

FORETHOUGHT.NET

TRAINING GUIDE

This guide will show you how to troubleshoot three types of connections using just the CMS system. You will not need to know any advanced commands.

To begin, **if it is a business connection we do not have the customer power cycle our equipment unless it is a last resort and all steps have been completed.** With residential connections power cycling the modem is fine but please do not power cycle business customers' connections especially SHDSL and T'1s. If the equipment is power cycled we lose stats that assist in adjusting SNR values and will take longer to get the customer back up.

1. Overview of Forethought.net Intranet (3)
2. CMS (4)
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6. ETHX/ SHDSL Zhone Login (19)
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8. Glossary of terms (26)

Forethought.net CMS

TRAINING GUIDE

1: To reach the new CMS (customer management system) please visit **my.forethought.net/intranet-dev**

back=https%3a%2f%2fmy.forethought.net%2fintranet-dev

Support | Email | FTWiki | JFFnms | OpenSRS | Zimbra | Intranet | Neustar | Wilma | Intranet | Q Host | CloudFone | Plat | BSI Techs | PwrAdm

my.FORETHOUGHT.net Login

FORETHOUGHT.net

Username: (user@corp.forethought.net)

Password:

Submit Query

Your username and password are the very same as your active directory login info. If you do not know your log in information please immediately contact one of the following in this order Grey Howe, Patricia Kelly at extension 823, or Jason Grubb at extension 851 so that we can get this information to you as soon as possible. Grey can sometimes be difficult to get a hold of and if you have any issues please contact Patricia ASAP so that way she can get you straightened out.

EMERGENCY CONTACT INFORMATION

Grey Howe: helpdesk@forethought.net

Patricia Kelly: office: 1-815-1823 / ext 823

Cell: 720-235-6075

Jason Grubb: office: 303-815-1851 / ext 851

Cell: 970-317-4812

If you have any troubles or need an answer to a question please do not hesitate to call even on the weekends. We may be short on time but will do our best to get to you as best as we can.

INTERFACE OPTIONS

Customers	
CMS - Customer Mgmt System	
Support Tickets	
Ticket Reports	
Support Log Report	
Mass Mail	
Accounting	
Accounting	
Receivables Reports	
Accounting Reports	
Collections Report by AM	
Journal Entry for Accountant	
Reports	
Sales Reports	
Various Reports	
E-Mail	
PerfectMail Account Tool	
Zimbra Management	
Service Qualification	
MACH DSL/Red Zone Loop Qualification Tool	
DNS / Domain Names	
DNS Tool (legacy FTN)	
PowerAdmin DNS Tool	
OpenSRS Domain Renewal Tool	
Bulk Domain Register/Transfer Price Calculator	
OpenSRS Reseller	
Circuits / CFA	
CFA Finder	
Search Circuit Database	
IP Addresses	
IP Database	
Search IP Database by Address	
Subnet Calculator	
Dialup/DSL RADIUS	
RADIUS / Dialup Account Tool	
Workflow	
Workflow	
LSR Tracker	
Resources	
Intranet Wiki	
Staff Directory	
PhpMyAdmin	
DMCA Tool	
Monitoring	
JFFnms	
Argus	
Nagios	
Telephone Tools	
E911 Location Verification Tool	
E911 Bad TNs Tool	

The **CMS option** will take you to the most important part of the this DOC. Until you know how to read the information here you will be unable to run commands in CLI.

The **support ticket section** takes you to view all the support tickets currently opened for Forethought customers. You will need to watch this queue because the Forethought customers differ from Brainstorm's largely by the way they report trouble. Most of Forethought's business customers will turn in a ticket instead of calling and mostly respond to their request via the support queue. Another good hint is that if you are talking to a business customer it will 7 times out of 10 be a tech which negates your need to repeat yourself. When it is a residential customer, you are not expected to go as far as Brainstorm. Yes we assist with email but not their wifi and mostly the residential customers know this and won't call about their routers.

The **Perfectmail tool** will take you to our email portal that will give you the password to any email address on Forethought's system.

OpenSRS Domain Renewal Tool will take you to an easy to use interface that will let you renew any domain name. Here you will want to remember that we charge the very same amount for renewals as Brainstorm.

The **circuit database** will allow you to look up most of the information you will need about any DSL connection. Here you will be able to see which bridge group a customer is on and if they are using DHCP or PPPoE

The **WIKI** is the second most important part and holds more information than you think. Accessing this information or better knowing how to search keywords here while difficult can give you the knowledge to do ANY POSITION at Forethought. This can be difficult to understand however it is a very powerful tool you will be expected to learn to navigate.

CMS

Like I explained, without knowing how to read this, you won't be able to run commands in any part of the system. The CMS portal tells you a customer's PPPoE username and password, the slot number, and even the port number. CMS also tells what equipment a customer is connected to and if they are on hold for failure to pay.

foreThought.net Customer Management System (Contact List)

Sort by: ☐ Name ☐ Company
Confidential and Proprietary

Display All
Create New

QuickSearch: Go
Advanced Search Records

There were 1228 matches.

Aaland, Shelly, 823538
Shelly Aaland

Abbott, Attn: Hillary, 806738
Angelhaus Condominiums

Abbott, Cody, 829959
Cody Abbott

Aber, Nancy, 825590
Nancy Aber

Abercrombie, David, 815274
David Abercrombie

Abernathy, Crystal and Jason, 828876
Crystal/Jason Abernathy

Abney, William, 127050
Abrell, Heather, 830778
Heather Abrell

Abshagen, William, 801199
Ore House

Account, Brainstorm Support, 811818
Brainstorm Internet Support Account

Account, Will Lacey Office, 806835
Will Lacey Office Acct/San Juan Smiles

Account, Prospects, 123002
FORETHOUGHT.net

Accounting, 816599
[T] - Durango Narrow Gauge Railroad

Ackerman, Margaret, 821629
Margaret Ackerman

ADAIR, LISA, 827766
ENGINEER MOUNTAIN INC

Adamian, Piper, 829928
Piper Adamian

Adams, Carol, 125219 Principal
StudioTerra

Adams, Bonnie and Merrill, 803219

It's important to always remember why we're in business:

(one of 15 customer comments...)

he and Larry stayed until about 6:30 or so and got my service set up and operational. It's this kind of service that I find wonderful and meaningful and I just wanted to pass along a BIG! thank you to them in particular and the forethought company in general.

[Linda Lowe](#)
LoweBell Technologies, Inc.

Just like with plat you have to type names specifically in order to find a customer. Most times the telephone number will not work and the address does not work either. It's best to type just part of the customer's business name and a **hint** the names are stored last then first so typing in the last name will allow you to find the customer faster.

For this doc we are going to use the Business customer
Residential customer

Examples

For Dermatology Specialist of Boulder you won't want to use their full name instead;

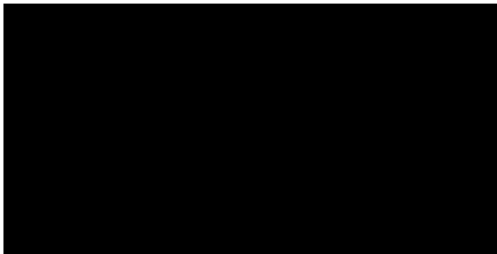
QuickSearch: Go
Advanced Search Records

For of Boulder you would want to just type **specialist**.

When a residential customer has a unique first name like **Tarl** then use the first name

QuickSearch: Go
Advanced Search Records

Dermatology Specialist of Boulder:
There were 3 matches.



For [REDACTED] You will get three results and in order to find out which one to open you will need to know the address of the location they are having issues at, open each account and make sure the circuit address on the account matches the location where there is issues.

Opening the account:

To open the account simple click on the red name [REDACTED] located to the left of the business name to view;

There were 3 matches.

Account #: 127324

View Statement

Submit Invoice

Enter Commission Claim

Open Support Issue

Create Ticket

Open Tickets

All Tickets

Extranet

PHONE:

FAX:

CELL PHONE:

HOME PHONE:

EMERGENCY:

Account Status	Active	Customer Type	Business
Account Manager	vsturm	Billing Status	Normal
Referred By	RMTT	Credit Card Payment?	Y
Payment Status	\$ / Current	Credit Terms	30
Contract Received?	y	Anniv Dt:	2012-12-11
Bill Cycle Date	2016-02-01	Commission Agent:	RMTT

Edit Entry

Delete Entry

Dashboard

Notes

Contacts

Orders

Domains

IP Addresses

Dyn Addresses

Circuits & Ports

VLAN Assignments

Phone Numbers

Voicemail

Conference Rooms

Supportlog

Equipment

Open All

Close All

2 NOTES

HINT is to click the OPEN ALL option to view all the information stored on the account and using it will make sure that you don't choose the wrong option. When you click on the OPEN ALL you're given everything.

Account #: 127324 PIN: 214081

[View Statement](#)
[Submit Invoice](#)
[Enter Commission Claim](#)

[Open Support Issue](#) 1

[Create Ticket](#)
[Open Tickets](#)
[All Tickets](#)

[Extranet](#)

Main Contact: [map](#) [verify](#)

Bill

PHONE:

FAX:

CELL PHONE:

HOME PHONE:

EMERGENCY:

Account Status	Active	Customer Type	Business
Account Manager	vsturm	Billing Status	Normal
Referred By	RMTT	Credit Card Payment?	Y
Payment Status	\$ / Current 2	Credit Terms	30
Contract Received?	Y	Anniv Dt:	2012-12-11
Bill Cycle Date	2016-02-01	Commission Agent:	RMTT

[Edit Entry](#) [Delete Entry](#)

Dashboard

[Notes](#) [Contacts](#) [Orders](#) [Domains](#) [IP Addresses](#) [Dyn Addresses](#) [Circuits & Ports](#) [VLAN Assignments](#) [Phone Numbers](#) [Voicemail](#) [Conference Rooms](#) [Supportlog](#) [Equipment](#) [Open All](#) [Close All](#)

NOTES

NO CHANGES TO THEIR THIRDLANE UNLESS JASON GRUBB IS CONTACTED BY SUZI CARLSON

3

5M Hosted PPBX 1 Analog

12/5/2014 - Technical contact is Eric LaRochele at Computer Concepts Inc.

1: When you take a call from a customer its best to immediately click **create ticket** and begin a ticket and please include as much data as possible.

If a customer wants to pay their bill click on **extranet** to log into their account and use the **one-time payment** option and enter the information.

To view all of a customer's previous issues click the **all tickets** option and use the **open tickets** option to view any open ticket the customer may have.

2: In the number two box you will see how much money they owe in the **Payment Status** option.

3: The third box contains the **notes** for the account. If the account has been turned off, the account does not turn grey or red. The only way you know if the customer is deactivated is there will be a note here saying "on hold failure to pay" or something like it. This section may also contain other important information like **management IP** addresses. With that one IP you can log into their equipment to see errors, port stats, and many other pieces of vital information that will enable you to troubleshoot issues better. It also could contain information about customers' connections and how to troubleshoot them.

As a note, if the T1/DS1 shows down call CenturyLink right away. There aren't any adjustments or testing we can do and we need CenturyLink on top of the issue ASAP. Unlike with Brainstorm most times CenturyLink has 4 hours to respond and fix our tickets, getting them out quickly is vital to restore the customer's connection. Before calling all you need to verify is the power and connections to the equipment. Once verified call **1-877-220-4021 option**

3. When you call you will need to have a ticket on our side, they will give you their ticket number please note it on the account and also CenturyLink will ask you for the circuit ID and equipment which is found on the CMS.

Circuit ID

Equipment ID

CircuitID	DSLAM	Port	Svc Type	Ckt Type	CFA / Z-loc
29.HCFD.110159	BRFDCOMA-MXK-01	17/22	ZhoneEFMDS1	DS1	ED007 24-WL 00022 BRFDCOMA BRFDCOMAHG7 36 S 18TH AVE, BRIGHTON, CO, BRFDCOMAHG7
29.HCFU.110158	BRFDCOMA-MXK-01	17/20	ZhoneEFMDS1	DS1	ED007 24-WL 00020 BRFDCOMA BRFDCOMAHG7 10359 FEDERAL BLVD, WESTMINSTER, CO, BRFDCOMAHG7
29.LXFU.619505	BLDRCOMA-MALC-01	15/23	SHDSL	DS0	EDT03 24-WL 00223 BLDRCOMA BLDRCOMAHG3 2880 FOLSOM ST, BOULDER, CO, BLDRCOMAHG3
29.LXFU.619506	BLDRCOMA-MALC-01	15/24	SHDSL	DS0	EDT03 24-WL 00224 BLDRCOMA BLDRCOMAHG3 2880 FOLSOM ST, BOULDER, CO, BLDRCOMAHG3
29.LXFU.619507	BLDRCOMA-MALC-01	13/6	SHDSL	DS0	EDT03 24-WL 00354 BLDRCOMA BLDRCOMAHG3 2880 FOLSOM ST, BOULDER, CO, BLDRCOMAHG3
29.LXFU.619508	BLDRCOMA-MALC-01	13/7	SHDSL	DS0	EDT03 24-WL 00355 BLDRCOMA BLDRCOMAHG3 2880 FOLSOM ST, BOULDER, CO, BLDRCOMAHG3
29.LXFU.620327	BLDRCOMA-MALC-01	3/5	ADSL2+	DS0	EDT03 24-WL 00005 BLDRCOMA BLDRCOMAHG3 2880 FOLSOM ST, BOULDER, CO, BLDRCOMAHG3
29.LXFU.644495	BLDRCOMA-MALC-01	5/8	ADSL2+	DS0	EDT03 24-WL 00056 BLDRCOMA BLDRCOMAHG3 2880 FOLSOM ST, BOULDER, CO, BLDRCOMAHG3
29.LXFU.644496	BLDRCOMA-MALC-01	5/9	ADSL2+	DS0	EDT03 24-WL 00057 BLDRCOMA BLDRCOMAHG3 2880 FOLSOM ST, BOULDER, CO, BLDRCOMAHG3
29.LXFU.644497	BLDRCOMA-MALC-01	5/10	ADSL2+	DS0	EDT03 24-WL 00058 BLDRCOMA BLDRCOMAHG3 2880 FOLSOM ST, BOULDER, CO, BLDRCOMAHG3

Lets go over the circuit section again.

Slot and port numbers first number is the slot
the second is the port
SS/PP

CircuitID	DSLAM	Port	Svc Type	Ckt Type	CFA / Z-loc
29.HCFD.110159	BRFDCOMA-MXK-01	17/22	ZhoneEFMDS1	DS1	ED007 24-WL 00022 BRFDCOMA BRFDCOMAHG7 36 S 18TH AVE, BRIGHTON, CO, BRFDCOMAHG7
29.HCFU.110158	BRFDCOMA-MXK-01	17/20	ZhoneEFMDS1	DS1	ED007 24-WL 00020 BRFDCOMA BRFDCOMAHG7 10359 FEDERAL BLVD, WESTMINSTER, CO, BRFDCOMAHG7
29.LXFU.619505	BLDRCOMA-MALC-01	15/23	SHDSL	DS0	EDT03 24-WL 00223 BLDRCOMA BLDRCOMAHG3 2880 FOLSOM ST, BOULDER, CO, BLDRCOMAHG3
29.LXFU.619506	BLDRCOMA-MALC-01	15/24	SHDSL	DS0	EDT03 24-WL 00224 BLDRCOMA BLDRCOMAHG3 2880 FOLSOM ST, BOULDER, CO, BLDRCOMAHG3
29.LXFU.619507	BLDRCOMA-MALC-01	13/6	SHDSL	DS0	EDT03 24-WL 00354 BLDRCOMA BLDRCOMAHG3 2880 FOLSOM ST, BOULDER, CO, BLDRCOMAHG3
29.LXFU.619508	BLDRCOMA-MALC-01	13/7	SHDSL	DS0	EDT03 24-WL 00355 BLDRCOMA BLDRCOMAHG3 2880 FOLSOM ST, BOULDER, CO, BLDRCOMAHG3
29.LXFU.620327	BLDRCOMA-MALC-01	3/5	ADSL2+	DS0	EDT03 24-WL 00005 BLDRCOMA BLDRCOMAHG3 2880 FOLSOM ST, BOULDER, CO, BLDRCOMAHG3
29.LXFU.644495	BLDRCOMA-MALC-01	5/8	ADSL2+	DS0	EDT03 24-WL 00056 BLDRCOMA BLDRCOMAHG3 2880 FOLSOM ST, BOULDER, CO, BLDRCOMAHG3
29.LXFU.644496	BLDRCOMA-MALC-01	5/9	ADSL2+	DS0	EDT03 24-WL 00057 BLDRCOMA BLDRCOMAHG3 2880 FOLSOM ST, BOULDER, CO, BLDRCOMAHG3
29.LXFU.644497	BLDRCOMA-MALC-01	5/10	ADSL2+	DS0	EDT03 24-WL 00058 BLDRCOMA BLDRCOMAHG3 2880 FOLSOM ST, BOULDER, CO, BLDRCOMAHG3

The circuit address or the address the circuit is delivered too.

Customers
CMS - Customer Mgmt System
Support Tickets
Ticket Reports
Support Log Report
Mass Mail
Accounting
Accounting
Receivables Reports
Accounting Reports
Collections Report by AM
Journal Entry for Accountant
Reports
Sales Reports
Various Reports
E-Mail
PerfectMail Account Tool
Zimbra Management
Service Qualification
MACH DSL/Red Zone Loop Qualification Tool
DNS / Domain Names
DNS Tool (legacy FTN)
PowerAdmin DNS Tool
OpenSRS Domain Renewal Tool
Bulk Domain Register/Transfer Price Calculator
OpenSRS Reseller
Circuits / CFA
CFA Finder
Search Circuit Database
IP Addresses
IP Database
Search IP Database by Address
Subnet Calculator
Dialup/DSL RADIUS
RADIUS / Dialup Account Tool
Workflow
Workflow
LSR Tracker
Resources
Intranet Wiki
Staff Directory
PhpMyAdmin
DMCA Tool
Monitoring
JFFnms
Argus
Nagios
Telephone Tools
E911 Location Verification Tool
E911 Bad TNs Tool

This is the beginning to WIKI. As previously stated this is a difficult and tricky information bank to access. You have to know what to type. For instance, in the Wiki all the managed CPE IP addresses are there but if you type in managed equipment or managed you will not find what you are looking for. To get to the managed IP addresses and to other information you will need to ask. Julie or Jason. They can give the proper term to search for but it will be up to you to take note and pass the information along.

When you click on the Wiki you will be taken to this page;

HomeWYSIWYG Edit

Forethought

Forethought Web

Home

Changes

Index

Search

Webs

Forethought Main

Sandbox

TWiki

Create personal sidebar

Edit Attach Printable

Welcome to the foreThought.net TWiki. This is a web-based collaboration area for ...

- Employee Information
 - Information for Employees
- Process and Procedure
 - Customer Customizations - custom stuff for certain customers
 - Technical Support Manual
 - Business Process Documentation
 - Procedure and Process Documentation
 - 111 Documentation
 - Basement Storage Locker Information
 - End User Documentation - Reference Manuals for End-Users
 - Bulk Mail
 - Credit Card Refunds
 - Fed Ex Account Info
 - Isymphony Account Information
 - Technical Support Contact Information
 - Comtrend Serial Port Modem Warranty Information and RMA Form
 - Conference Room With access instructions
 - FAQs
 - SigninSheet.aspx: Sign in Sheet for Front Desk
 - MALC Deployment Guide
 - QuestAPOT CLIs for Loop Ordering
 - Vendor Referrals - Authorized Referral Vendors
 - Office Infrastructure - information about our office systems
 - MtuBuildings - MTU Lit Building Information

DO NOT USE BROKEN

DO NOT USE BROKEN

USE THIS SEARCH BUTTON

HomeWYSIWYG Edit

Forethought

Forethought Web

Home

Changes

Index

Search

Webs

Forethought Main

Sandbox

TWiki

Create personal sidebar

Edit Attach Printable

Search

All public webs

Text body Topic title Both

Number of topics: 0

- Topic index: List of Forethought topics in alphabetical order.
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z I
All topics in BookView
- Jump to topic: If you already know the name of the topic, enter the name of the topic into the GoBox at the top
- WebChanges: Find out what topics in Forethought have changed recently

How to edit text:

- Make changes to topics in GoodStyle.
- Learn the TextFormattingRules, and
- Have a look at the TextFormattingFAQ

to top

Edit Attach image or document Printable version Raw text More topic actions

Revision: 1 (1.2) > (1.1) Total page history Backlinks

You are here: Forethought > ProcessProcedure > PerfectFameTITroubleshooting > WebSearch

to top

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Here you will need to be vague but still describing what you want. For instance, you can't search for managed IP addresses or managed equipment or even CPE. With using those terms you'll be searching for days and still not find the proper info.

To find the a list of the CPE's and to the MALC or MXKs you need to type in **pf_netblocks** or just **pf**. Best idea for seamless searching is type things like **ADSL, ADTRAN, ETC**

Forethought

Search [] All public webs [x] Topic [x] Advanced search [x]

* Text body * Topic title * Both

Results from Forethought web.

ANAC On South Atlantic To see what number you are calling from, you can call our air-switch ANAC number to hear the recording. This only works from air-switch numbers. Accounting Commissions -- Main, Specialized Bazar 17 Jun 2006 Adding A Commissionable Agent on shell2, the program /home/bazanydes/phonesession needs to be modified to include an entry for Admin Tools TODCONE "4" START INCLUDE Useful Administration Tools The entire forethought.net Internet is designed for efficient and easy access to almost all the tools needed ... Annual Report -- Main, Specialized On Jun 2006 Annual PUC Report Basic Instructions and MySQL queries Phone Line Income select sum(Gest Quantity) from Investment ... Annual Federal Report Totals of All calls: select substring(call date,1,4) as monthcall, callsum(call length)/60 as mpu from pbfcall catrecords where call date <= '2006-01-01' and call date >	19 Nov 2014 - 00:10 - NEW 17 Jun 2006 - 19:46 - NEW 29 Jul 2006 - 19:27 - r1.13 09 Jan 2007 - 20:12 - r1.2 18 Apr 2007 - 22:09 - NEW	Main.rvines Jawad@Bazayr Vanessa@loveliss Jawad@Bazayr Jawad@Bazayr
Billing Monthly Perfected Billing Process This process is to be executed on the first business day of every month (or other such day in management discretion is necessary to get ... Billing PerfectOne CO Network VLANs VLANs are used in Ethernet Networks. VLAN ID Anchor Subnet Description No MACs? 2 vlinks 132,160,224,253/24 Primary SRM/SOC/WRTA_Ocean/TMC Management 3 ethernet 42 Commomisses Common Support Issues Etherflow 5 Troubleshooting DSL Down or slow (Queue) DSL Down or slow (MAXN) Perfected One T-3 Troubleshooting "I can't get my email!" "I'm getting ... Configure CPE Configure CPE TOC SmartBuildings Tlars 230 (Fiber/Ethernet) Config Management VLAN Rols a plan from RF Netbooks Create the vlan and interface on etherman-40 etherman ... Configure Router Interconnect and interconnects Connect to router: (ip address) + telnet etherman-40 (password) etherman-40 an password: root netutil Get information from ... Current Packages Residential MACH Standalone For standard central office deployments Package DSL Speed Once Mach Standalone 1.5 35.00 Mach Standalone 3.0 35.00 Mach Standalone 6 ... Customer Custom Cloud Docs Individual client IP VLANs 1.3 214 intr-office PBX vlan Vlan 2 download to Address Box 127018 Associated Eye Care Services, 8102 E Lovers Blvd #110, Denver, CO 80260 Cut Over Replacement of the equipment for replacement of the existing equipment than old still keep the old MAC of the CPE, need to run a clear ip ar command ... DSL Modem Comparison Telephone: 202249720 Call 1 DIVISION Address : 2936 CALIFORNIA City : DENVER Fl : 6 2991 WELTON , , , NO PG , 244WG 1-200H 26AWG 5.050HF 24BT 0.310HF 24BT 0 ... Duct Internal Intranet Database Tables in Use by Internal Systems Accounts Receivable Deposit Bundles Invoice Represents an Invoice InvoiceItem Represents line item on invoice ... Employee forms -- Main, Damon Crawford 20 Jan 2006 Employee Forms as PDF's are available below to be printed out as needed. Engineering Documentation Engineering Documentation Documentation describing the engineering and construction of our products. Sometimes includes operational processes such as in the case ... Engineering Shared VLAN TOC Engineering S-VLAN/V-LAN Model Version 2.0 To provision services to a customer, both a SLAN and a VLAN are assigned. This is done by "double-tagging" Ethernet ... Engineering Summary Test Plan Router Configuration Test Plan TOC IP routing IP Routing Test IP routing capabilities carrying a full Internet routing table, OSPF / BGP Test BGP functionality / OSPF ... Engineering Projects -- Main, Specialized 15 Jan 2006 View Hitts Page List lists of information. TOC major company initiatives discussed 4/5/07 (beta/matt/kavin et al.) Monitoring	05 Oct 2013 - 17:29 - r1.20 02 Jul 2009 - 19:30 - r1.5 28 Jan 2016 - 16:46 - r1.153 23 Mar 2010 - 16:45 - r1.7 09 Dec 2013 - 21:12 - r1.54 12 Aug 2014 - 19:59 - r1.15 17 Apr 2007 - 23:02 - r1.3 04 Oct 2011 - 16:46 - r1.2 03 Sep 2014 - 22:32 - r1.6 03 Jan 2006 - 19:30 - r1.2 22 Aug 2008 - 23:04 - r1.2 10 Nov 2006 - 01:12 - r1.4 27 Aug 2015 - 21:15 - r1.131 29 Jul 2012 - 17:34 - r1.10 20 Nov 2007 - 19:32 - r1.3 10 Apr 2007 - 19:39 - r1.21	Main.bazaycorp.forethought.net Jawad@Bazayr Main.jbicorp.forethought.net JonPazo Main.jbicorp.forethought.net Main.jbi Jawad@Bazayr Main.jbi Jawad@Bazayr LarryCoulson Main.jbi Jawad@Bazayr Main.ashomo Main.jburnett

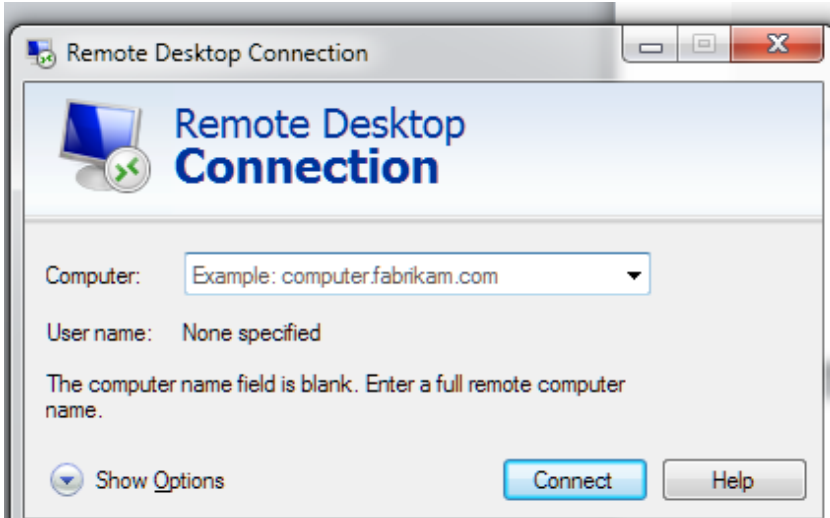
Once in the circuit inventory do a **ctrl + F** or **find** and **type the customer name** into the search field. Do not forget to **verify the address of the IP address**. **Hint: if you get the ip address listed in here to respond to a ping and can log into it, the customer IS NOT DOWN.**

10.40.5.130/28	3287	127313 Bradford Real Estate 2550 15th Street
10.40.5.144/28	3287	Adtran-608 10886
10.40.5.160/28	3288	127757 AUC, LLC. 1536 Cole Blvd
	10.40.5.162	TM-250
	10.40.5.163	10806 Adtran-616 00:A0:C8:12:F8:41
10.40.5.176/28	3289	127751 fresenius 723 Delaware St.
	10.40.5.178	TM-250 10770
10.40.5.192/28	3290	127770 Interior Resource
	10.40.5.194	Adtran 1234
10.40.5.208/28	3290	127810 Hall and Evans
	10.40.5.210	TM-250
10.40.5.224/28	3291	127821 Pershing Gold
	10.40.5.226	TM-250
10.40.5.240/28	3292	127781 Rocky Mtn Natural Meats
	10.40.5.242	AT-GS950
	10.40.5.243	Adtran 612 10031
10.40.6.0/28	3293	127819 Hampton Inn 3777 Main Ave. Durango
	10.40.6.2	TA-608 10339 00:0A:C8:26:E7:74
10.40.6.16/28	3294	127822 San Juan Citizens Durango
	10.40.6.18	TA-608 10133 00:0A:C8:0D:1D:B1
10.40.6.32/28	3295	127324 Dermatology Specialists Westminister
	10.40.6.34	Dlink-1234 Westminister
	10.40.6.35	Dlink-1234 Brighton
10.40.6.48/28	3296	127838 Pioneer Medical Center
	10.40.6.50	Adtran-908 10824
10.40.6.64/28	3297	127803 PDF Automotive
	10.40.6.66	Adtran-608 10824
10.40.6.80/28	3298	127843 Location 00:A0:C8:41:6C:EB
	10.40.6.82	Tmarc-250 10982 00:A0:12:CD:19:A0
	10.40.6.83	Adtran-916 11020
10.40.6.96/28	3299	xx Pioneer Hospital
10.40.6.112/28	3300	127846 SenterGoldfarb and Rice?
	10.40.6.114	Adtran-924 10824
10.40.6.128/28	3301	127379 Markusson Green and Jarvis
	10.40.6.130	TM-250 10980 00:A0:12:CD:12:00
10.40.6.144/28	3302	Fidelity 127845
	10.40.6.146	Adtan-616 10024 00:A0:12:CD:12:00
10.40.6.160/28	3303	Cultivate 6400 STAPLETON SOUTH
	10.40.6.162	Ip is not used, the VE is not correct. Adtan-908 11025 00:A0:C8:26:AF:2B
10.40.6.176/28	3304	Cultivate 666 E BUCHTEL BLVD
	10.40.6.178	Adtan-904 10959 00:A0:C8:70:19:B7
10.40.6.192/28		

NOTE a TMARC is fiber equipment **UNDER NO CIRCUMSTANCES ARE YOU TO REBOOT UNLESS SPECIFICALLY TOLD TO DO SO. YOU WILL NOT BE ABLE TO LOG INTO THIS EQUIPMENT BUT PINGING IT WORKS!**

Now there is two ways you can access the information, the first way is through your VDI. If you are havig issues with your VDI please contact Grey, the second way is through a remote desktop connection into the office server. Jawaid explained that he will be removing this server so for the time being, still try this way because it is the optimal way to view CPE's.

To add a remote desktop connection first find it in the all programs accessories remote desktop connection



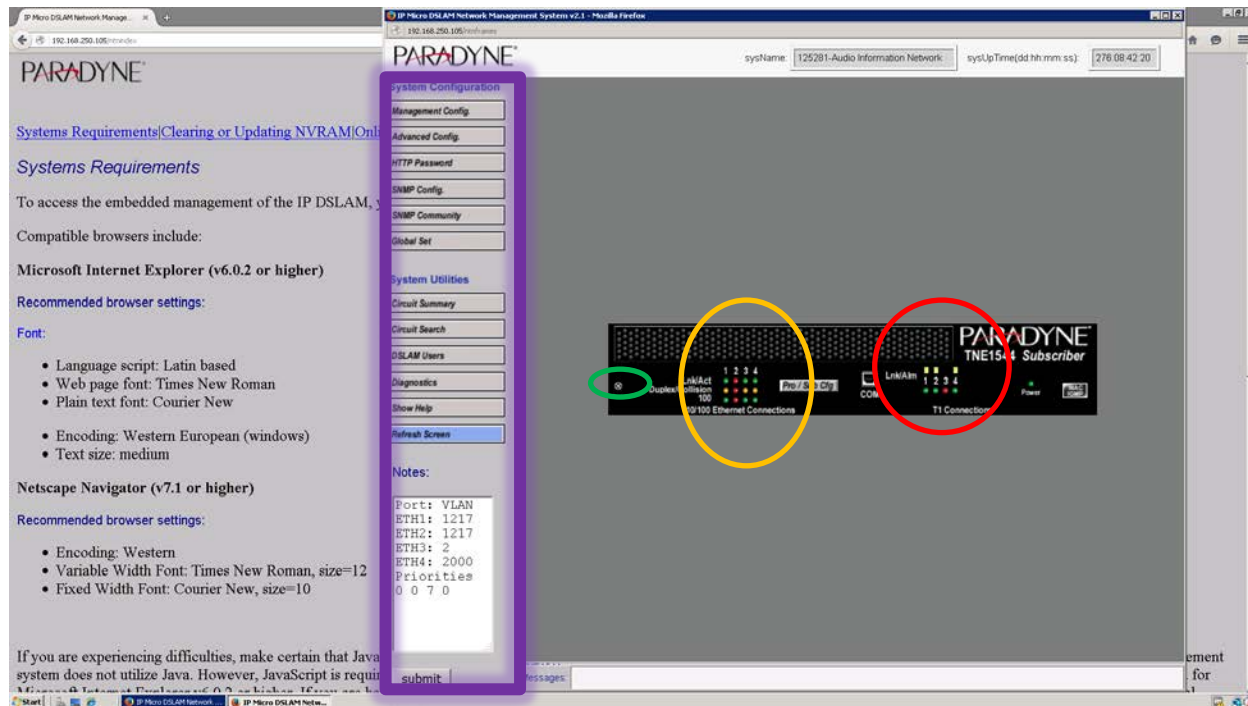
The Computer is **192.168.254.20**

Username and password should get set, for now call to Jason to have him create you an account.

Once in just open a browser and type the IP address to get to the equipment, **STOP YOU NEED TO CALL JASON GRUBB AT EXTENSION 851 OR 970-317-4812 TO GET THE LOG ON INFORMATION.**

After you have logged into the equipment and for all equipment if you are not sure then that's okay, don't click there and do not make any changes. This is the customer equipment and even a gentle change could take their phones down with their internet. If the customer has an adtran (they most likely will if there are phone numbers on the account) and they have internet through us nine times out of ten their phones work off the same internet as their data, so if they are on the phone with you and it's a number we provide, their internet is working it's on their side. At no point in time should you walk them through power cycling anything on their side, all that needs to be said is "we suggest you power cycle your equipment" then explain about the phones or that you are able to log into our equipment. Please remind them to NOT power cycle our equipment, if they want that done, you do it. That way they know you are indeed logged into the equipment. Here is how you use the equipment.

TNE-1544 / TNE-1584



Red = The circuit / Our part

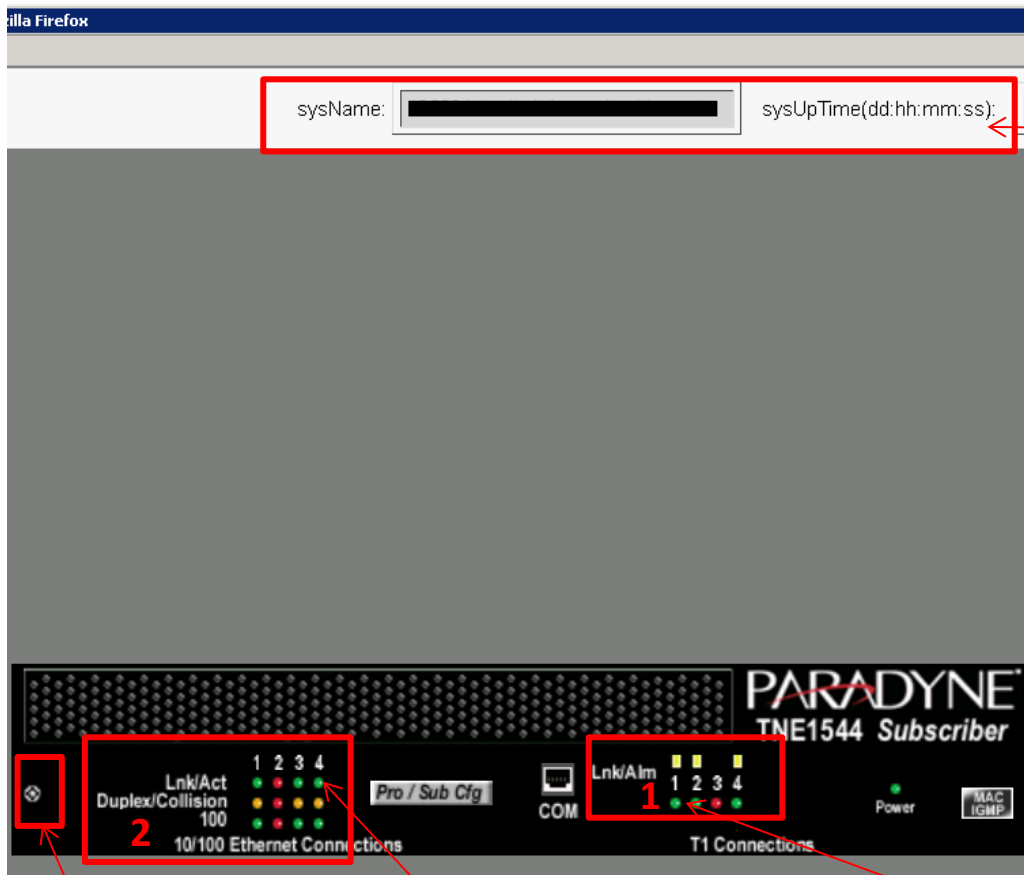
Yellow = What the customer has plugged in / Their part

Green = The button to reboot the modem remotely.

The TNE will come up with a warning about resetting the device, you are not resetting the settings but instead the stats and is the reason for the warning. As a last resort reboot this for them.

Purple = You don't need to use anything on the menu selection and is not where you click to get to the info.

The 1 and 2 ports are for data while the 3 port is for phones and the 4 port should not be being used. This does not mean to tell them to change this but if someone calls and they need to plug something into the 4 port then call over to Jason or Julie so they can make the proper adjustments.



sysName:

sysUpTime(dd:hh:mm:ss):

Double check to make sure you're in the right equipment, some of it is labeled wrong however you can check the circuit ids off CMS

Click on here to reboot the equipment

Click on one of the top green bubbles to get to the LAN stats

Click on one of the green bubbles to get to the circuit performance.

1: When you click on one of the circuits this screen is brought up and is quite easy to accidentally make changes in. If you do then contact Julie or Jason right away so they can adjust the equipment.

The screenshot shows a network configuration interface with several tabs at the top: Circuit Config., DSCP Rules, IP Rules, MAC Rules, VLAN Rules, EtherType, **Port Statistics** (highlighted with a red box), and Port Copy. Below the tabs is a table with columns: Port, Circuit Identification, Device Type, and Revision. The first row shows Port 1, an empty Circuit Identification field, Device Type TNE1544 Sub., and Revision 1.02.03. A red arrow points from the 'Port Statistics' tab to the 'Circuit Identification' field.

Circuit Configuration Settings

Filter IP Address Settings

IP Range	Start	End
IP Range 1:	0.0.0.0	255.255.255.255
IP Range 2:	0.0.0.0	0.0.0.0
IP Range 3:	0.0.0.0	0.0.0.0
IP Range 4:	0.0.0.0	0.0.0.0

Data Rate Setting

Rate Sub.(r/o) *see below for current data rate.*

Protocol Setting

☒ Allow All ☐ Allow Selected ☐ Disallow Selected

0000 0000 0000 0000

Note: enter hex value, eg. 0800,00fe

Rate limit for unknown unicast, unknown multicast, & broadcast traffic

Ingress Limit 0 Egress Limit 0

DHCP Option 82 Setting

☒ Enabled ☐ Disabled Identifying String: IPaddress:MIBII

Layer 2 Port Filter Settings

Note: If port is loop bonded, only configure the lowest numbered port in the group.

MAC 1: 00:00:00:00:00:00
MAC 2: 00:00:00:00:00:00
MAC 3: 00:00:00:00:00:00

☐ Unlimited # of MACs
- or -
Define # of MACs: 0

*Check the box to activate the port filters.

Frame Type **Line Code** **Tx Bldout** **Clk Src Sub.**

ESF B8ZS 0db Loop

submit

Port Status: Link
Data Rate: 1536 Kbps
CPE ID: DF.12.0A.06 Loop Bonded Group: 1,2,4

When this screen has popped up, click on **Port Statistics** to view the uptime and utilization.

PARADYNE

Port

1

Circuit Identification

Device Type

TNE1544 Sub.

Revision

1.02.03

Statistic	% Utilization	Rate(Kbps)	Max.(Kbps)	Ave.(Kbps)	Pkt Count	Octet Count
WAN Non-Unicast RX:	0%	0	28	0	8650891	486193356
WAN Non-Unicast TX:	0%	0	9	0	1868087	80609721
WAN Unicast RX:	1%	23	2442	107	531928210	321468097301
WAN Unicast TX:	6%	99	1543	128	2639129861	382647485085
TOTAL RX:	1%	23				
TOTAL TX:	6%	99				
Network Loop Count:	0					
Last Mac Causing Loop:	00:00:00:00:00:00					
Last Mac Source Port:	0					

Utilization

	Days	Hours	Min	Sec	LINK Status	LINK Down Count
Up Time:	207	22	7	57	Link	
Down Time:	0	0	0	0		2
Total Up Time:	276	12	13	0		
Total Down Time:	0	0	0	42		

Uptime and Packet Loss

	Current (pps)	Max (pps)	Total
WAN Error Count RX:	0	91	4620

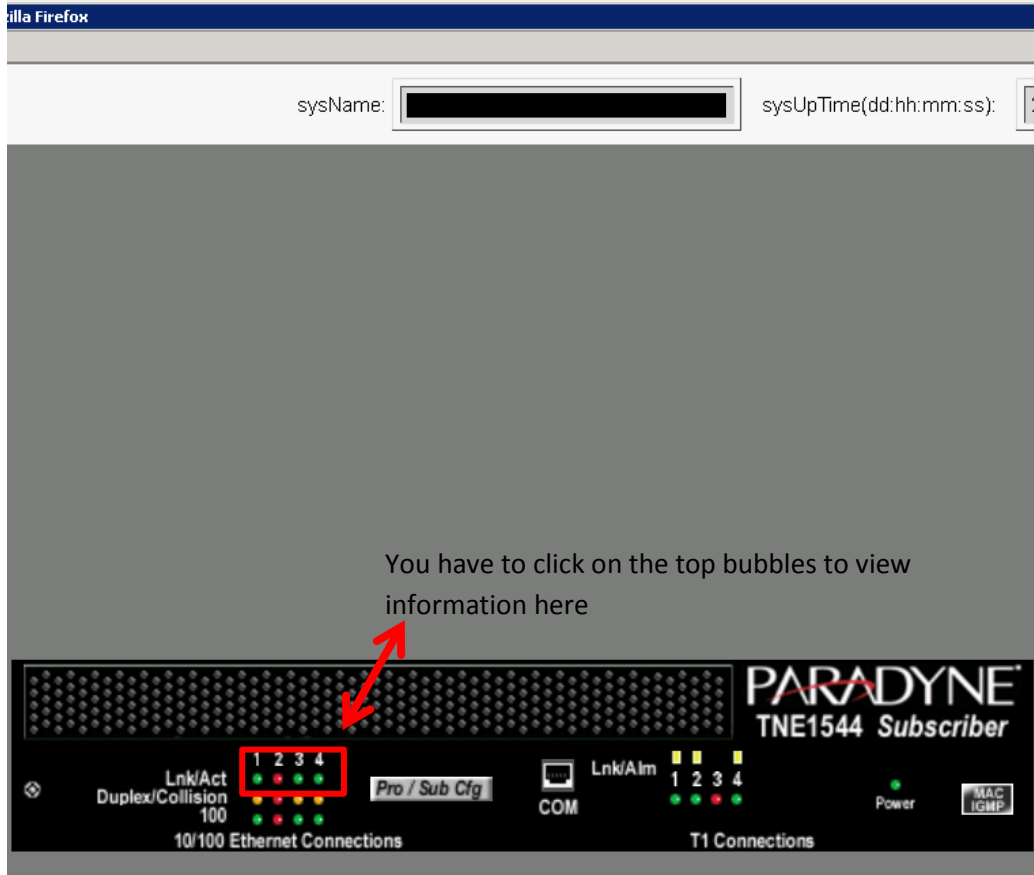
Dropped Pkts Tx Overflow: 11273

Dropped Pkts Count: 10444

Which config(s) caused pkts to be dropped

protocol filter ingress:	☐	protocol filter egress:	☐
IP range (ingress):	☐	IP range (egress):	☐
QoS VLAN config ingress:	☒	QoS VLAN config egress:	☐
rate limit exceeded ingress:	☐	rate limit exceeded egress:	☐
database trusted/untrusted violation:			
database - layer 2 port filter static or dynamic mac violation:			
database - static mac moved from a configured port:			
other drop reason:			

Port = You can change which number circuit you are looking at here.



Ethernet (10/100) Configuration - Mozilla Firefox

192.168.250.105/pdynimcfgfrm?1

PARADYNE®

Ethernet Configuration

Device Settings **Type: 10/100** **H.W. Rev.: 0**

#	Duplex	Speed (Mbps)	Native VLAN ID	Native VLAN ID Action	Pri
1	Auto-Neg ▾	Auto-Neg ▾	1217	native ▾	0 ▾

Click on Stats to view stats if you do not see any data coming from either side, the firewall is most likely jammed up suggest a reboot.

Transferring data from: 192.168.250.105

PARADYNE®

Ethernet Statistics

#	Device Type	Rx Frame (Pkt) Counter	Rx Byte Counter	Rx Multicast Pkt Counter	Rx Broadcast Pkt Counter	Rx Unicast Pkt Counter	Rx Error Counter
1	10/100	618593833	2189240062	1971844	1729748	612892243	0

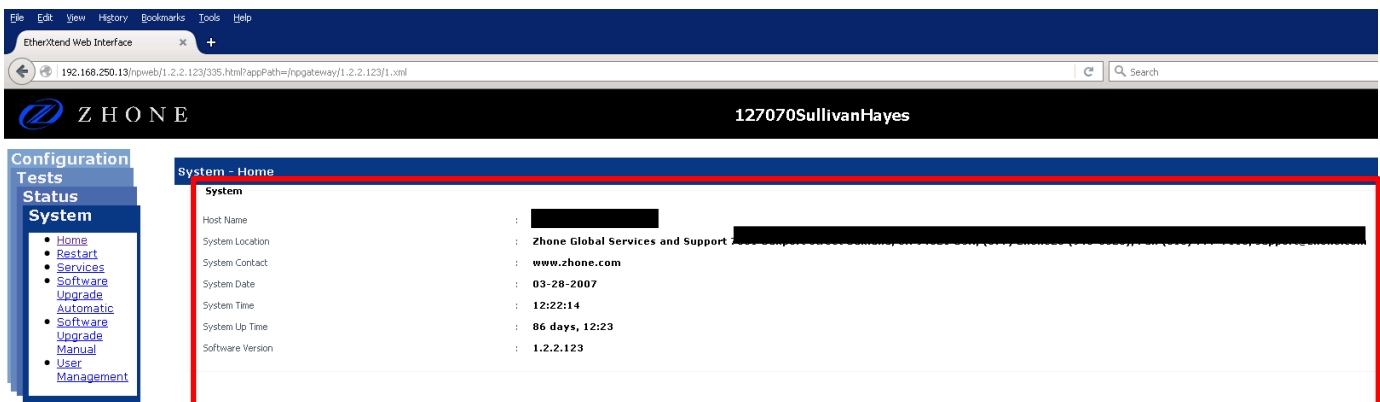
#	Device Type	Tx Frame (Pkt) Counter	Tx Byte Counter	Tx Multicast Pkt Counter	Tx Broadcast Pkt Counter	Tx Unicast Pkt Counter	Tx Total Collision Counter
1	10/100	794745390	3921849720	13554290	8671375	772519725	0

ETHX / SHDSL

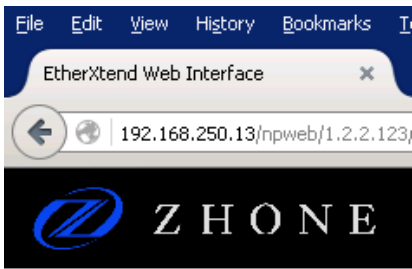
The first thing to remember is that the web interface for the ETHX may not be enabled, in which case just run some pings to the equipment from command prompt. Really it is best that we do all of this via nushell and all of you should have the information on how to use it.



Firstly log into the equipment while remembering that no one knew there a web interface for this so some may not have it enabled. No cause for alarm we just can't change it while it's in the field. Also call Jason for passwords extension 851



Take a moment to verify the customer information, this unit does not have the ability to view the circuit ID so if the information does not match then check the CMS for the IP address of the CPE, if it does not exist then call over to Jason or Julie and have the run **bridge showall port**



Configuration Tests Status System

- [Home](#)
- [Restart](#)
- [Services](#)
- [Software Upgrade Automatic](#)
- [Software Upgrade Manual](#)
- [User Management](#)

Syst

Here you can reboot the device, again this is last resort.



System Configuration Tests Status

- Bridging
 - [Forwarding Table](#)
- Interfaces
 - [Bridge](#)
 - [Ethernet](#)
 - [LAN](#)
- SHDSL
 - [Active Configuration](#)
 - [Group Status](#)
 - [Line Status](#)
- System
 - [Alarms](#)
 - [Description](#)
 - [SysLog](#)

Sy

1 Ethernet = Connected devices and status

2 LAN = Packet statistics for LAN and WAN

3 Line status shows the status of the SHDSL lines

1: Ethernet

The screenshot shows the Zhone EtherXtend Web Interface. The browser address bar displays `192.168.250.13/npweb/1.2.2.123/335.html?appPath=/npgateway/1.2.2.123/1.xml`. The page title is "Status - Interfaces Ethernet". On the left, a navigation menu includes "System Configuration", "Tests", and "Status". Under "Status", there are links for "Bridging", "Forwarding Table", "Interfaces", "Bridge", "Ethernet", "LAN", "SHDSL", "Active", "Configuration", "Group Status", "Line Status", "System", "Alarms", "Description", and "SysLog". The main content area is titled "Ethernet Table" and contains a table with the following data:

Interface Name	Active Settings	Status	Manual Settings	Auto-Negotiation	Administrative State	Follow WAN Uplink St
eth1:0	full100BaseT	up	full100BaseT	enabled	enabled	disabled
eth1:1	full100BaseT	up	full100BaseT	enabled	enabled	disabled
eth1:2	full100BaseT	up	full100BaseT	enabled	enabled	disabled
eth1:3	half10BaseT	down	full100BaseT	enabled	enabled	disabled

Below the table, a text box states: "This gives a quick view of LAN port status".

2: LAN

The screenshot shows the Zhone EtherXtend Web Interface. The browser address bar displays `192.168.250.13/npweb/1.2.2.123/335.html?appPath=/npgateway/1.2.2.123/1.xml`. The page title is "Status - Interfaces LAN". On the left, a navigation menu includes "System Configuration", "Tests", and "Status". Under "Status", there are links for "Bridging", "Forwarding Table", "Interfaces", "Bridge", "Ethernet", "LAN", "SHDSL", "Active", "Configuration", "Group Status", "Line Status", "System", "Alarms", "Description", and "SysLog". The main content area is titled "LAN" and contains a table with the following data:

Interface Name	Interface Alias
eth0	SHDSL-EFM
eth0.115	SHDSL-EFM / VLAN 115
eth0.12	SHDSL-EFM / VLAN 12
eth0.1420	SHDSL-EFM / VLAN 1420
eth0.98	SHDSL-EFM / VLAN 98
eth1	Ethernet Switch
eth1.0	Ethernet Switch / VLAN 0
eth1.115	Ethernet Switch / VLAN 115
eth1.12	Ethernet Switch / VLAN 12
eth1.1420	Ethernet Switch / VLAN 1420
eth1.98	Ethernet Switch / VLAN 98
eth1:0	LAN 1
eth1:0.1420	LAN 1 / VLAN 1420
eth1:1	LAN 2
eth1:1.115	LAN 2 / VLAN 115
eth1:2	LAN 3
eth1:2.12	LAN 3 / VLAN 12
eth1:3	LAN 4
eth1:3.98	LAN 4 / VLAN 98

Below the table, there is a "View Statistics" button.

Here we can find detailed status on everything from LAN to WAN to VLAN. Now it's pretty much common knowledge that SHDSL isn't all that error packet free, the only time to be concerned is if there are many incrementing errors call Jason or Julie right away so we can take a further look into the issue

System
Configuration
Tests
Status

- Bridging
 - [Forwarding Table](#)
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- System
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Status - Interfaces LAN View Statistics

Statistics

Interface Name	:	eth1:0
Interface Alias	:	LAN 1
Tx Packets	:	1595151256
Tx Bytes	:	3383108858
Tx Errors	:	0
Tx Overruns	:	0
Tx Dropped Packets	:	0
Rx Packets	:	1832815559
Rx Bytes	:	2255113726
Rx Errors	:	0
Rx Overruns	:	0
Rx Dropped Packets	:	0

Host Name XXXXXXXXXX
 Date and Time **03-28-2007 12:24:44**

[Refresh](#)

As you can see this is a pretty straight forward any questions please call Julie or Jason


Z HONE

127070SullivanHayes

System
Configuration
Tests
Status

- Bridging
 - [Forwarding Table](#)
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 - [Ethernet](#)
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- SHDSL
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 - [Group Status](#)
 - [Line Status](#)
- System
 - [Alarms](#)
 - [Description](#)
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Status - Interfaces LAN View Statistics

Statistics

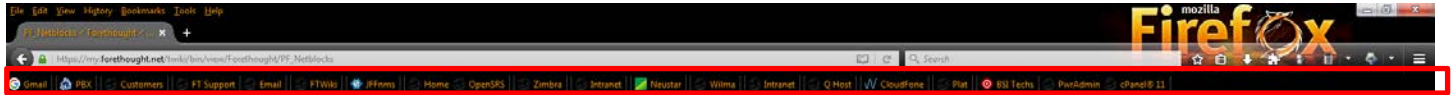
Interface Name	:	eth1:2
Interface Alias	:	LAN 3
Tx Packets	:	227153435
Tx Bytes	:	2456728315
Tx Errors	:	0
Tx Overruns	:	0
Tx Dropped Packets	:	0
Rx Packets	:	222588155
Rx Bytes	:	1436735604
Rx Errors	:	0
Rx Overruns	:	0
Rx Dropped Packets	:	0

Host Name XXXXXXXXXX
 Date and Time **03-28-2007 12:25:53**

[Refresh](#)

Another sample of the information any can access via Wiki

Here is how I handle all the different sites I go to is to bookmark them to a special folder then on the bookmarks tool bar as well;



Here I have all the bookmarks in one convenient place where as all the notes I have I actually began a note file that not only has notes but commands, cheats, and all kinds of goodies.

Websites

Forethought Wiki:	https://my.forethought.net/twiki/bin/view/Forethought/WebHome
Support Tickets:	https://my.forethought.net/intranet-dev/support/
DSL Hints:	https://my.forethought.net/twiki/bin/view/Forethought/ConfigureCO
Customer Equipment:	https://my.forethought.net/twiki/bin/view/Forethought/PF_Netblocks
CMS (cust mng sys):	https://my.forethought.net/intranet-dev/contacts/
Important num:	https://my.forethought.net/twiki/bin/view/Forethought/telephonenumber
Opensrs Wiki:	https://my.forethought.net/twiki/bin/view/Forethought/OpenSRS
Domain Mgmt:	https://resellers.opensrs.net/resellers/
DNS Mgmt:	https://my.forethought.net/poweradmin/
DSL Testing/CLI:	https://my.forethought.net/twiki/bin/view/Forethought/AcceptLoops
PerfectFax:	https://perfectfax.forethought.net (must be opened in IE)
QHOST (Forethought)	QHost - Use This username: interlinkad, password: forethoughtnet

Glossary of Terms

General Terms

- [General Terms](#)
- [1.1. ILEC](#)
- [1.2. CO](#)
- [1.3. PSTN](#)
- [1.4. VoIP](#)
- [1.5. End-to-End](#)
- [1.6. End-to-CO](#)
- [1.7. CPE to CO](#)
- [1.8. T1](#)
- [1.9. EFM](#)
- [1.10. ISP](#)
- [1.11. CPE](#)
- [1.12. 66 Block](#)
- [1.13. PBX](#)
- [1.14. Analog](#)
- [1.15. Digital](#)
- [1.16. PRI](#)
- [1.17. SIP](#)
- [1.18. Demarcation Point](#)
- [1.19. Smart Jack](#)
- [1.20. UPS](#)
- [1.21. EFM](#)
- [1.22. Eoc](#)
- [1.23. Customer Premises Equipment \(CPE\) & Layout](#)

1.1. ILEC

- Incumbent Local Exchange Carrier. An ILEC is the major local telephone company in each market. An ILEC is responsible for providing local telephone exchange services in a specified geographic area. Forethought leases T1 circuits from the ILECS in each of our markets, which is [CenturyLink²](#).

1.2. CO

- Central Office. The CO is the physical building that the ILEC uses to house their telephone switching equipment in these facilities. Forethought houses various essential equipment inside the ILECs' COs.

1.3. PSTN

- Publicly Switched Telephone Network. The transport network used by the ILECs. Most telephone conversations traverse this circuit switched network, which is controlled by the ILECs. This includes Forethought, which hands off most of its conversations to the ILEC for final transport through the PSTN.

1.4. VoIP²

- Voice over IP. The transmission of voice data by using the Internet Protocol (IP). Forethought uses VoIP² to deliver voice packets to our ILECs for transmission out to the PSTN. The term VoIP² is often misunderstood and can be broken down into the following perspectives:

1.5. End-to-End

Uses IP throughout the entire transmission pathway, including end user equipment. Providers such as Skype utilize this methodology.

1.6. End-to-CO

Uses IP up to the ILEC. One side uses VoIP², the other uses standard circuit switched communications. Forethought SIPConnect follows this model

1.7. CPE to CO

Forethought's most common method of delivery, voice traffic is packetized at the CPE, then changed to standard circuit switched communications as it is handed to the ILEC for transmission to its endpoint.

1.8. T1

- A T1 is a Time Division Multiplexed (TDM) circuit which is broken into 24 channels for transport of voice and or data. Forethought leases T1s from the ILEC in each market in order to provide last mile connectivity to our customers. T1s provide 1.54 Mbps of bandwidth, or 24 simultaneous voice calls. However, Forethought uses the T1 to provide VoIP² services, which mostly ignores the channel structure of the T1. All information is sent in data format, using the aggregate 1.544 Mbps bandwidth for voice and data transmission. T1s are our most common connectivity method for our customers.

1.9. EFM

- Ethernet First Mile. EFM is Forethought's alternative to T1s for providing connectivity to our customers. Instead of using T1s, EFM customers use multiple pairs of cheaper 2 wire copper to connect to the CO. Ethernet provides greater bandwidth and redundancy at a lower price, but is limited in the distance that it can be used.

1.10. ISP

- Internet Service Provider. Although Forethought functions as our customer's ISP, we are not final node to connect to the backbone Internet. Forethought sends our customers' Internet traffic to our ISPs, which do connect to the backbone Internet, and vary by market.

1.11. CPE

- Customer Premises Equipment. CPE is the equipment at the customer site. This may include customer owned routers, switches, PBXs, and firewalls, but is also sometimes used to describe our equipment which resides at the customer site. Customer premises device that provides access to Forethought voice and data services. This is the most important piece of Forethought owned equipment at the customer site.

1.12. 66 Block

- Used for Forethought Analog customers only. The 66 block is a punch down block used to connect the CPE (Adtran6XX) each individual telephone within a customer site.

1.13. PBX

- Private Branch Exchange. Used for Forethought Digital or SIP customers only. A PBX is a customer owned telephone exchange device which provides dial tone and intelligent services within the customer premises. The PBX connects to the CPE using either a T1 crossover cable (CAS and PRI) or a regular Ethernet connection (SIP).

1.14. Analog

- The most common voice interface for Forethought customers. Analog customers connect to our CPEs via a 66 block. Their phones will typically show Line 1, Line 2 etc.

1.15. Digital

- Forethought Digital customers own a PBX, which is generally intelligent to provide some of the same calling features that we provide for our Analog customers. Depending on their type of PBX, they will have one of the following services.

1.16. PRI

- Primary Rate Interface

1.17. SIP

- Session Initiated Protocol. SIP is the most advanced of our interface options. SIP customers are often referred to as Digital customers as well, but their PBXs are SIP enabled, and much more powerful. These customers use their own VoIP² phone equipment, which connects to their SIP PBX, then to our CPE, via an Ethernet interface.

1.18. Demarcation Point

- Also known as the demarc, this is the point where one provider's responsibility ends and another begins. This varies depending on the Forethought service type, but is very clear for our ILECs, which is the Smart Jack.

1.19. Smart Jack

- This is owned by the ILEC and is the last connection point for the T1. The Smart Jack is a termination device which can be tested by the ILEC to determine if there are any errors or connectivity problems on the T1. If there are, the ILEC fixes these problems. This is the ILEC's point of demarcation.

1.20. UPS

- Universal Power Supply. This is one of two CPE devices provided by Forethought - is the other unit. The UPS provides a battery backup for the CPE in case of a power outage.

1.21. EFM

- Ethernet First Mile is an alternative to T1s as a delivery method for voice and data services to our customers. EFM provides a cost savings to Forethought, while providing the same level of voice and data quality to our customers. EFM is the recognized industry term. At Forethought, EFM is referred to as Metro Ethernet over copper (MEOC). Whenever you are speaking with customers please ensure that you are referring to the product by the official name Eoc. Eoc provides the following benefits: .Less expensive to lease from our LECs .More redundancy/Less ASD .Greater bandwidth potential than T1s .Greater breadth of troubleshooting methods on the Forethought side

1.22. Eoc

is constrained by distance. The maximum distance for an Eoc pair is 17,000 feet (Just over 3 miles) Thus Eoc will never be able to replace all of our T1s, but will be able to service around 40% of our customers. Depending on the distance from a central office, each individual copper pair can be provided up to 5.7 Mbps per pair. This speed can only be accomplished on pairs that are less than 5000 feet from the central office. As distance increases, bandwidth decreases. Multiple copper pairs can be bonded together to provide redundancy and greater bandwidth. The Metro Ethernet architecture can be viewed from two perspectives, the Customer Premise and the Forethought Network [MetroEthernet²](#) Devices & Architecture simplified diagram

1.23. Customer Premises Equipment (CPE) & Layout

At the customer premises, Metro Ethernet is significantly different than the typical T1 layout. When T1s terminate at the customer premise a smart jack is placed at the customer site and serves as the demarcation point for the ILEC. However, regarding Metro Ethernet, copper pairs delivered from the ILEC are terminated into a Metro Ethernet Access CPE device that is provided by Forethought. One port on the CPE device will be connected to the Integrated Access Device (CPE). The other port is connected to the customer's LAN device. CPE & Layout

need to change into the TNE ETHEX connect to 600 or 900 The CPE devices built and supported by Adtran 6XX are available in multiple models. The model numbers are based on how many copper pairs are supported. All CPE models also include a port Ethernet port. CPE Supported Models