





```
#####  
#####  
#####
```

1. #####.
2. #####.
3. # #####, #####® #####(1), ##### y  
#####. #####. #####. #####. #####.
4. #####. ##### 93% (6,7) ##  
##### (7.18), ##### 29% (2.1) ##  
#####.

```
% tcpdump -c 4000 -s 10000 -w ipsecdemo.bin  
% uliscan ipsecdemo.bin
```

```
Uliscan 21 Dec 98  
L=8 256 258560  
Measuring file ipsecdemo.bin  
Init done  
Expected value for L=8 is 7.1836656  
6.9396 -----  
6.6177 -----  
6.4100 -----  
2.1101 -----  
2.0838 -----  
2.0983 -----
```

#### 4. #####

##### kan ## ## ## ##  
format, #####. ##### kan ikke #--  
##### (#####).  
#####  
#####  
#####; #####.

#### 5. #####

#####4; #####6. ##  
## (#####).  
#####; #####; #####  
#####.

##### ## #####

6. ##### ## #####

#####  
#####.##### IPSEC#####  
##,#####  
#####(8)#####.

```
## ##### ##### ## ## ##### ##### ## ##### ## ##### # ##### #####.
```

7. ###/###/#386/####/#####

#####  
#####  
#####(1). ## ##### ## ## #####(8) #####  
#####, ## #####.

device bpf

8. ##### (### ###  
#####-8 ###)

## #### ##### ##### ##### ## ##### ##.

```

/*
ULISCAN.c  ---blocksize of 8

1 Oct 98
1 Dec 98
21 Dec 98      uliscan.c derived from ueli8.c

This version has -// comments removed for Sun cc

This implements Ueli M Maurer's -"Universal Statistical Test for Random
Bit Generators" using L=8

Accepts a filename on the command line; writes its results, with other
info, to stdout.

Handles input file exhaustion gracefully.

Ref: J. Cryptology v 5 no 2, 1992 pp 89-105
also on the web somewhere, which is where I found it.

--David Honig
honig@sprynet.com

Usage:
ULISCAN filename
outputs to stdout

```

```
#####  
#####  
#####
```

```
*/  
  
#define L 8  
#define V (1<<L)  
#define Q (10*V)  
#define K (100 *Q)  
#define MAXSAMP (Q + K)  
  
#include <stdio.h>  
#include <math.h>  
  
int main(argc, argv)  
{  
    int argc;  
    char **argv;  
    FILE *fptr;  
    int i,j;  
    int b, c;  
    int table[V];  
    double sum = 0.0;  
    int iproduct = 1;  
    int run;  
  
    extern double log(/* double x */);  
  
    printf("Uliscan 21 Dec 98 \nL=%d %d %d \n", L, V, MAXSAMP);  
  
    if (argc < 2) {  
        printf("Usage: Uliscan filename\n");  
        exit(-1);  
    } else {  
        printf("Measuring file %s\n", argv[1]);  
    }  
  
    fptr = fopen(argv[1],"rb");  
  
    if (fptr == NULL) {  
        printf("Can't find %s\n", argv[1]);  
        exit(-1);  
    }  
  
    for (i = 0; i < V; i++) {  
        table[i] = 0;  
    }  
  
    for (i = 0; i < Q; i++) {  
        b = fgetc(fptr);  
        table[b] = i;  
    }  
  
    printf("Init done\n");  
  
    printf("Expected value for L=8 is 7.1836656\n");
```

```
#####  
(### #####=8 ###)
```

```
run = 1;

while (run) {
    sum = 0.0;
    iproduct = 1;

    if (run)
        for (i = Q; run && i < Q + K; i++) {
            j = i;
            b = fgetc(fp);

            if (b < 0)
                run = 0;

            if (run) {
                if (table[b] > j)
                    j += K;

                sum += log((double)(j-table[b]));

                table[b] = i;
            }
        }

    if (!run)
        printf("Premature end of file; read %d blocks.\n", i - Q);

    sum = (sum/((double)(i - Q))) -/ log(2.0);
    printf("%4.4f -", sum);

    for (i = 0; i < (int)(sum*8.0 + 0.50); i++)
        printf("-");

    printf("\n");

    /* refill initial table */
    if (0) {
        for (i = 0; i < Q; i++) {
            b = fgetc(fp);
            if (b < 0) {
                run = 0;
            } else {
                table[b] = i;
            }
        }
    }
}
```