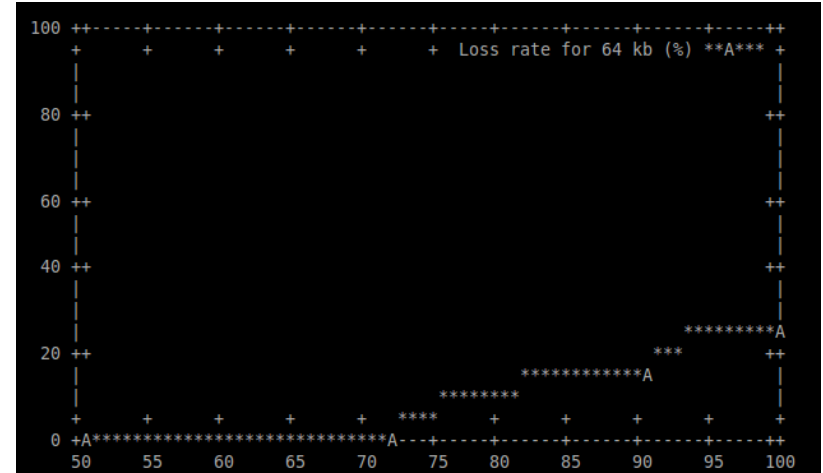
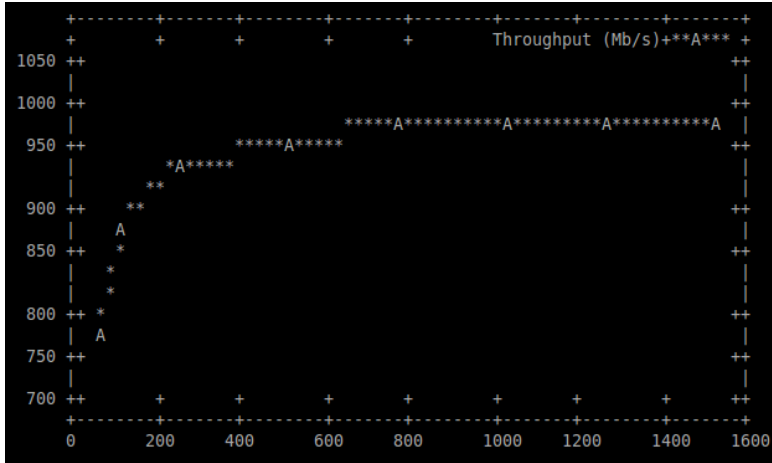


RFC 2544

Desenvolvido

Interface Atual



LATENCY TEST

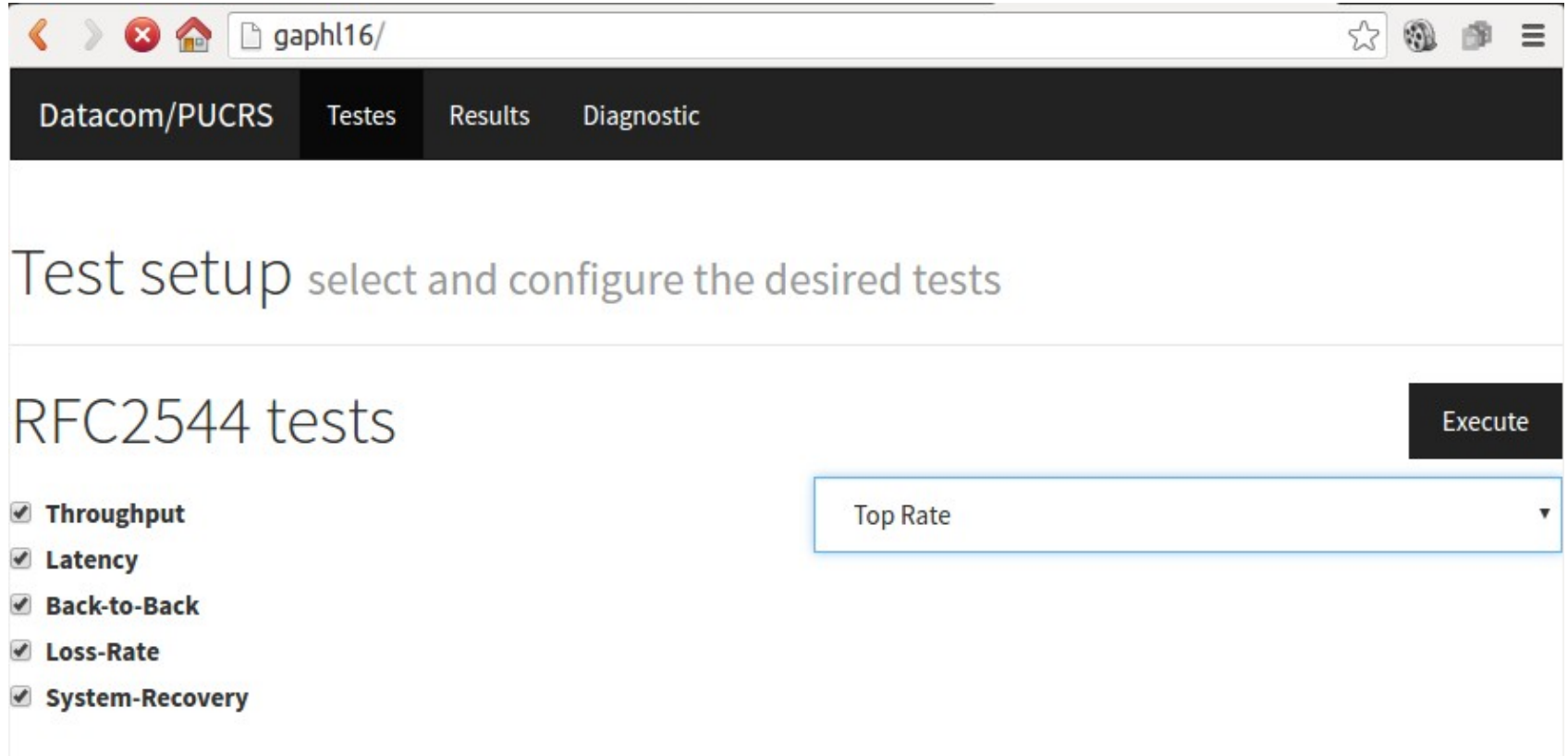
Frame Size(KB)	Rate(Mb/s)	Media Type(Mb/s)	Latency(us)
64	761.905090	1000	6.659840
128	864.865479	1000	7.459521
256	927.536865	1000	8.641280
512	962.406799	1000	11.044160
768	973.631653	1000	13.561600
1024	980.843750	1000	16.013760
1280	984.010742	1000	18.453760
1518	985.715210	1000	20.300480

BACK-TO-BACK FRAMES TEST

->Values greater than 1000000 packets were NOT tested

Frame Size(KB)	Maximum Packet Count
64	1000000
128	1000000
256	1000000
512	1000000
768	1000000
1024	1000000
1280	1000000
1518	1000000

Interface web



The screenshot shows a web browser window with the address bar displaying 'gaphl16/'. The browser's address bar includes navigation icons (back, forward, stop, home) and a search icon. The page has a dark navigation bar with four tabs: 'Datacom/PUCRS' (selected), 'Testes', 'Results', and 'Diagnostic'. Below the navigation bar, the main content area has a heading 'Test setup' followed by the text 'select and configure the desired tests'. Underneath, there is a section titled 'RFC2544 tests' with a list of five test categories, each preceded by a checked checkbox: 'Throughput', 'Latency', 'Back-to-Back', 'Loss-Rate', and 'System-Recovery'. To the right of this list is a dropdown menu currently showing 'Top Rate'. In the top right corner of the main content area, there is a black button labeled 'Execute'.

gaphl16/

Datacom/PUCRS Testes Results Diagnostic

Test setup select and configure the desired tests

RFC2544 tests

Execute

- ☒ Throughput
- ☒ Latency
- ☒ Back-to-Back
- ☒ Loss-Rate
- ☒ System-Recovery

Top Rate

Interface Atual

SYSTEM RECOVERY TEST			
Frame Size(KB)	110%%Rate(Mb/s)	55%%Rate(Mb/s)	Recovery Time
64	838.095599	463.157907	731.824646
128	951.352026	523.809540	1309.190430
256	1020.290552	550.000000	2474.026123
512	1058.647479	550.000000	0.000000
768	1070.994818	550.000000	0.000000
1024	1078.928125	550.000000	0.000000
1280	1082.411816	550.000000	0.000000
1518	1084.286731	549.927557	0.000000

Nova estrutura de projeto por scripts

- `make all` -síntese e implementação (gerar o .bit)
- `make synthesis` -síntese lógica e placement
- `make implementation` -implementação e gerar o .bit
- `make debug` -síntese, implementação e injeção do bit
(abre o trigger setup)
- `Macros de MARK_DEBUG no RTL` -garante que sinais serão exibidos no chipscope ao executar `make debug`

CRC no Payload

CRC de 32 bits

Adicionado ao final do payload para verificação dos dados



Teste de Vazão por Tempo

Controla teste de vazão por tempo (--timed-throughput)

Tempo de duração é um parâmetro

```
$ ./RFC2544 --timed-throughput --timing 60 --pktlen 512
```

Unidade de tempo: segundos

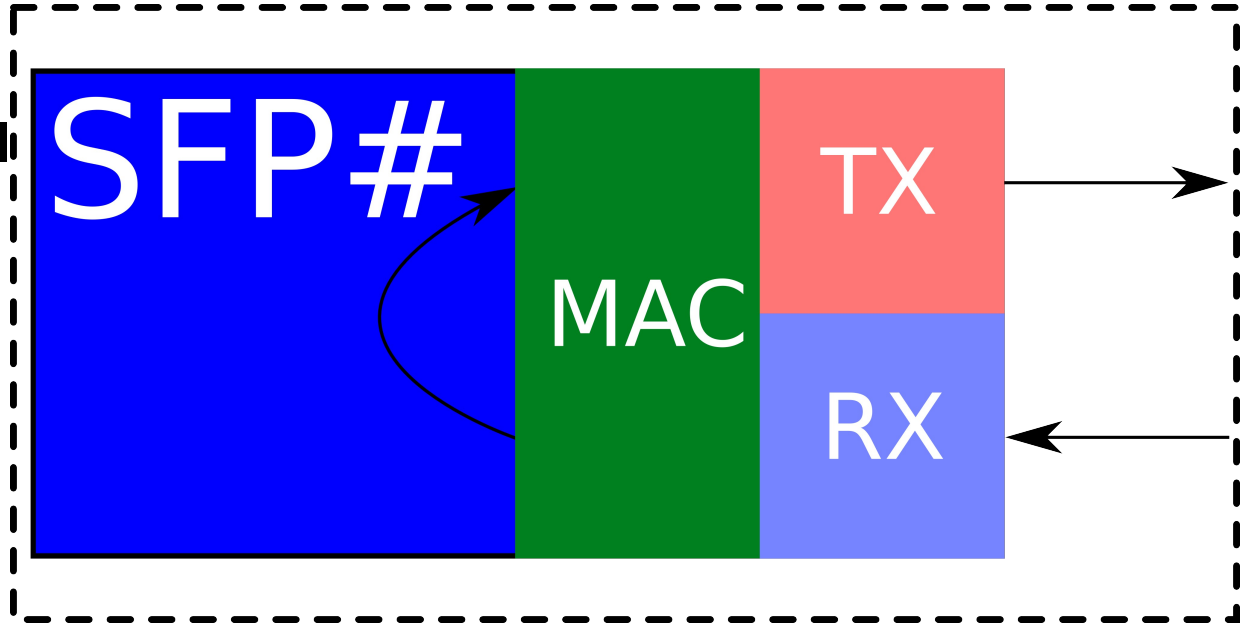
$$NPKTS = \frac{Tempo}{\left(1 + IDLE + \frac{TAMPKT}{8}\right) \cdot 6.4 * 10^{-9}}$$

Loopback

Teste que ativa uma porta em loopback permanentemente

Disparado via software (--loopback)

```
$ ./RFC2544 --loopback --sfp2
```



Cálculo da Taxa de Vazão

Calcular a taxa de recebimento do throughput

Leitura de um registrador gerado em hardware que conta os ciclos entre os pacotes

Cálculo da taxa propriamente dita é feito em software

Trabalhos Futuros

RFC 2544 Controlado por Tempo

Verificar a norma para ver quais testes são controlados por tempo

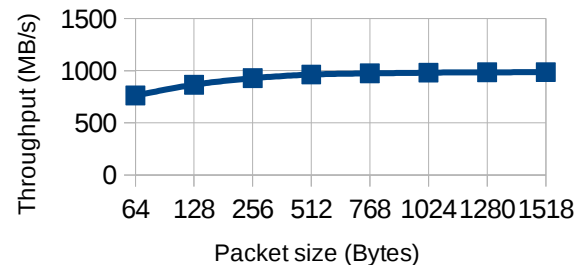
Implementar controle por tempo

Controle e Resultados em HTML

Definir layout

Definir interface

Vazão



Interface atual

LATENCY TEST				
Frame Size(KB)	Rate(Mb/s)	Media Type(Mb/s)	Latency(us)	
64	761.905090	1000	6.659840	
128	864.865479	1000	7.459521	
256	927.536865	1000	8.641280	
512	962.406799	1000	11.044160	
768	973.631653	1000	13.561600	
1024	980.843750	1000	16.013760	
1280	984.010742	1000	18.453760	
1518	985.715210	1000	20.300480	



Step Dinâmico

Diminuir o step do throughput a cada iteração

Objetivo: Atingir taxa máxima independentemente do step inicial

Possível solução: pesquisa binária do throughput máximo possível para o DUT