

Appendix A

Characterization charts

This appendix presents data we gather during the characterization process; see section 3.5. We carried out several experiments during this process and for each experiment we produced a set of six charts for each software probe. As state in subsection 3.5.8, six elements were characterized upon the data gathered by five probes. Here we enumerate the six characterized elements described in subsection 3.3.3.

- `dmarx`
- `ipintrq`
- `ifsnd`
- `ipreturn`
- `ifeotx`

Please note that for each characterized element we are including two sets of charts: unfiltered and sans preempted records. For differentiating them the chart sets for unpreempted records are labeled with a `-ni` prefix. The six produced charts per probe per experiment are:

- Central processing unit cycle count trace and histogram (2 charts)
- Machine code instruction count trace and histogram (idem)
- Hardware interrupt count trace
- Correlation between cycle count and instruction count

A five digit decimal number identifies experiments, and therefore chart sets. The experiment identifier codifies configuration information; it does not imply any kind of ordering. The following table describes the configurations used for each experiment.

Experiment	Configuration description																
03611 03801 03902 04003 04102	Unidirectional IP forwarding. The router wore a 100 MHz Pentium central processing unit and 3COM 3C905B-TX network interface cards. Each experiment varies the size of the forwarded packets:																
	<table border="1"> <thead> <tr> <th>Experiment</th> <th>Packet size</th> </tr> </thead> <tbody> <tr> <td>03611</td> <td>4</td> </tr> <tr> <td>03801</td> <td>56</td> </tr> <tr> <td>03902</td> <td>100</td> </tr> <tr> <td>04003</td> <td>200</td> </tr> <tr> <td>04102</td> <td>512</td> </tr> </tbody> </table>	Experiment	Packet size	03611	4	03801	56	03902	100	04003	200	04102	512				
Experiment	Packet size																
03611	4																
03801	56																
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05203 05303 05403 05503 05603 05703 05803	Unidirectional IPsec forwarding using AH=hmac-md5 and ESP=des-cbc. The profiled system is the security gateway at the exit of the security tunnel with respect of the traffic flow. The security gateway wore a 600 MHz Intel Pentium central processing unit and 3COM 3C905B-TX network interface cards. Each experiment varies the size of the forwarded packets:																
	<table border="1"> <thead> <tr> <th>Experiment</th> <th>Packet size</th> </tr> </thead> <tbody> <tr> <td>05203</td> <td>4</td> </tr> <tr> <td>05303</td> <td>56</td> </tr> <tr> <td>05403</td> <td>100</td> </tr> <tr> <td>05503</td> <td>200</td> </tr> <tr> <td>05603</td> <td>512</td> </tr> <tr> <td>05703</td> <td>1024</td> </tr> <tr> <td>05803</td> <td>1386</td> </tr> </tbody> </table>	Experiment	Packet size	05203	4	05303	56	05403	100	05503	200	05603	512	05703	1024	05803	1386
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05204 05304 05404 05504 05604 05704 05804	Idem as above but using ESP=3des-cbc.																
05205 05305 05405 05505 05605 05705 05805	Idem as above but using AH=hmac-sha1 and ESP=blowfish-cbc(64).																
05206 05306 05406 05506 05606 05706 05806	Idem as above but using ESP= blowfish-cbc(448).																



































































































