[Ethertech Digest]
[twisted pair gangstas]
[issue 2, volume 1]

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0o.....

The First Amendment to the Constitution of the United States of America:

"Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof; or abridging the freedom of speech or of the press; or of the right of the people peaceably to assemble, and to petition the Government for a redress of grievances"

Freedom as in Free Lunch.

Ethertech Digest is published by Ethertech Global Industries for the good of the public. We don't give a shit about corporate interest; this is for the people that care about the world around them.

The views and opinions that may be expressed by the authors does not necessrily represent those of the staff, but it might. The writers are the staff, and therefore causes a dilema. Figure it out. However, the existance of views in the absense of of anyone to hold them is left as an exercise for the reader.

Etherech Digest is produced for educational purposes. Everything is hypothetical unless otherwise noted. When illicit behavior is mentioned it means we want you to go do these things; otherwise we wouldn't write about them. We condone and encourage illicit behaivor. There, I said it. Do something about it.

However, we're not responsible if you do something stupid and/or illegal as you are choosing to do so out of your own free will. Remember that thingcalled free will?

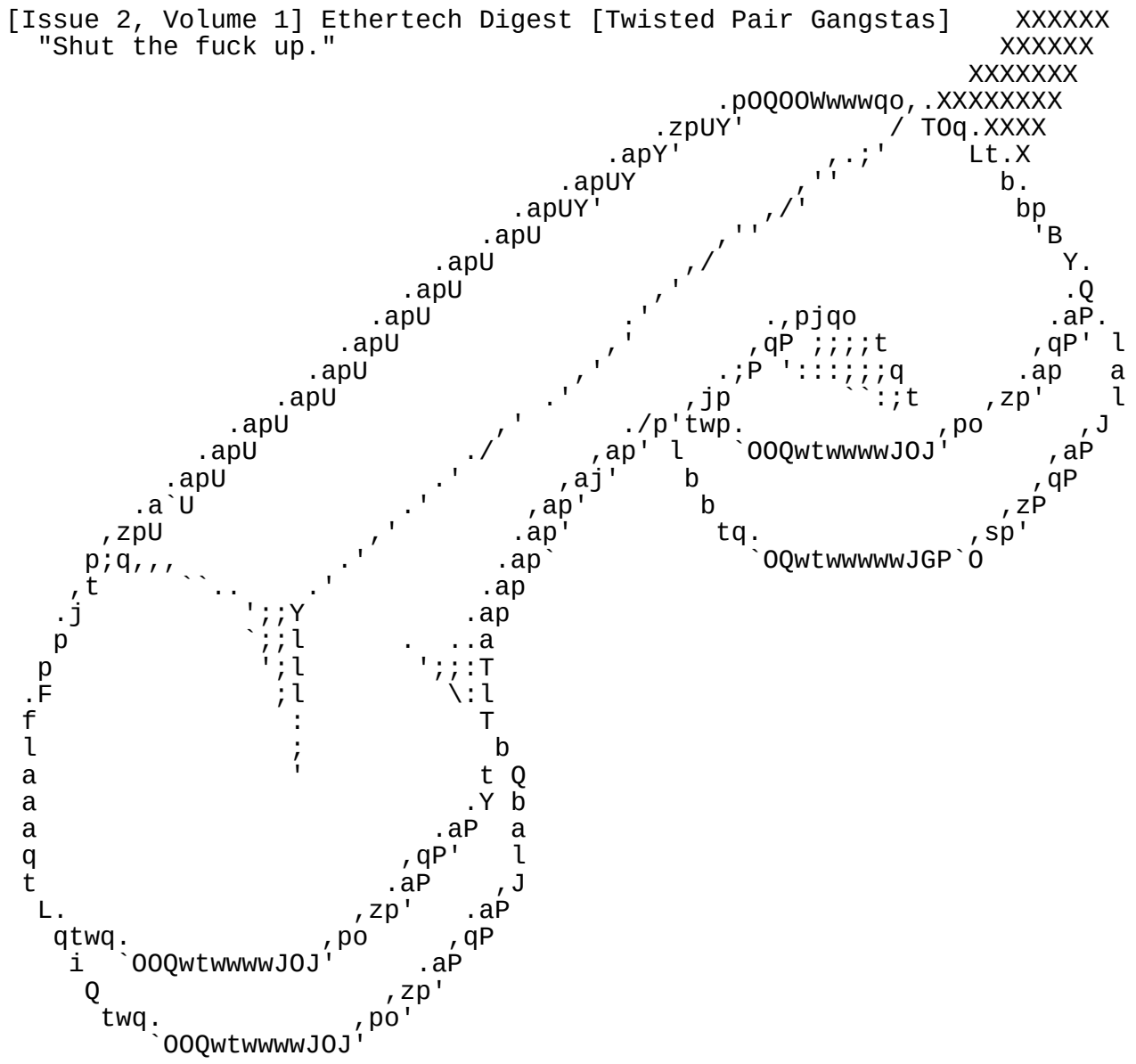
So there you have it; don't copy our shit lest you be mocked for all eternity, and don't whine if you think we're assholes. In other words, don't be a fuckin' wanker.

We publish on a (with luck) quarterly basis, although like all things, this is fallable. We are human after all.

Submissions go to lawg, if you can reach him.

.

"Shut the fuck up."



The Soldiers of Humanity - Author Uknown/Zen Koan

Once a division of the Japanese army was engaged in a sham battle, and some of the officers found it necessary to make their headquarters in Gasan's temple.

Gasan told his cook: "Let the officers have only the same simple fare we eat."

This made the army men angry, as they were used to very deferential treatment. One came to Gasan and said: "Who do you think we are? We are soldiers, sacrificing our lives for our country. Why don't you treat us accordingly?"

Gasan answered sternly: "Who do you think WE are? We are soldiers of humanity, aiming to save all sentient beings."

Ethertech Global Industries exists for itself to further it's own existence.

Ethertech Global Industries is solely in and of itself.

Ethertech Global Industries does what it wants, when it wants. Especially with your PSTN.

Ethertech Global Industries will fight you. It will punch you in the face.
Ethertech Global Industries broke into your mom's house last night.
Ethertech Global Industries has a soft spot for well-made tuna sandwiches.

Ethertech Global Industries is technological masturbation.

Ethertech Digest is a a shot of methadone for your process table.
Dig it.
It will decode and eat your pixbufs and disintegrate your bitmaps.

You have been warned.

Ethertech Digest is **serious and drunk**. You might get punched.

Ethertech Digest is not the same as Ethertech Global Industries, despite any allusions otherwise. **Argue it. You will lose.**

Ethertech Digest will have your baby. For a fee, and it wants visitation rights. **Dig it.**

Ethertech Digest is only non-conformist when non-conforming indicators would liken to the status quo. It does not dance, either. Dig it.

Ethertech Digest is single-minded and multi-faceted. It bows to no man.

Ethertech Digest will produce nothing, however, it will be produced. It is weapons-grade and it is laser-guided. Fuck with it, if you dare.

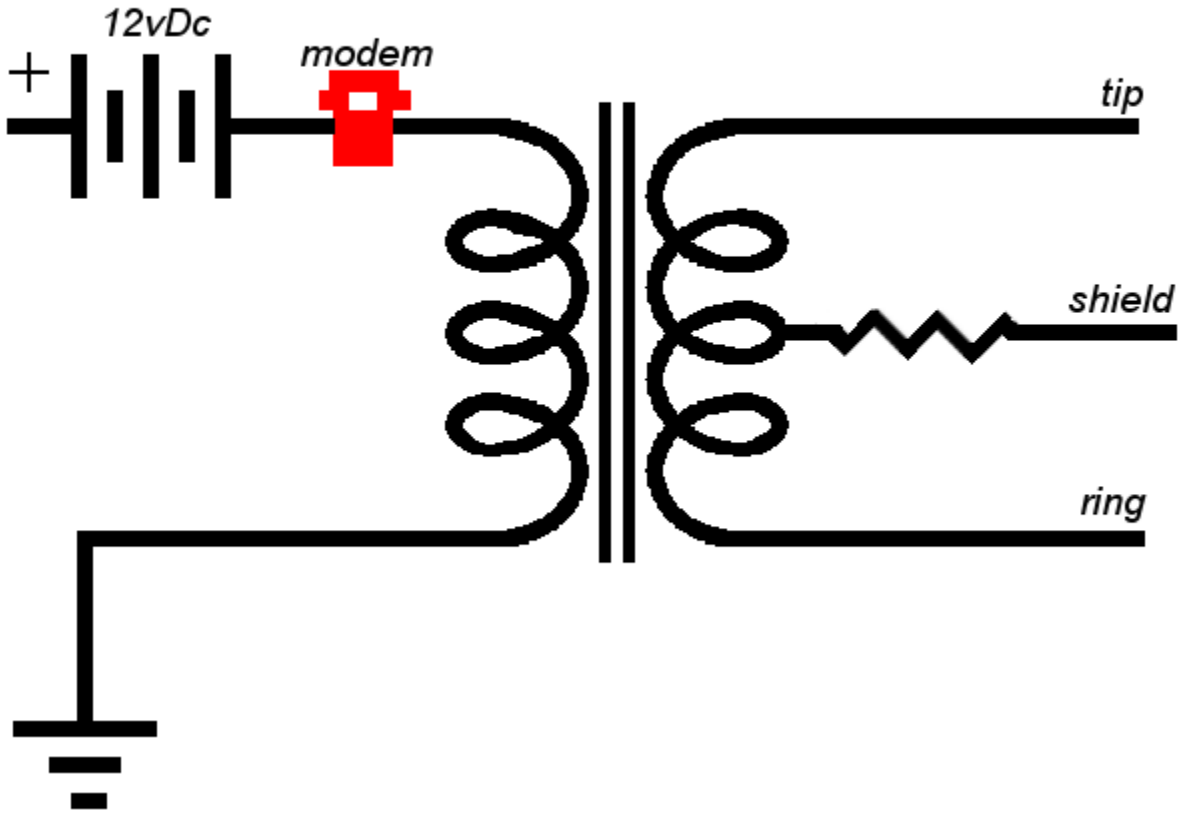
You have been warned.

[brainfuck.c]

/* just for wanks. */

```
#include <stdio.h>

char code[65536];
unsigned int sand[30000];

int main(int argc, char **argv)
{
	FILE *prog;
	int cmd=0,p=0,len;
	int skip=0;

	if (argc < 2) { fprintf(stderr, "I need a program filename"); exit(0); }

	if(prog = fopen(argv[1], "r"))
		len=fread(code,1,CODESIZE,prog);

	bzero(sand,SANDBOX);

	while(cmd < len) {
		switch(code[cmd++]) {
			case '>': p++; break;
			case '<': p--; break;
			case '+': sand[p]++; break;
			case '-': sand[p]--; break;
			case ',': sand[p] = getchar(); break;
			case '.': printf("%c",sand[p]); break;
			case '[': if(sand[p] == 0) {
					while(code[cmd++]) {
						if(code[cmd] == '[')
							skip++;
						else if(code[cmd] == ']')
							skip--;
						if(skip== 0 && code[cmd] == ']')
							break;
					}
				}
			case ']': if(sand[p] != 0) {
					while(code[cmd--]) {
						if(code[cmd] == ']')
							skip++;
						else if(code[cmd] == '[')
							skip--;
						if(skip== 0 && code[cmd] == '[')
							break;
					}
				}
		}
	}
	return(0);
}
```

[phone patch (again!)]



Transformer is 600ohm 1:1 centre-tapped.
Resistor is 150ohm.

Notes:
1. A Cellphone input is a 1/16" stereo connector.
2. If you separate the jacks (for VoIP, etc) tip is input, ring is output and shield is shared. If it doesn't work reverse it, dummy.
3. The DC power requirements are flexible. Use your head.


SERIOUS FUCKING BUSINESS
THE INTERNET
"A Full Throttle Thriller"
PG-13
UNIVERSAL
WIDESCREEN

[Portscan detection with Awk]

I wrote up two simple scripts to detect if I was being probed. The first one was to see if I could get any decent results just using basic unix commands, whereas the second is meant to be a little more useful.

Version 1:

The original. Can be used to detect if a portscan was run on your system, but isn't very friendly. There is certainly no real-time alert if you get scanned. p0f has to be running in daemon mode with it's output logging to scanlog.p0f for it to find any matches.

If you are running a webserver or something that receives a lot of traffic, you might get a false-positive, being as it doesn't differentiate ports.

You have to run it manually and know how to parse the output yourself, but if you need to find out how many connections are being made to your system it serves as a quick analysis tool. If they're all on the same port it's probably not a problem (AIM direct connection, DCC, your webserver), but if it's all of your ports, es no bueno.

How many times each IP has connected to you in 80 characters:

```
cat scanlog.p0f|awk '{split($6,ip,":");print "- "ip[1]" ("$8" "$9")";}'|uniq -c
```

I hope it makes a little sense, even if it's not that well written.

Version 2:

Now we step it up a notch, determining how many different ports have been connected to. I got drunk and continued writing, now. It's a little more complicated than I had originally anticipated, but does the job. I highly recommend Murphy's Stout, it is a happy beer.

```
#!/bin/sh
IPLIST=`cat testlog.p0f|awk '{ split($6,ip,":"); print ip[1]; }'|sort|uniq`

for count in $IPLIST
do
     OUTPUT=`cat testlog.p0f|awk '/'$count*'/{ print $14; }'|uniq -c| \
     awk '{split($2,ip,":"); } END { print NR; }'`


     if [ "$OUTPUT" -ge "10" ]
     then
          echo "$count ( $OUTPUT unique ports ) - WARNING: PORTSCAN?"
     else
          echo "$count ( $OUTPUT unique ports )"
     fi
done
```

As you can see, if 150 connections come into a single port it isn't reported, but if the same IP connects to more than 10 different ports on your system, it throws up a flag. Might not be the best method of detection, but it will catch somebody running a generic portscan on your box. It may even detect more stealthy scans depending on the arguments given to p0f. This could be easily modified to run against tcpdump logfiles, too.

[Securing Files The sh Way]

Using some sort of hashing utility, some shell scripting and cron you can build yourself a simple system to prevent modification to system binaries, directories and other files.

As with anything, this does not ensure security. These demonstration scripts do not report in a secure manner, i.e. the logs stay on the local system, and the control hashes are not secured. If you set it up to run from cron, the frequency of the scan could make a difference. My recommendation would be to set it up to email any changes to you at an offsite location, put the control hashes somewhere you can find them later (/usr/local/etc/ perhaps), and have cron run it regularly, depending on system load.

First we create a file containing a list of the files/directories that we wish to protect, along with their hashes. A simple script could be written to add/remove entries, but for our purposes we'll be creating this file by hand. My examples will use MD5.

Example Control File:

```
/sbin          61dc2fb5db327c3c3c1d8935abd47c73
/etc/passwd    798adb0ba249126a7cc5dde9e19f057f
/bin/sh        aeeba2bbde13454fce6a8ecbc04a190a
```

Example File-Checking script:

```
#!/bin/sh

FILELIST=`cat /usr/local/etc/secured-files|awk '{ print $1;}'`

for count in $FILELIST
do
     CHASH=`cat /usr/local/etc/secured-files|awk '/'$count*'/{ print $2; }'`
     HASH=`md5 -q $count*`
     if [ $HASH != $CHASH ]; then
          if [ -s $count* ]; then
               echo "$count* has been modified!"
          fi
     fi
done
```

Really, pretty simple. You'll have a good idea when or if your box is compromised, unless you don't set this up properly. It would be trivial to add entries for SUID, filesize, mtime, etc and check for those as well.

I guess that's it. I just wanted to remind everyone how cool bash and awk were, and let those people who didn't know find out.

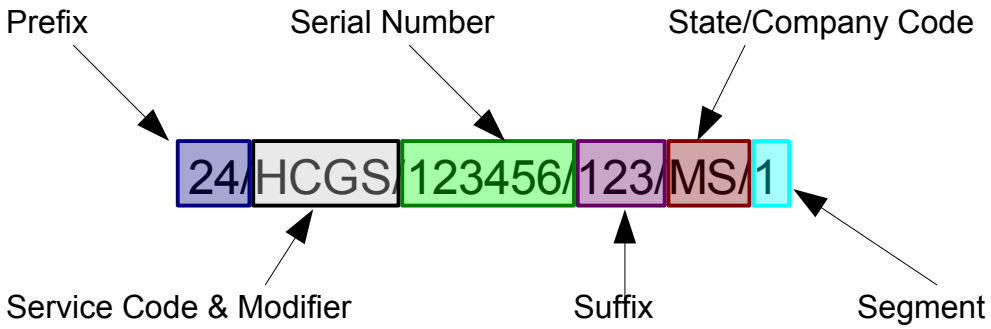
[Circuit ID Notes]

This is kinda jumbled, but you should be able to figure it out. I've tried to compile as much information from the varying sources and force them to make sense together. RBOCs seem to have their own special way of encoding their Circuit IDs, but for the most part still tend to follow the Telcordia CLCI standards. With all the mergers and whatnot, just use your instincts... there aren't too many mutations on the standard (hint: AT&T.)

As per telcordia:

> **"COMMON LANGUAGE Special Service Circuit Codes (CLCI S/S Codes) provide you with a stable naming scheme for describing special-service circuits. When used on forms, orders, requests and bills, these codes link every aspect of efficient circuit provisioning."**

Serial Number Format



- **Prefix**: 1-2 alphanumeric characters. This is an optional field. This often times represents the LATA, encoded differently based on the BOC and the state. Often times (Verizon, SBC) code is either the first two or last two digits of the actual LATA. Telcordia identifies this field as the State Code.
- **Service Code & Modifier**: 2-4 alphabetic characters (usually 4). Required. This is usually an NC (Network Carrier) Code, the first two digits representing the type of service and the second two digits representing service options (line conditioning, etc). If it's a proprietary SC you may be SOL --I've yet to see any definable list of descriptions about them and they seem to vary from BOC to BOC. Some research may be necessary, but it doesn't seem impossible.
- **Serial Number**: 1-6 digits. This is a required field. This is somewhat arbitrary, and only useful because it uniquely identifies the line.
- **Suffix**: 3 char suffix to the serial number may be required (rarely used). Telcordia identifies this field for use "when the customer has more than one circuit with the same originating/terminating locations."

- **State/Company Code**: 2-4 alphabetic characters. This is a required field.

Bellsouth:
SB Old Bellsouth Region
SC South Central Bell Region

Qwest:
This field is used as a company code (usually NW, MS, or PN), and the Suffix field is filled out according to the following table:

Central	MS	Eastern	NW	Western	PN
Arizona	19	Iowa	01	Oregon	05
Colorado	29	Minnisota	03	Washington	04
Idaho	39	Nebraska	07	Montana	49
N. Dakota	05	New Mexico	59		
S Dakota	09				
Utah	69				
Wyoming	79				

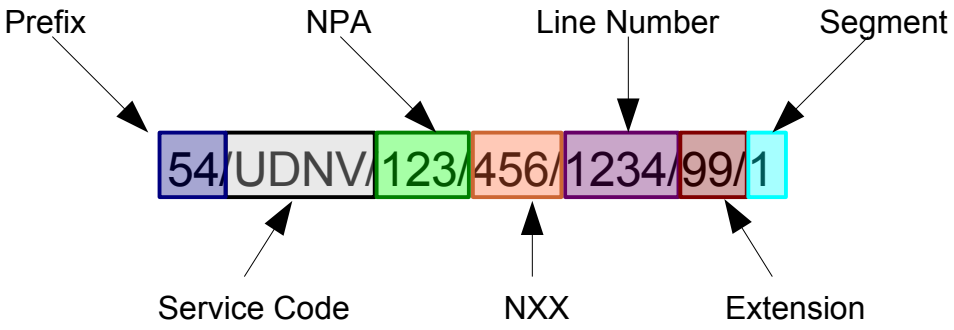
Verizon and ***SBC/AT&T*** use the standardized two-char state abbreviations. Now that Bellsouth is AT&T, it's hard to say which standard to expect.

- **Segment**: 1-3 alphanumeric characters. optional for non-multi-point circuits. multi-point segments map to Circuit End Location, e.g. CLK1 = A, CLK2 = B

Examples (courtesy of Verizon)

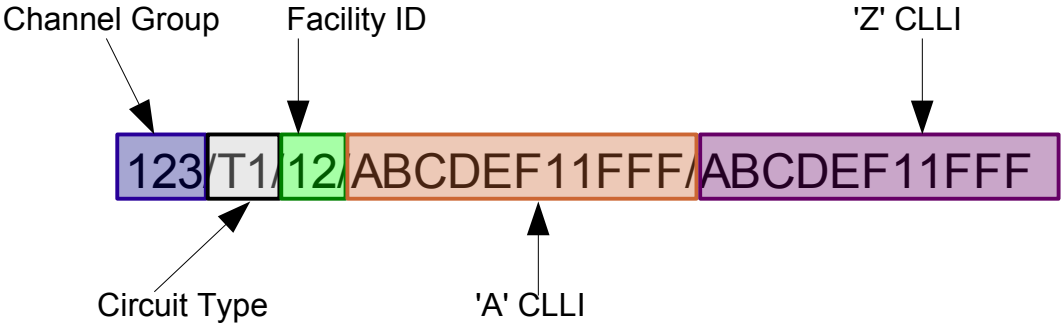
```
Unbundled Loop      72/ARDU/123456/NY/1
DSL                 34/ARDU/123456/MA
Line Sharing        86/SWXX/123456/PA
Line Splitting      45/URXX/123456/DE
T-1                 36/HCGS/123456/PA
```

Telephone Number Format



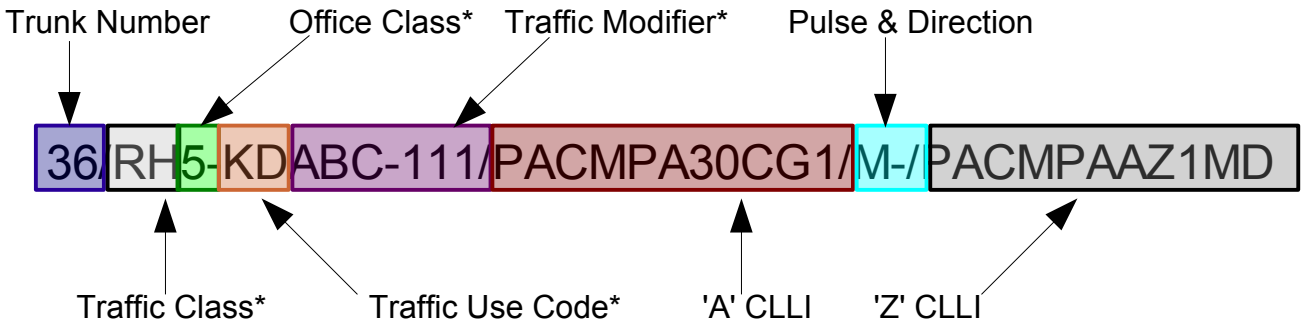
- **Prefix**: 2 alphanumeric characters. required if it exists. Telcordia identifies this field for use as the **State Code** (redundant as the NPA/NXX fields are required.)
- **Service Code & Modifier**: 2-4 alphabetic characters (usually 4).
- **NPA**: 3 digits. Duh. This is a required field.
- **NXX**: 3 digits. Duh. This is a required field.
- **Line**: 4 digits. Duh. This is a required field.
- **Extension**: 1-5 alphanumeric characters. This is an optional field.
- **Segment**: 1-3 alphanumeric characters. Optional field; rarely used. Telcordia identifies this field for use as a '**Trunk Code**.'

Carrier Facility Circuit



- **Channel Group Number**: 1-5 alphanumeric characters.
- **Circuit Type**: 1-6 alphanumeric characters.
  (Examples: T1, T1F, T1U, T1UZF, T1Z, T1ZF, T3)
- **Facility ID**: Not required.
- **'A' CLLI Code**: 8 or 11 alphanumeric characters.
- **'Z' CLLI Code**: 8 or 11 alphanumeric characters.

Message Trunk Format



- **Trunk Number**: 1-4 alphanumeric characters. This is a required field.
- **Traffic Class**: 1-2 alphanumeric characters. This is a required field. A hyphen may be allowed *
- **Office Class**: 1-2 alphanumeric characters. This is a required field. A hyphen may be allowed *
- **Traffic Use Code**: 2 alphanumeric characters. This is a required field. A hyphen may be allowed. *
- **Traffic Modifier**: 1-7 alphanumeric characters. This is an optional field.
- **'A' CLLI Code**: 8 or 11 alphanumeric characters. This is a required field.
- **Pulse & Direction**: 2 alphanumeric characters. This is a required field.
- **'Z' CLLI Code**: 8 or 11 alphanumeric characters. This is a required field.

* No separator between the Traffic Class, Office Class, Traffic Use Code, or Traffic Modifier Fields.

2/6 Codes

The Two-Six Code will be present on any transport circuits that carry switched trunks. It represents the trunk group that the switched trunks reside.

```
AB123456/1
AB123456/1234
```

[Network Channel Interface (NCI) Codes]

Fuck this shit. This shit is bananas, son. We need some k0dez, bring back the old-school. Let's go...

The Network Channel Interface (NCI) code designates five interface elements located at the Point of Termination (POT) or customer location. The interface elements are described below:

- Total Conductors is a two character numeric code (the first two characters of the NCI) that represents the total number of physical conductors required at the interface. This field is always filled.

- Protocol is a two character alpha code (positions 3 & 4) that indicates the transmission requirements. The protocols specified at either end of a circuit do not have to be the same, but they do have to be technically compatible. This field is always filled.

- Impedance is a one character alpha code (position 5) indicating the nominal impedance that terminates the channel. This field is always filled.

- Delimiter is either a period (.) or virgule (/) in position 6 that indicates the start of the protocol option code. If the option field is not coded, a double delimeter will be placed in character positions 6 and 7.

- Protocol Options is a one to three character alphanumeric code (positions 7 to 9) that indicates additional features of the protocol to be used. Protocol option codes are left justified in the field when fewer than three characters are used.

- Delimiter is either a period (.) or virgule (/) in position 10 if a three character protocol option code is used, or position 9 if a two character protocol option code is used, or position 8 if a single character protocol option code is used.

- Transmission Level Point (TLP) (last two positions after the second delimiter) is not used for Video Special Access and Local Channel Services but may be used to indicate direction of service by some Local Transport Providers.

Field Identifier	***Position***	***Type***	***Mandatory***
Total Conductors	1 & 2	Numeric	Yes
Protocol Code	3 & 4	Alpha	Yes
Impedance	5	Alphanumeric	Yes
Delimiter	6	“.” or “/”	No
Protocol Options	7-9, left justified	Alphanumeric	No
Delimiter	8,9 or 10	“.” or “/”	No
TLP Level TX/RX	Last two positions	Alphanumeric	No

Table 1: Code Format

Impedance	*Value*
600ohm	2
900ohm	3
75ohm	6
100ohm	9
50ohm (coax)	C
Fiber (LASER)	F
Fiber (LED)	E
Radio	Z

Table 2: Impedance Values

TLP	*Code*	*TLP*	*Code*
-16.0	A	None this direction (one way service)	O
-15.0	B	-3.0	P
-14.0	C	-2.0	Q
-13.0	D	-1.0	R
-12.0	E	0.0	S
-11.0	F	+1.0	T
-10.0	G	+2.0	U
-9.0	H	+3.0	V
Fractional TLPs	I	+4.0	W
-8.0	J	+5.0	X
-7.0	K	+6.0	Y
-6.0	L	+7.0	Z
-5.0	M	LEC Specified	-
-4.0	N	Recommended	BLANK

Table 3: TLP Conversion Chart

The k0dez:

Code	Options	Description
AB	-	Connects an IC to an access service for the transmission of voice and 20-Hz ringdown (pushbutton) signaling
AC	-	Connects end-user premises station to an access service for the transmission of voice and 20 Hz ringdown signaling
	R	Two-digit code select
BB	-	CO Bridging--Direct Bridge (Bunch Block) used on low speed data service
BD	-	Central Office Bridge--Digital Services
	19	19.2 Kb/s Data Rate
	24	2.4 Kb/s Data Rate
	48	4.8 Kb/s Data Rate
	56	56 Kb/s Data Rate
	96	9.6 Kb/s Data Rate
BF	-	Central Office Bridge--Split Frequency Bridge
	A*	400 Hz Lo-Pass
	B*	1300 Hz Lo-Pass
	C*	1370 Hz Lo-Pass
	D*	1650 Hz Hi-Pass
	E*	1925 Hz Hi-Pass
	F*	Customer to specify Lo-Pass
	G*	1300 Hz Hi-Pass
	H*	1810 Hz Hi-Pass
	J*	1460 Hz Lo-Pass
	K*	Customer to specify Hi-Pass
BL	-	CO Bridging--Bridgelifter
BM	-	CO Bridging--3-State (McCulloh) Bridge
BP	-	CO Bridging Audio Program (non-Broadcast)
BR	-	CO Bridging--Resistive Type .
BS	-	CO Bridging Dataphone Select-A-Station (DSAS)
CC	-	Contact Closure LEC provided dry contact closure toward interface
CS	-	Digital cross-connect system (DCS) termination
	33	3/3 DCS
	33R	3/3 DCS Customer Reconfigurable
	31	3/1 DCS
	31R	3/1 DCS Customer Reconfigurable
	30	3/0 DCS
	30R	3/0 DCS Customer Reconfigurable
	11	1/1 DCS
	11R	1/1 DCS Customer Reconfigurable
	10	1/0 DCS
	10R	1/0 DCS Customer Reconfigurable
	R	DS0 Customer Reconfigurable
CT	-	Connects an end user to a theoretical CO CENTREX tie-trunk equipment
CX	-	DS1 Termination on a digital switch
DA	-	Connects end-user premises to an access service suitable for the transmission of data and/or control supervisory signals
	D	Customer provided D. C. power

	L	Line powered (sealing current) DST
	S	Sealing current option for 4W transmission
	X	Simplex supervision (provided by line power or battery power)
DB	-	Connects an IC to an access service suitable for the transmission of data and/or control supervisory signals
	10	Frequency shift (108 data set type) . .
	43	43A1 to 43B1 carrier format
DC	-	Direct current or voltage
	1	Monitoring interfaced with series RC combination (McCulloh format)
	2	Telephone Company energized alarm signal
	3	Metallic facilities (DC continuity) for direct current/low speed data (30 baud)
	4	LEC facilities for DC attributes
DD	-	Connects an IC customer to an access service suitable for the transmission of data or tones
DE	-	Connects a EU customer to an access service suitable for the transmission of data or tones
DM	-	Data stream in VF frequency band at CO locations, interface at data modem at CO
	1	300 bps 103J type modem operation
	2	1200 bps 212A type modem operation
	3	1200 bps 202T type modem operation
	4	2400 bps 201B type modem operation
	5	4800 bps 208A type modem operation
	6	9600 bps CCITT V.29 type modem
	7	4800 bps CCITT V.27 type modem
	8	2400 bps CCITT V.22 type modem
	#P	Packet network w/specified bit rate, if required (# = Valid with any of the above codes)
	8PA	Modem operation CCITT V.22 bis (2-wire at 2400 bps) Asynchronous, Packet Switch Interconnect
	8PB	Modem operation CCITT V.22 bis (2-wire at 2400 bps) Asynchronous incorporating error-correction procedures per CCITT V.42, Packet Switch Interconnect
	8PS	Modem operation CCITT V.22 (2-wire at 2400 bps) Synchronous, Packet Switch Interconnect
	9PA	Modem operation CCITT V.32 (2-wire at 9600 bps) Asynchronous, Packet Switch Interconnect
	9PB	Modem operation CCITT V.32 (2-wire at 9600 bps) Asynchronous incorporating error-correction procedures per CCITT V.42, Packet Switch Interconnect
	9PS	Modem operation CCITT V.32 (2-wire at 9600 bps) Synchronous, Packet Switch Interconnect
	APA	Combined modem operation CCITT V.22 bis and V.32 (2-wire at 9600 bps) Asynchronous, Packet Switch Interconnect
	APB	Combined modem operation CCITT V.22 bis and V.32 (2-wire at 9600 bps) Asynchronous incorporating error-correction procedures per CCITT V.42, Packet Switch Interconnect
	APS	Combined modem operation CCITT V.22 bis and V.32 (2-wire at 9600 bps) Synchronous, Packet Switch Interconnect
DN	-	Data stream in VF frequency band at CO locations, interface

		at packet switch port at CO
	1	300 bps 103J type modem operation
	2	1200 bps 212A type modem operation
	3	1200 bps 202T type modem operation
	4	2400 bps 201B type modem operation
	5	4800 bps 208A type modem operation
	6	9600 bps CCITT V.29 type modem
	7	4800 bps CCITT V.27 type modem
	8	2400 bps CCITT V.22 type modem
	*P	Packet network with specified bit rate, if required (* = Valid with any of above codes)
DO	-	Digital interface at the digital signal level zero (DS0)
	A	DS0A at 2400 bps
	B	DS0A at 4800 bps
	C	DS0A at 9600 bps
	D	DS0A at 19200 bps
	E	DS0A at 56000 bps
	F	DS0A at 64000 bps
DS	-	DS1
	15	SF (AMI)
	15B	SF (B8ZS)
	15E	8-bit PCM encoded in one 64 Kbps of the DS1 signal
	15F	8-bit PCM encoded in two 64 Kbps of the DS1 signal
	15G	8-bit PCM encoded in three 64 Kbps of the DS1 signal
	15H	1 4/11 PCM encoded in six 64 Kbps of the DS1 signal
	15J	1.544 Mpbs (DS1) free-framing format per PUB41451 (US GOV)
	15K	1.544 Mbps (DS1) pre-ANSI extended superframe (ESF)
	15L	1.544 Mbps with SF signaling on analog end
	15S	Non-ANSI ESF (B8ZS)
	1K	Same as 15K with ANSI T1.403 ESF
	1S	Same as 15S with ANSI T1.403 ESF
	44	DSX-3 44.736Mb/s (DS3)
	44A	1-DS3 or 45 Mbps transmission bit rate
	44B	2-DS3 or 90 Mbps transmission bit rate
	44C	3-DS3 or 135 Mbps transmission bit rate
	44D	4-DS3 or 180 Mbps transmission bit rate
	44E	6-DS3 or 270 Mbps transmission bit rate
	44F	9-DS3 or 405 Mbps transmission bit rate
	44G	12-DS3 or 540 Mbps transmission bit rate
	44H	18-DS3 or 810 Mbps transmission bit rate
	44J	36-DS3 or 1620 Mbps transmission bit rate
	44L	44.736 Mbps, (DS3), single frequency
	EA	E&M signaling
	GO	Ground-start loop signaling-open end
	GS	Ground-start loop signaling-closed end
	LO	Loop-start loop signaling-open end
	LS	Loop-start loop signaling-closed end
	NO	Transmission only-no signaling
DU	-	Digital Access Interface
	001	Spectrum Managment Class 1 Signal per ANSI T1.417
	002	Spectrum Managment Class 2 Signal per ANSI T1.417
	003	Spectrum Managment Class 3 Signal per ANSI T1.417

	004	Spectrum Managment Class 4 Signal per ANSI T1.417
	005	Spectrum Managment Class 5 Signal per ANSI T1.417
	006	Spectrum Managment Class 6 Signal per ANSI T1.417
	007	Spectrum Managment Class 7 Signal per ANSI T1.417
	008	Spectrum Managment Class 8 Signal per ANSI T1.417
	009	Spectrum Managment Class 9 Signal per ANSI T1.417
	LSS	Loop Start, voiceband Signal and a High Frequency Portion with Spectrum Management Class 5, Signal per ANSI T1.417
	24	2.4 Kbs
	24S	2.4 Kbps with secondary channel
	48	4.8 Kbps
	48S	4.8 Kbps with secondary channel
	96	9.6 Kbps
	96S	9.6 Kbps with secondary channel
	19	19.2 Kbps
	19S	19.2 Kbps with secondary channel
	56	56 Kbps
	56S	56 Kbps with secondary channel
	64	64 Kbps
	16	160 Kbps with time compression multiplexing
	AN	1.544 Mbps (DS1) free-framing format per PUB41451 (US GOV) without line power
	BN	1.544 Mbps (DS1) SF format without line power
	CN	1.544 Mbps (DS1) pre-ANSI ESF format without line power
	DN	1.544 (DS1) SF format with B8ZS clear channel capability without line power
	SN	1.544(DS1) pre-ANSI ESF format, B8ZS clear channel capability without line power
	1KN	Same as CN with ANSI T1.403 ESF
	1SN	Same as SN with ANSI T1.403 ESF
DX	-	Connects a customer to an access service suitable for the transmission of voice using DX signaling
	X	Simplex reversal (4-wire)
DY	-	Duplex signaling (DX). Connects end users grandfathered switching system, described in Part 68 of the FCC rules and regulations, to an access circuit.
EA	E	Type I, E&M lead signaling, customer originates on E lead
	M	Type I, E&M lead signaling, customer originates on M lead
EB	E	Type II, E&M lead signaling, customer originates on E lead
	M	Type II, E&M lead signaling, customer originates on M lead
EC	M	Type III, E&M lead signaling, customer originates on M lead
EX	-	Back-to-back carrier arrangement with tandem signaling
	A	LEC has closed end
	B	LEC supplies dial tone
FA	8	Analog Fiber Interface, 824 to 894 MHz Passband
FC	-	Fiber Optic Interface
	8	824 to 894 MHz passband
	10	Up to 100 Mpbs transmission bit rate
	54	12-DS3 transmission bit rate
	12	24-DS3 transmission bit rate
	X	Dim fiber with specified bit rate, one end powered
	B	SONET: OC-3

	D	SONET: OC-12
	H	SONET: OC-48
GS	-	Ground Start loop signalling, customer provides CEF
	C	Centrex foreign exchange trunk termination
	M	C O answering service concentrator
	X	Simplex reversal (4-wire)
GO	-	Ground start signaling customer presents open end function
	X	Simplex reversal (4-wire)
IA	-	E.I.A. (25 Pin RS 232)
LA	-	Type A registered port
LB	-	Type B registered port
LC	-	Type C registered port
LO	-	Loop start signaling open-end (switch) function presented by the customer at interface to the LEC access service
	X	Simplex reversal
LS	-	Loop Start signaling, customer presents Closed End Function
	M	CO answering service concentrator
	X	Simple Reversal
LR	-	Private Line Automatic Ringdown (PLAR) with PLAR equipment provided by the LEC
	A	D4 PLAR channel unit signaling format
	B	D3 PLAR channel unit signaling format
NO	-	No Signalling Interface, Transmission Only
	S	Sealing current option for 4W transmission
	X	Simplex reversal (4-wire)
	17	Loopback @ 1713 Hz**
	17P	Loopback @ 1713 Hz and Line Power**
	19	Loopback @ 1913 Hz**
	19P	Loopback @ 1913 Hz and Line Power**
	24	Loopback @ 2413 Hz**
PG	-	Program transmission - no DC signaling
	1	Nominal frequency from 50 to 15000Hz
	2	Non-equalized
	3	Nominal frequency from 200 to 3500Hz
	5	Nominal frequency from 100 to 5000Hz
	8	Nominal frequency from 50 to 8000Hz
PR	-	Connects end-user premises protective relaying terminal equipment to an access service suitable for the one-way transmission of control signals (voice frequency tones) for protective relaying
	31	3/1 mux
	30	3/0 mux
	10	1/0 mux, e.g., D4- or D5- type bank
QB	-	Central Office Manual Cross Connect term. w/o subrating cap.
	11	DS1 to DS1 (May not comply with GR-342-CORE)
	11R	DS1 to DS1 with Regeneration.
	33	DS3 to DS3 (May not comply with GR-342-CORE)
	LL	LGX bay, fiber cross-connection
QC	-	Manual cross-connect DS0/Voice termination
	DXO	Connects a customer to an access service suitable for the transmission of voice using DX signaling

	E1A	Type I E&M signaling IC or End User originates on the E lead
	E2A	Type II E&M signaling IC or End User originates on the E lead
	M1A	Type I E&M signaling IC or End User originates on the M lead
	M2A	Type II E&M signaling IC or End User originates on the M lead
	M3A	Type III E&M signaling
	RVO	Reverse batter originating loop closure provided by AC to the AP; Battery provided by AC to AP
	RVT	Reverse batter originating loop closure provided by AP to the End User; Battery provided by End User to AP
	OOB	GO Ground start loop signaling - open end
	OOC	GS Ground start loop signaling - closed end
	OOD	LO Loop start loop signaling - open end
	OOE	LS Loop start loop signaling - closed end
	OOF	NO Transmission only - no signaling
	OOJ	2.4 Kbps digital service
	OOK	4.8 Kbps digital service
	OOL	9.6 Kbps digital service
	OOM	19.2 Kbps digital service
	OOP	56.0 Kbps digital service
	OOQ	64.0 Kbps digital service
	OOR	Electronic Business Service
	OOS	ISDN Base Rate (2B1Q)
	OOT	Coin - Tone controlled
	OOU	Coin - Battery controlled
QE	-	Field Location Manual Cross-Connect Termination with no Sub-rating Capability
	001	Spectrum Managment Class 1 Signal per ANSI T1.417
	002	Spectrum Managment Class 2 Signal per ANSI T1.417
	003	Spectrum Managment Class 3 Signal per ANSI T1.417
	004	Spectrum Managment Class 4 Signal per ANSI T1.417
	005	Spectrum Managment Class 5 Signal per ANSI T1.417
	006	Spectrum Managment Class 6 Signal per ANSI T1.417
	007	Spectrum Managment Class 7 Signal per ANSI T1.417
	008	Spectrum Managment Class 8 Signal per ANSI T1.417
	009	Spectrum Managment Class 9 Signal per ANSI T1.417
	11	DS1 to DS1
QR	-	Line Sharing, customer provides the non-Central Office based splitter function
	L05	Loop Start Signaling and Spectrum Management Class 5 per ANSI T1.417
RV	O	Loop reverse-battery supervision, customer originating function
	T	Loop reverse-battery supervision, customer terminating function
SF	-	Single Frequency (SF) Signaling within the VF band at POI
SM	-	Mapping for SONET Terminal Multiplexer
	X	Optical bandwidth in 155.520 Mbps increments (OC-3)*
	X	Qty signals at 51.840 Mbps (OC-1/STS-1)*
	X	Qty Signals at 6.912 Mbps (VTG)*
SN	-	Mapping for SONET OC-48 Terminal
	X	QTY Signals Dropped at 622.080 Mbps (OC-12)
	X	QTY Signals Dropped at 155.520 Mbps (OC-3)
	X	QTY Signals Dropped at 51.850 Mbps (OC-1/STS)
SO	-	SONET Optical (transmitter characteristics)

	BU	LR1-SLM*, Unidirectional
	CU	IR1-MLM*, Unidirectional
	EU	SR-MLM/LED*, Unidirectional *see TA-1374
ST	-	Synchronous Transport (electrical OC equiv.)
	A	STS-1
	B	STS-3
	C	STS-3c
	D	STS-12c
TA	-	Central Office Transfer Arrangement
	C	Common
	NC	Normally closed
	NO	Normally open
TF	-	Telephotograph interface
TT	-	Telegraph/teletypewriter interface
	2	20.0 milliamperes
	3	3.0 milliamperes
	6	62.5 milliamperes
TV	-	Television interface
	1	Combined video and one 15 KHz audio signal
	2	Combined video and two 15 KHz audio signals
	4	Combined video and four 15 KHz audio signals
	5	Video plus one (or two) two wire 5 Hz audio signal(s)
	6	Combined video and three 15 KHz audio signals
	15	Video plus one (or two) two wire 15 KHz audio signal(s)
	15A	Video plus one through four two wire 15KHz audio signals
VT	-	Virtual Tributary
	1	VT1 (1.736 Mbps)
	2	VT2
	3	VT3
	6	VT6 or VTG (6.192 Mbps)
WA	-	Wideband bandwidth interface at end user s premises
	1 ***	Nominal passband from 10 Hz to 20,000 Hz
	2 ***	Nominal passband from 29,000 to 44,000 Hz
	8	824-894 MHz passband
WB	-	Wideband data interface at IC terminal location (unavailable on new ciruits after 1988)
	18S	18.75 Kbps, synchronous
	19A	Up to 19.2 Kbps, asynchronous
	19S	19.2 Kbps, synchronous
	23A	Up to 230.4 Kbps, asynchronous
	23S	230.4 Kbps, synchronous
	40S	40.8 Kbps, synchronous
	50A	Up to 50.0 Kbps, asynchronous
	50S	50.0 Kbps, synchronous
WC	-	Wideband data interface at end users premises (unavailable on new ciruits after 1988)
	18	18.75 Kbps, synchronous
	19	For 12-wire interface: 19.2 Kbps, synchronous For 10-wire interface: up to 19.2 Kbps asynchronous
	23	Up to 230.4 Kbps, asynchronous
	23S	230.4 Kbps, synchronous

```
     40        40.8 Kbps, synchronous
     50        For 12-wire interface: 50.0 Kbps, asynchronous
               For 10-wire interface: Up to 50.0 Kbps, asynchronous
WD   -         Wideband bandwidth interface at IC terminal location
               (unavailable on new ciruits after 1988)
     1         Nominal passband from 300 to 18,000 Hx
     2         Nominal passband from 28,000 to 44,000 Hz
     3         Nominal passband from 29,000 to 44,000 Hz
WV   J         Video Interface, VSB-AM RF Wideband Spectrum
```

Resources:

Qwest Communications
Network Channel and Network Channel Interface Code Combinations
Publication 77203, Copyright 2000

Bellsouth Communications
SDI Video Transport Service Technical Reference TR-73621
Rev 1: 8/17/99

Telcordia Technical Advisory TA-NWT-000938
Integrated Services Digital Network (ISDN): Network Transmission Interface and Performance Specifications

QWEST Technical Publication 77375, 1.544 Mbit/s Channel Interfaces - Technical Specifications for Network Channel Interface Codes Describing Electrical Interfaces at Customer Premises and at QWEST Communications, Inc. Central Offices

ANSI T1.223-1997 Information Interchange -- Structure and Representation of Network Channel (NC) and Network Channel Interface (NCI) Codes for the North American Telecommunications System.

[Qwest Network Disclosure #415 (uh-oh!)]

Straight from the source. Dial away.

Arizona LATA 666				
Phoenix Main	PHNXAZMA10W	PSN	X.25 Dedicated	
	PHNXAZMA11W	PSSP	X.25 Gateway	
			X.32 Synch Dial	
			X.75 Gateway	
			Async Private Dial	
			300 bps to 9600 bps	
			Async Public Dial	
			300 bps to 2400 bps	602-256-6237 or 602-258-1505
			Asynch Public Dial	
			9600 bps	602-256-1132
Phoenix North	PHNXAZNO03W	PSSP	X.25 Dedicated	
			X.32 Synch Dial	
			Async Private Dial	
			300 bps to 9600 bps	
Phoenix Northeast	PHNXAZNE03W	PSSP	X.25 Dedicated	
			X.32 Synch Dial	
			Async Private Dial	
			300 bps to 9600 bps	
Tempe Main	TEMPAZMA04W	PSSP	X.25 Dedicated	
			X.32 Synch Dial	
			Async Private Dial	
			300 bps to 9600 bps	
Flagstaff Main	FLGSAZMA02W	PSSP	X.25 Dedicated	
			X.32 Synch Dial	
			Async Private Dial	
			300 bps to 9600 bps	
			Async Public Dial	
			300 bps to 2400 bps	520-779-1206
Arizona LATA 668				
Tucson Main	TCSNAZMA04W	PSN	X.25 Dedicated	
	TCSNAZMA10W	PPSP	X.25 Gateway	
			X.32 Synch Dial	
			X.75 Gateway	
			Async Private Dial	
			300 bps to 9600 bps	
			Async Public Dial	
			300 bps to 2400 bps	520-620-1073
			Asynch Public Dial	
			9600 bps	520-628-9841
Colorado LATA 656				
Denver Main	DNVRCOMA18W	PSN	X.25 Dedicated	
	DNVRCOMA12W	PSN	X.25 Gateway	
	DNVRCOMA15W	PSSP	X.32 Synch Dial	
	DNVRCOMA07W	PSSP	X.75 Gateway	
	DNVRCOMA13W	PSSP	Async Private Dial	
	DNVRCOMA14W	PSSP	300 bps to 9600 bps	
	DNVRCOMA16W	PSSP	Async Public Dial	
			300 bps to 2400 bps	303-573-1800
			Async Public Dial	
			9600 bps	303-629-6925
			X.32 Synch Dial	
			Async Private Dial	
			300 bps to 9600 bps	
Boulder Main	BLDRCOMA02W	PSSP	X.25 Dedicated	
			X.32 Synch Dial	

			Async Private Dial 300 bps to 9600 bps Async Public Dial 300 bps to 2400 bps	303-440-9404
Ft. Collins Main	FTCLCOMA02W	PSSP	X.25 Dedicated X.32 Synch Dial Async Private Dial 300 bps to 9600 bps Async Public Dial 300 bps to 2400 bps	970-498-9903 or 970-493-8936
Greeley Main	GRELCOMA02W	PPSP	X.25 Dedicated X.32 Synch Dial Async Private Dial 300 bps to 9600 bps Async Public Dial 300 bps to 2400 bps	970-356-5110
Grand Junction Main	GDJTCOMA02W	PSSP	X.25 Dedicated X.32 Synch Dial Async Private Dial 300 bps to 9600 bps Async Public Dial 300 bps to 2400 bps	970-945-5047 or 970-241-6072
Colorado LATA 658				
Colorado Springs Main	CLSPCOMA04W	PSN	X.25 Dedicated	
	CLSPCOMA10W	PSSP	X.25 Gateway	
	CLSPCOMA11W	PSSP	X.32 Synch Dial X.75 Gateway Async Private Dial 300 bps to 9600 bps Async Public Dial 300 bps to 2400 bps	719-635-4028
			Async Public Dial 9600 bps	719-471-2252
Pueblo Main	PUBLCOMA02W	PSSP	X.25 Dedicated X.32 Synch Dial Async Private Dial 300 bps to 9600 bps Async Public Dial 300 bps to 2400 bps	719-542-0004
Idaho LATA 652				
Boise Main	BOISIDMA02W	PSN	X.25 Dedicated	
	BOISIDMA04W	PSSP	X.25 Gateway X.32 Synch Dial X.75 Gateway Async Private Dial 300 bps to 9600 bps Async Public Dial 300 to 2400 bps	208-345-9920
Iowa LATA 630				
Sioux City Downtown	SXCYIADT02W	PSN	X.25 Dedicated	
	SXCYIADT10W	PSSP	X.25 Gateway X.32 Synch Dial X.75 Gateway Async Private Dial 300 bps to 9600 bps Async Public Dial 300 to 2400 bps	712-277-0085
Iowa LATA 632				
Des Moines Downtown	DESMIADT03W	PSN	X.25 Dedicated	
	DESMIADT02W	PSSP	X.25 Gateway	
	DESMIADT04W	PSSP	X.32 Synch Dial	

			X.75 Gateway	
			Async Private Dial	
			300 bps to 9600 bps	
			Async Public Dial	
			300 to 2400 bps	515-283-0670
			Async Public Dial	
			9600 bps	515-283-0924
Iowa LATA 634				
Davenport East	DVNPIAEA02W	PSN	X.25 Dedicated	
	DVNPIAEA10W	PSSP	X.25 Gateway	
			X.32 Synch Dial	
			X.75 Gateway	
			Async Private Dial	
			300 bps to 9600 bps	
			Async Public Dial	
			300 to 2400 bps	319-355-6393
Iowa LATA 635				
Cedar Rapids	CDRRIADT02W	PSN	X.25 Dedicated	
	CDRRIADT10W	PSSP	X.25 Gateway	
			X.32 Synch Dial	
			X.75 Gateway	
			Async Private Dial	
			300 bps to 9600 bps	
			Async Public Dial	
			300 to 2400 bps	319-364-0306
Minnesota LATA 620				
Rochester	ROCHMNRO01W	PSN	X.25 Dedicated	
Rochester	ROCHMNRO10W	PSSP	X.25 Dedicated	
			X.25 Gateway	
			X.32 Synch Dial	
			X.75 Gateway	
			Async Private Dial	
			300 bps to 9600 bps	
			Async Public Dial	
			300 bps to 2400 bps	507-285-3520
Minnesota LATA 624				
Duluth Melrose	DLTHMNME01W	PSN	X.25 Dedicated	
			X.25 Gateway	
			X.32 Synch Dial	
			X.75 Gateway	
			Async Private Dial	
			300 bps to 9600 bps	
			Async Public Dial	
			300 bps to 2400 bps	218-723-5000
Minnesota LATA 626				
St. Cloud	STCDMNTO02W	PSN	X.25 Dedicated	
	STCDMNTO10W	PSSP	X.25 Gateway	
			X.32 Synch Dial	
			X.75 Gateway	
			Async Private Dial	
			300 bps to 9600 bps	
			Async Public Dial	
			300 bps to 2400 bps	320-255-8125
Montana LATA 648				
Great Falls Main	GRFLMTMA02W	PSN	X.25 Dedicated	
			X.25 Gateway	
			X.32 Synch Dial	
			X.75 Gateway	
			Async Private Dial	
			300 bps to 9600 bps	
			Async Public Dial	
			300 bps to 2400 bps	406-761-7829
Montana LATA 650				

Billings West	BLNGMTWE02W	PSN	X.25 Dedicated X.25 Gateway X.32 Synch Dial X.75 Gateway Async Private Dial 300 bps to 9600 bps Async Public Dial 300 bps to 2400 bps	406-652-8245
Nebraska LATA 644				
Omaha Douglas	OHAHNENW17W OHAHNENW18W OHAHNENW15W OHAHNENW19W	PSN PSN PSSP PSSP	X.25 Dedicated X.25 Gateway X.32 Synch Dial X.75 Gateway Async Private Dial 300 bps to 9600 bps Async Public Dial 300 bps to 2400 bps Async Public Dial 9600 bps	402-346-1267 or 402-345-8806 402-348-5444
Omaha 84th	OMAHNE8412W	PSSP	X.25 Dedicated X.32 Synch Dial Async Private Dial 300 bps to 9600 bps	
Nebraska LATA 646				
Grand Island	GDISNENW02W	PSN	X.25 Dedicated X.25 Gateway X.32 Synch Dial X.75 Gateway Async Private Dial 300 bps to 9600 bps Async Public Dial 300 bps to 2400 bps	308-382-0574
New Mexico LATA 664				
Albuquerque Main	ALBQNMMA05W ALBQNMMA10W	PSN PSSP	X.25 Dedicated X.25 Gateway X.32 Synch Dial X.75 Gateway Async Private Dial 300 bps to 9600 bps Async Public Dial 300 bps to 2400 bps	505-842-1259 or 505-843-6276
Las Cruces Main	LSCRNMMA02W	PSSP	X.25 Dedicated X.32 Synch Dial Async Private Dial 300 bps to 9600 bps Async Public Dial 300 bps to 2400 bps	505-525-2022
Sante Fe Main	SNFENMMA02W	PSSP	X.25 Dedicated X.32 Synch Dial Async Private Dial 300 bps to 9600 bps Async Public Dial 300 bps to 2400 bps	505-984-2182
North Dakota LATA 636				
Fargo	FARGNDBC02W FARGNDBC10W	PSN PSSP	X.25 Dedicated X.25 Gateway X.32 Synch Dial X.75 Gateway Async Private Dial 300 bps to 9600 bps Async Public Dial	

			300 bps to 2400 bps	701-241-3758
Bismarck	BSMRNDBC02W	PSN	X.25 Dedicated	
			X.25 Gateway	
			X.32 Synch Dial	
			X.75 Gateway	
			Async Private Dial	
			300 bps to 9600 bps	
			Async Public Dial	
			300 bps to 2400 bps	701-224-0085
Oregon LATA 672				
Portland Capitol	PTLDOR6905W	PSN	X.25 Dedicated	
	PTLDOR6906W	PSN	X.25 Gateway	
	PTLDOR6910W	PSSP	X.32 Synch Dial	
	PTLDOR6911W	PSSP	X.75 Gateway	
			Async Private Dial	
			300 bps to 9600 bps	
			Async Public Dial	
			300 bps to 2400 bps	503-242-0930 or
				503-242-1455
			Async Public Dial	
			9600 bps	503-242-1953
Bend	BENDOR2410W	PSSP	X.25 Dedicated	
			X.32 Synch Dial	
			Async Private Dial	
			300 bps to 9600 bps	
			Async Public Dial	
			300 bps to 2400 bps	541-388-8490
Salem	SALMOR5810W	PSSP	X.25 Dedicated	
			X.32 Synch Dial	
			X.75 Gateway	
			Async Private Dial	
			300 bps to 9600 bps	
			Async Public Dial	
			300 bps to 2400 bps	503-364-0038
Vancouver, Wa.	VANCWA0110W	PSSP	X.25 Dedicated	
	VANCWA0111W	PPSP	X.32 Synch Dial	
			Async Private Dial	
			300 bps to 9600 bps	
			Async Public Dial	
			300 bps to 2400 bps	360-694-8127
			Async Public Dial	
			9600 bps	360-694-0423
Oregon LATA 670				
Eugene	EUGNOR5303W	PSN	X.25 Dedicated	
	EUGNOR5310W	PSSP	X.25 Gateway	
			X.32 Synch Dial	
			X.75 Gateway	
			Async Private Dial	
			300 bps to 9600 bps	
			Async Public Dial	
			300 bps to 2400 bps	541-342-2753 or
				541-484-6355
Corvallis	CRVSOR6510W	PSSP	X.25 Dedicated	
			X.32 Synch Dial	
			Async Private Dial	
			300 bps to 9600 bps	
			Async Public Dial	
			300 bps to 2400 bps	541-754-9619 or
				541-758-8016
Grants Pass	GRPSOR2910W	PSSP	X.25 Dedicated	
			X.32 Synch Dial	
			Async Private Dial	

			300 bps to 9600 bps Async Public Dial 300 bps to 2400 bps	541-474-0414
Kalamath Falls	KLFLOR5410W	PSSP	X.25 Dedicated X.32 Synch Dial Async Private Dial 300 bps to 9600 bps Async Public Dial 300 bps to 2400 bps	541-884-5623
Medford	MDFDOR3310W	PSSP	X.25 Dedicated X.32 Synch Dial Async Private Dial 300 bps to 9600 bps Async Public Dial 300 bps to 2400 bps	541-776-7470 or 541-770-2965
Roseburg	RSBGOR5710W	PSSP	X.25 Dedicated X.32 Synch Dial Async Private Dial 300 bps to 9600 bps Async Public Dial 300 bps to 2400 bps	541-440-1479
South Dakota LATA 638				
Sioux Falls	SXFLSDCO02W SXFLSDCO10W	PSN PSSP	X.25 Dedicated X.25 Gateway X.32 Synch Dial X.75 Gateway Async Private Dial 300 bps to 9600 bps Async Public Dial 300 bps to 2400 bps	605-339-0126
Rapid City	RPCYSDCO01W	PSSP	X.25 Dedicated X.32 Synch Dial Async Private Dial 300 bps to 9600 bps Async Public Dial 300 bps to 2400 bps	605-348-1070 or 605-348-8824
Utah LATA 660				
Salt Lake City Main	SLKCUTMA06W SLKCUTMA07W SLKCUTMA08W	PSN PSSP PSSP	X.25 Dedicated X.25 Gateway X.32 Synch Dial X.75 Gateway Async Private Dial 300 bps to 9600 bps Async Public Dial 300 bps to 2400 bps Async Public Dial 9600 bps	801-363-8126 801-363-1260
Ogden Main	OGDNUTMA03W	PSSP	X.25 Dedicated X.32 Synch Dial Async Private Dial 300 bps to 9600 bps Async Public Dial 300 bps to 2400 bps	801-393-0187
Provo Main	PROVUTMA02W	PSSP	X.25 Dedicated X.32 Synch Dial Async Private Dial 300 bps to 9600 bps Async Public Dial 300 bps to 2400 bps	801-377-9564
Washington LATA 674				
Seattle Main	STTLWA0605W	PSN	X.25 Dedicated	

	STTLWA0606W	PSN	X.25 Gateway	
	STTLWA0609W	PSSP	X.32 Synch Dial	
	STTLWA0610W	PSSP	X.75 Gateway	
			Async Private Dial	
			300 bps to 9600 bps	
			Async Public Dial	
			300 bps to 2400 bps	206-343-0319 or 206-622-1487
			Async Public Dial	
			9600 bps	206-622-2377
Bellingham	BLHMWA0110W	PSSP	X.25 Dedicated	
			X.32 Synch Dial	
			Async Private Dial	
			300 bps to 9600 bps	
			Async Public Dial	
			300 bps to 2400 bps	360-671-5062
			Async Public Dial	
			9600 bps	360-671-9509
Olympia	OLYMWA0210W	PSSP	X.25 Dedicated	
			X.32 Synch Dial	
			Async Private Dial	
			300 bps to 9600 bps	
			Async Public Dial	
			300 bps to 2400 bps	360-943-5225
			Async Public Dial	
			9600 bps	360-943-0731
Tacoma Fawcett	TACMWAFA10W	PSSP	X.25 Dedicated	
			X.32 Synch Dial	
			Async Private Dial	
			300 bps to 9600 bps	
			Async Public Dial	
			300 bps to 2400 bps	206-627-2538
			Async Public Dial	
			9600 bps	206-627-2504
Washington LATA 676				
Spokane	SPKNWA0103W	PSN	X.25 Dedicated	
	SPKNWA0110W	PSSP	X.25 Gateway	
			X.32 Synch Dial	
			X.75 Gateway	
			300 bps to 9600 bps	
			Async Public Dial	
			300 bps to 2400 bps	509-455-8013 or 509-456-0273
Pasco	PASCWA0110W	PSSP	X.25 Dedicated	
			X.32 Synch Dial	
			Async Private Dial	
			300 bps to 9600 bps	
			Async Public Dial	
			300 bps to 2400 bps	509-545-3611
Yakima	YAKMWA0210W	PSSP	X.25 Dedicated	
			X.32 Synch Dial	
			Async Private Dial	
			300 bps to 9600 bps	
			Async Public Dial	
			300 bps to 2400 bps	509-457-3121
			Async Public Dial	
			9600 bps	509-575-3877
Wyoming LATA 654				
Cheyene Main	CHYNWYMA02W	PSN	X.25 Dedicated	
			X.32 Synch Dial	
			X.75 Gateway	
			Async Private Dial	
			300 bps to 9600 bps	

			Async Public Dial 300 bps to 2400 bps	307-638-9736
Casper Main	CSPRWYMA02W	PSSP	X.25 Dedicated X.32 Synch Dial Async Private Dial 300 bps to 9600 bps Async Public Dial 300 bps to 2400 bps	307-235-6143

[The Mindset: afterb1rth]

October 12, 1997...

```
<mstake> b1rth, did you setup the c0nf or not?
<b1rth> no
<mstake> you faggot
<b5_> afterb1rth can't even get dox, you expect him to setup a conf?
<b1rth> b5_: fuck off.
<mstake> why the fuck is there no conf?
<mstake> i demand answers.
<b1rth> i got chased by cops!
<mstake> rofl
<b1rth> i did get some sweet docs though
<mstake> that doesn't make any sense.
<b5_> sure it does, if he was trashing instead of setting up a conf.
<mstake> i guess.
<b1rth> er, yeah.
<b1rth> i'm typing them up right now.
<mstake> what is it?  equipment manuals?
<b1rth> i'm not sure.  stuff i never heard of before.
<b1rth> it's pretty l33t
<b5_> dcc asap.
<b1rth> does anyone know what FAST is?
<jdog> yeah.
<b1rth> it seems pretty rad, i've got a manual on how to use it.
<b5_> gimme.
<mstake> you should let me put it in the next issue of GPA.
<b1rth> i dunno.
<jdog> dcc msg me.
<b1rth> my mommy says i have to go to bed.
<mstake> your mommy!
<b5_> b1rth, you need to smack her upside the head.
<b1rth> laterz
```

Greg closed mIRC, and disconnected from the internet. He began ruffling through the papers he had trashed earlier that evening. Everyone wanted them, it seemed. He didn't really want to share.

Greg thought they should find their own shit. He found the page describing the FAST. He looked over it again. There was a number scribbled on the back-side of the paper. He didn't know what it was, but he was sure he would find out.

Maybe he would write something about it for mstake's lame zine. He wasn't sure. He took some notes in a small pad of paper and picked up his jacket. It was time for him to go figure out what this thing was all about.

The weather was cool, he strode out towards a nest of payphones, armed with his redbox and his notebook. He felt electric. He felt on fire.

[Editorial/Rant]

Yeah, there you go. Almost two years late, there is a second issue. It's mostly just been sitting on my laptop waiting for me to work on it. Basically, both lanterndog and myself put it off until one of us gave out and actually pieced it together: I lost. We're sitting in his apartment finishing it and if you have any complaints you may attempt to say something but most likely I won't listen.

On a side note, I guess it kind of sucks to see k-1ine come to an end, so kudos to theclone for his effort all these years. I will admit to agreeing with his decision.

Lined up for issue three:

Network Carrier Codes (massive compilation)
Some code of some sort to entertain you.
Cloning software for the IC-R3
(Maybe) some PCR-1000 crap
... and whatever else I find laying around. Don't get too excited.

-lawg

Shoutz: multiplx, ticom, Hugo Chavez, weev, the entire 920 area code, the clone, bellsouth field techs, AT&T customer service, Voicepulse, FreeBSD developers and Guinness.

Gayz: Everyone else. Especially anyone who makes money off security.

```
begin 755 word.mp3
M240S`P`````/=E1)5#(````+````4F5D<75A<G1E<E1,14X````$````,S8U
M5%)#2P````(````P5$-/3@````8```!/=&AE<@``````````````````````
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MZ*57^8T`$"R`8X<````I1:JNNEW)90N7#]`_DZIF`@*XCJ[X>+V&(@011<]>
```

M/3A(#,TQWG:074,`#6<'#=Y(12QLI<,NV[19\NVT^UA7?]RW?AR68RN7]I+T
M-KL7111N7W'8AR/K",LHJ>W4CLQCLYON%)28?S]<_]84]ON&&\\ZD;E_<,
M-T]O4;E_<.;I[?<___SSSP_____/##]]_#FZ0,-$!P$,$/4?Y<_7#X$P%(%
M```````'X'!X7"#'U8&`Q!\O0?6FPE6VGB)>P&E?A?+?THB8G#0E]3S/AT`
M9>VUHXCX'(1@:=\&E@#1!UF*M:6:?35FGQ.EPNV/_XO#C_T,QCS>^;__Y-RF
MMC2VO_]?___Z^Q>MV`3'"MJ%@9`P#UVK6A`$"XJ+%1ZVU65NH,N4OL4"0!__
M___]*V_[X\#?__0$EX6@`!S35KTNI%8SH/$8T"I!H5`_3^D!;/!E@R&%@"!F
M+M?`H@,!ZHR0%`P#&!0(QZE?V]I^N]+FK%/Q(ZEV^3H&(58V__N28"2``CL3
MT^]+@`P```EPX``!$E"?58?MZ7@``"7````$XV22^FQ"'ISJ90(M:)PD2:`T
M#16101W5K`@((`Q!578\8`*&!1YJ",821@X6`@H(`$R84-10Q+],1`R1!T
M$S01<%,"`!ADN#D*,VR"*40`5\ZAP&&EC07U6GVYP8X41_:)`S/`S/`K'AVB
M0[1,I)"R,9,UNS6KLI)CV?_]V:U[.%RR/7P`>"61SLX785D+,KK9&B27-8V`
MI#2)^"=*(>0,$6`0X68AX&5LC-D36B,>1Y?M%$0@0GE!3&`<*3$,X@J@+A&@
M!P@`=/14368I#HG0H@+H^`ZA@F()L'<#^"]+X28E*@,HW5>`BBS%J+B?!YF2
M79.'$;J@,HW5`91/5&7%)(XY5(CDZP184=[)/!$E44Q5#*22@4I)+*317.8E
M-2RFL8R\<D2(*J5NK:!P."G(.)N)N0M/%L"/A(Q_MPK@#H#D)(7<Q$`2$K):
MP]4Z[W?:?.?$U;V5J!J#O.P`LN7'5W3.PY#N3E=(1(A=#\8RN&XW+['*>-P_
M&[=R&/_[DF!V@`2H+%-I^'K>```)<````1-I`2^T_``(```EPH``!&=N_/S#
M6&N.Y9=M4BQ'XNNVUMRY^&'+<N+Y2B,1BQ7AB')9ANGI[?YYYY___AG_X888
M?GAAS>>>?<*?,\`$1`#H>\/``6`($'$1$1$0)Y/)Y62R(0!I^+Q5A:CB&`%]
M%Y0%))@Q!3SA9<GJN:4B`HF?S:%AJ9=;`@!APY*AA;-/I,S2(1TC&Z#H/%(P
MP)3=94*!88"`Q,*C`0`=T!`%D+V+FG__T1%*V;L3>J`H&=&9ENNXXX-,@"*N
M/#,CCVJ:[]77>_ER'(M#E>31N_CCJFR[5UWFO_DOF)RDJR^[:I*MF55K57>.
M'_____\JG*>=C>I^47I9-_K++=7'E;++___WO__4_3UI9<O4]FWA:I-V*^T,
MZ@0`/_____S\3[#85@$NV0``+62=;KWY'@&X+I`=@@:@0R`H"&$8L&C8LJ9-
M;@=*`P$#LQ2A\R3!$.`4P&`M)FF=J>NNKCZ&FZ?1W;=-();;8@278VB@_$L6
M67;(``$@(SS5!`BASBF-8=S_^Y)@G0`&@%?4_F>`!`C@"-'````(D$]+O1Z`
M,```)<.```0Q@,-@H9F#A4I`+@,.!:TU[@P(&$`"<%;`L8#!8K,&A$P()#(H
M;,\+`VV"3!0.,0`@1@\'!\OH704,.(0`L@ZL`'"R`%)(@P(`+O')<$2FZ^!A
MC42+FF:*F\#CV>,D:6][6):[]!`\0D$-RY_)2[]`_<<BD3D<,44-WXW31BK+
M[EBO;I\J3=NI8K]KY4F-O5BO;K]J<!X(A<++[-[UX#03(-N>M*":-K9&@`7=
M:T`X""9'(1!2M2V!PAP*&J6I?D+D7\@)3P+_,/!`Y.CRH8+"`A4C"_2\4<08
M-!@H$7A&$!DE\I6K*;T`H#E"`8D%`4ETI2OT`/%JF-B$9D*G0`A+#EM6?@**
M=R(R:+5E`G?5*V%DK`GO7:_BIGW4%;"KENS;-)<UE3WK"QMB,0=ZA?F/2*&;
M<9I)=5G951TN=+A:W9K7ZO:O*V8*!4&7&DVLKQX2R1$M)V.(`3M=G;KMT!@`
M``O@H>:D"0$!:F[=@`@R&!Q$WS=`V`9JB>:0LF`A__N28,T`!A(X4^L\RMP`
M``EP```!%33C2ZQC"W```"7````$`4AL)B,9`(*0E:9<,LVGVJH9SFT;'D>$
MB'Y2_3#;(<9F\JSV`+$AE0-3=Z"RZ=<#S$LQE<ON.V[]/W##G_^>>?<*2QG&
M+&[>=2,2RN_D4Y7MW(Q+-QBDYGGJQANDI.9YZPPSI+'\,`HD@`#00(I.)I22
M2))A42J>;S8,]4U3<UHLUH`P<"JF<RN9LK63EK.],D%.#ELCXH:A8$C"$"3L
M<"#!P-SJY$@$*!ILAAFL2Q@N<IP&TIE@*IA<0QQH((\5QB\$!B"`I@`"A@T`
MBE"1I:UIK>?_A`'O$NA!>%MQ4%8C'6<XZWOXPL=Q^N6Y:$FA8:D+E`.]_O_?
MMTU3M/C+#VGK"RJNX,JGHCO___^#G;<=U(^_;B59>Z3C5X":]#T2<IRO_7_E
MK>2FD"4[$'$L.PUR*1QK$T[36M0TUK&:=JKAW_U____M^)<[#\0N&'X?N8BC
M]VJ1WY^&IFS-3,MY,QFEJQF,[E/___0`0!_______ZD@V&VL`)8HC``7:?_[
MDF#6``2G/$AM8P``!>`)!*```1^M>T^YGH`0)0`CAP```#K>INHV`](`6@"Z
M1]?1@$#&'UX8Z1)B@"IP*H$02,!CXT/^@5<%)`$#)!<?60UGF]O^OH_Z&>A^
MWKJ``(``'HMVVC))FLC2#3&L0<C>9$.2BC1)A9*:%B<(X"7)V:Z%1@P,&$@(

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M*@4P>"U"BYX0`PL"C$"R.5APPP*#$`417,*B$Q@`C*[+-?!IEI@\,A`?2,+,
M.:EX;@D#4)KT8*#&6/`Y("1YDPYEDISYXU?-`X-D4$)LU)\LT98H/(R]B5C,
MTZX"6)#+.X%8?![@.HZ;+X\Q"+,,>1TW'DC7):[<(AN'Z!_+,-WY1/U)97I\
MJ3&GO4\_4EE6GM4ENI2;I^TE[.QL\P>)@1\$;)XB>7#/CO__WK/:VQH`%WZQ
M@/XK<6>2Z31+:LX`)@Y0706B66A):B%2)K*&@`=&I2K2`3%[P-5+92YQP*09
M&&103"YD$I:%K"*SR@%QM`O,P!5:ADE<STWJ3K,C0QHC$`E,#+8L55M.0QE!
MO$CN9`KL+E,O1.;_^Y)@Q``"(A/2[TN`#`5`"-3@``$:4.]1K7-+>```)<``
M``2N754B@*0'**EV64%_6.E[D<E%2XKD(2E_/L[T==VD?ZCAF6S,MFI==EM2
M-7Y5+IF6W(U;E,[5EMR79QF]6EURFV:-%1845$4*FC8O_________________
M_____________________________________________________________^%
M=-9+K(T0`+/=[AMAZ*ZQ[<33G17@=50P&,0BWC80`(#$3HF4>RRY:=9X(,?_
MG=*SBU`*`XH-"!CN,673#D3@+"+$:Y((;78RR02MRVON_/RAK</VZD8C$LPK
MQB,6-T]/3W\)?+\]85,.;J`'0_P\.21@`;AWG(=F)@,!9121))A=3K<CK8,3
M$S$P\P$8,=(&(NJK]$PRL^,**V1/$@I)3-$$UJ!AYN)A`*1C\.QD^H!X'98$
M&4P->(R2"XUG0LR1!\Q64([<OXTC-0PW/$]3*\#(Z7$,%0'+QI7F(H:`P#S!
M0$3`H"5Q__@($$`BE@*`-(M(XM,@\Z*Q__N28/4`!X$\4VL8PNX```EP```!
M#?2E([6,`"@E`&32@``%?RWO%:Z`!01IB8:[P<`K/D'G'EUFYE:JU;*L9<1%
M1DB1:IW73V:RUDO:K<H$#0`K5K]6K>K%X$'&:*G7?`\,/Y>4I15!``J5(K%J
MEHHJEP==WOFO[\@OQA7;EN.@HL(P0N.F.M)(9"4R%4J@+I+N7=`+7=\UEW>_
MU_OVL1G#\+'9V_;$&</PQ-RXNY#N.[-/]+MTM3'<1IJ9]I3&?Z/_Z/______
M_____________________________\?PE.;6@`!:R3K=7:D*<`R;`.$.S
M'6(W0H5CG@7,3`L$`=":@,,%$LUIRPS;1@"!D,#LI;LVT1A+_6C_KTQ36+MO
M\R2IK(T@VC*"RBK`:&F,CIBH"%A@V1F.!3S#2XW:F-B5AY@--<3!0D."T,"W
M8.`UCF#9!C=*))ZQ#&!`Q@:$D<T3X.W(S"P$P<*,>'#&A0B!"ZY@P$94(%4/
M,A*3(Q-#8P@4,4#$(#+/#F1C7!@"A-BQ-&)(!!FCAE@B-Q<!*__[DF#_@`GH
M7M)N;Z`$```)<,````@435.]+@`P```EPX``!"`5`VGP0NQ^(`9Q)G#:_/.`
MSB0.PSB0/NSN1Q!R(I,.Q%)M_Y?4C%BI++U>7]J4G*2DY3R_M)+.5*3E>G[4
MI.:I/#^&0,W@&!@?PS#WZ__U]K9&22[]I`$`BAA`)0&(NX0T!9(:!5!2CI3V
M,)`$IC8$&:$TZP)D*2,/;!Q9P&[B"(U1$2CRA6<!11]?14RQJ(&@`1E?,A15
M8+!2@0&2O@PD`QFAH\H`7M8$NU/$*@,H%G)4H`7<1.72]20RUFPH25JL^+O,
M%;LD,G5`:@*N8@IDRV4,.8E/N"XM([4.U'^BU=_9;-1JS6EUK&ELUI59U36M
MTMG5-CJFRWCCJLB&Q6`D*;!80"[K=MM(VD``Z^_`9$XH-/)GZCA#X"\``N1-
M"P*<MZ%GX(0/Q)@I`Y%:2LTT+CZU2)3WAOW_OO%,WO'X_\P_-XC,\?_A^WT>
M>?_CP42"00@3(NO4V@&`LEE(I$HFHYJMR..!CX,`C'T`S44+*M($@!G1@269
M.H)DIRG_^Y)@_X`&ASQ4:WO2[@``"7````$6D/U3I^,+N```)<````2.&!DP
M$:&,&43+=A0',#(%`P7`-C#K)&,8(D,P*05S2K``3U,)H%`"@>F'Z*N9BIV)
MA3`,B,,PSNANC"C`*,#L`TON8!8!HD`68&X,1@)`3BP"!@'@1#0"$-6Z!$\M
M.K]0-(L"`#J:&`"`<CRTA*IUV--*EZ79:<MNS<O&BF"0`F&M@+_.R]2VF51=
ML3[2]7Y@#@!@H`-OS`#`!+YPL`@!.RL$6REJTD'J"MG<R[H#`!IUT9:-:^1=
MMI^J0*@``(`:/%NBUSQ%UD-O_____9@$@!J_C`"`+:'#@*`'<Y^"W[]-R+_*
M7,B0E+^9$BLYS`DQO_?_O?[Q^6,OII8X\U%"H(H_<Q%(O*%GEY@$`$NLO,6
M:8>@*+C+S0%(+,+0R1^_H-OAJP"G1(``%VDZUU+_(8!A(6N@:*)C0H"3``),
M4($W4<%.49D/!8!F"28;=R!O(&KE)`<$!IVFQM-AJ#P#XW_HIT(3T_______
M_____________________________N28/N``E(;2>T]X`H*`!CDH``!*-%[1[F_
M`!```"7#````_____________________________________________________
M_______]VWU0),UD:09HU@``AA0<8<%"P`#1$R4U-_<SC&@#'A@9:8C&9C\AF
M11V\["SBITARRZ(1UI3F*Q*8I"IB$(F$0F)"TQO337PD,+!0Q$"BWC<2_Y<
M<NP:PDD*8TV:5.:4^9,*O8LX=FJ=..;4Z7&,HF-<P-4@`2!GIAAA:1%"$LK3
```

```
M'77/.PQ-K]&^C#&(12)L[70[EEVV'M?B]`_C7X?ORA_(<G*\;C%C=/&Z?5)+
M)?VI&(Q8W*Y?+.5Z>GM_24EM(`>'LA[P`R`(S#_#_0?0[?[?^M[;(B27=M&P
MRH:7D+4*\"F`A!A'.`O`.P!$C\^X4%2]150=KM),!$'4F3$;Y3!P(*81IIL!
M4TX&4"28Q=9`$H,ZUPMT80%HEK02IBBJH*6^4=`!3,4%!9*W)"4@&8B_"<R`
M90:%.BL*Q&C?5AK782P(O\7B3JF$YB[R13S.BD*BJO_[DF#M``0G$U+O2X`,
M```)<.```1J$[4^M\TMX```EP```!)K1N"J5=,"QYK3.G>PAIVHM7AE_8=Y5
ME,MQK2J-4V=:54V6-+2V>8TIL(;&.Q%<!?"GY'=-Y_V\W[_E_____________
M_____________________________________________________________
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M1(```/_____________________________________________________
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M^Y!@_X`+QSO4Z?G"W@``"7````$`A`$H@```(```)<````3_____________
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end
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