

Content-Aware Device Benchmarking Methodology/Terminology

(draft-ietf-bmwg-ca-bench-meth-01)

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Mike Hamilton
mhamilton@breakingpoint.com
BreakingPoint Systems

Previous TODO List(Taipei)

Malformed Traffic Algorithm

Protocol	Header Field	Malformed %
Total Frames		1%
Ethernet		
	Destination MAC	0%
	Source MAC	1%
	Ethertype	1%
	CRC	1%
IP Version 4		
	Version	1%
	IHL	1%
	Type of Service	1%
	Total Length	1%
	Identification	1%
	Flags	1%
	Fragment Offset	1%
	Time to Live	1%
	Protocol	1%
	Header Checksum	1%
	Source Address	1%
	Destination Address	1%
	Options	1%
	Padding	1%

Malformed Traffic Algorithm

UDP			
	Source Port	1%	
	Destination Port	1%	
	Length	1%	
	Checksum	1%	
TCP			
	Source Port	1%	
	Destination Port	1%	
	Sequence Number	1%	
	Acknowledgement Number	1%	
	Data Offset	1%	
	Reserved(3 bit)	1%	
	Flags(9 bit)	1%	
	Window Size	1%	
	Checksum	1%	
	Urgent Pointer	1%	
	Options(Variable Length)	1%	

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Malformed Traffic Algorithm

```
while(more_packets){
  if(random() <= total_malformed_percent){
    for each (header){
      if(random() <= bad_header_precent){
        header_value = random() & header_length
      }
    }
    send_packet();
  }
  else{next;}
}
```

List Resolved Questions

- Traffic Composition
 - How to define a single protocol within the mix
 - Algorithmically
 - Malformed traffic
 - How to define
 - Open-source TCP/IP/UDP(sic)
- Comments from (before) IETF 82

Markov-Pseudo Code

(Brian Kernighan/Rob Pike)

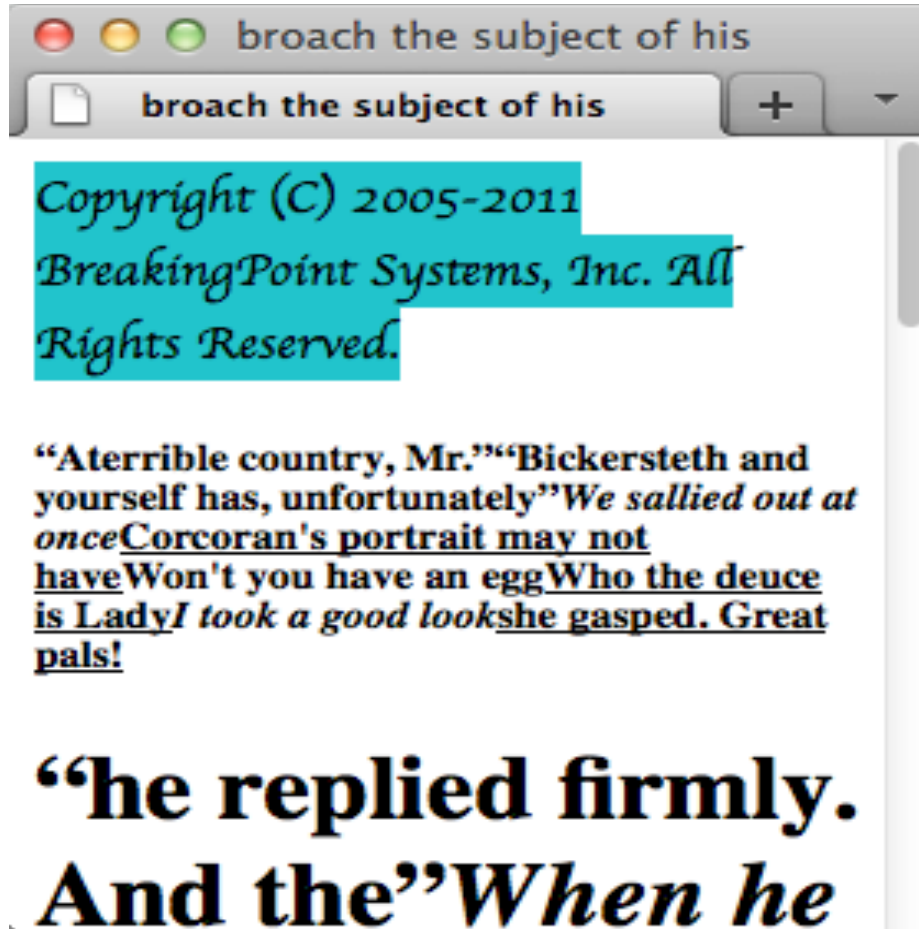
```
$MAXGEN = 10000;
$NONWORD = "\n";
$w1 = $w2 = $NONWORD;      # initial state

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open FILE, "<", "corpus.txt";
while (<FILE>) {           # read each line of input
    foreach (split) {
        push(@{$statetab{$w1}{$w2}}, $_);
        ($w1, $w2) = ($w2, $_);    # multiple assignment
    }
    $w1 = $w2 = $NONWORD;
    for ($i = 0; $i < $MAXGEN; $i++) {
        $suf = $statetab{$w1}{$w2};    # array reference
        push(@{$statetab{$w1}{$w2}}, $NONWORD);    # add tail
    }

    $w1 = $w2 = $NONWORD;
    for ($i = 0; $i < $MAXGEN; $i++) {
        $suf = $statetab{$w1}{$w2};    # array reference
```

Markov HTML



Markov Email

Received: gmail 1913 by uid 1439; Sun Jul 18
17:01:37 -0500 2010

Message-ID: <D9Z8gCegqNijCM1X@example.com>

From: sender@example.com

X-Mailer: Microsoft Outlook Express 6.00.2800.1158

Date: Wed Jan 12 01:44:03 -0600 2011

Subject: haven't you any scheme up

Better go and see what that is, Jeeves. I'm
an optimist. I wished I could have. Nothing

Next Steps

- Work left to do
 - Further define the traffic mix specification
 - Finalize algorithm for application traffic generation