diagrams showing physical connections and other information you might need.

Internet: www.thinklogical.com

<u>Note</u>: Most online documents are stored as Adobe Acrobat "PDF" files. If you do not have the Adobe Acrobat reader needed to view PDF files, visit www.adobe.com for a download.

Email

Thinklogical is staffed **Monday through Friday from 8:30am to 5:00pm**, Eastern Time Zone. We will do our best to respond to your emails promptly. Please use one of the following email addresses for your particular needs:

info@thinklogical.com – Information on Thinklogical and our products.

sales@thinklogical.com - Sales Department - orders, questions or issues.

support@thinklogical.com – Product support, technical issues or questions, product repairs and request for Return Authorization.

Telephone

Telephone Sales: Contact our expert sales staff in Milford, CT at **1-203-647-8700** or if in the continental USA, you may use our **toll-free number 1-800-291-3211**. We are here Monday through Friday from 8:30am to 5:00pm, Eastern Time Zone. Ask for your representative's direct dial phone number when you call.

Telephone Product Support: Contact Product Support in Milford, CT at **1-203-647-8700**. The support lines are manned Monday through Friday, 8:30am to 5:00pm, Eastern Time Zone.

International Sales: Please contact our US sales staff in Milford, CT at **1-203-647-8700**. We are here Monday through Friday, 8:30am to 5:00pm, Eastern Time Zone (same as New York City). If leaving a voice message please let us know the best time to return your call so we may reach you at your convenience.

Our switchboard attendant will direct your call during regular business hours. We have an automated attendant answering our main telephone switchboard after regular business hours and holidays. You can leave a voice message for an individual at any time. Our Sales Representatives have direct numbers to speed up your next call to us.

Fax

Our company facsimile number is **1-203-783-9949**. Please indicate the nature of the fax on your cover sheet and provide return contact information.

Product Support

Thinklogical's support personnel are available **Monday through Friday from 8:30am to 5:00pm**, Eastern Time Zone. If your application requires assistance at some time outside of our normal business hours, please contact us beforehand and we will do our best to make arrangements to help you with your Thinklogical products.

Limited Warranty Information

Thinklogical, LLC ("Thinklogical") warrants this product against defects in materials and workmanship for a period of one (1) year from the date of delivery (ordinary wear and tear excluded). This limited warranty does not cover defects resulting from (i) use of the product other than as described in the applicable documentation for the product; (ii) modifications to or repairs of the product that are made by any party other than Thinklogical or a party acting on Thinklogical's behalf, or (iii) combination of the product with third party products that is not consented to by Thinklogical. Occurrences of events described in (i) – (iii) shall void the foregoing warranty. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Except for the express warranty set forth above, to the fullest extent permitted under applicable law, Thinklogical, LLC and its suppliers disclaim any and all other warranties, express and implied, including without limitation the implied warranties of merchantability, fitness for a particular purpose, title and non-infringement.

If the defective product is returned to the authorized dealer within one (1) year of the delivery date, repair or replacement of the product will be made. Repairs may be made with refurbished parts. If repair or replacement is not possible, Thinklogical may keep the defective product and refund the amount that you paid for the defective product. These are Thinklogical's sole obligations, and your exclusive remedies, for a breach of the limited warranty set forth above.

To return a defective product, contact the Thinklogical authorized dealer from whom you purchased the product. Do not return a product directly to Thinklogical without prior authorization from your dealer.

If you have received prior authorization from your dealer and are returning a product directly to Thinklogical:

- 1. You may contact your *Sales Representative* directly or call *Customer Support* at 1-203-647-8700 or 1-800-291-3211 (toll free).
- 2. Describe the defect with the product and Customer Support will issue a Return Merchandise Authorization Number (RMA#).
- 3. Pack the product in all of its original packing, if possible, and write the RMA number on the box.

4. Return the product to:

Thinklogical, LLC Attn: RMA# [Insert the RMA# issued to you, by Thinklogical, here.] 100 Washington Street Milford, CT 06460 USA

Our Address

If you have any issue with a product, have product questions or need technical assistance with your Thinklogical system, please call us at **1-800-291-3211 (USA only)** or **1-203-647-8700** and let us help. If you'd like to write us, our mailing address is:

Thinklogical® LLC 100 Washington Street Milford, CT 06460 USA