



Deep dive

MAPI

Created for CUSTOMER

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| Riverbed Elite Partner | Riverbed Authorized Support Partner | Riverbed Authorized Consulting Partner |
| Riverbed Managed Service Provider |

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Introduction

Preface

This report takes a deep-dive into the MAPI protocol optimization on SteelHeads within your estate. The report includes details of the error profiles in your network. It is not the intention of the report to give recommendations or advise on how to troubleshoot or reconfigure the SteelHead estate. The report is meant as a detailed technical health overview of the MAPI protocol optimization only.

SteelHeads in Scope

This shows a list of SteelHeads that have been analyzed.

Total number of monitored devices: 20

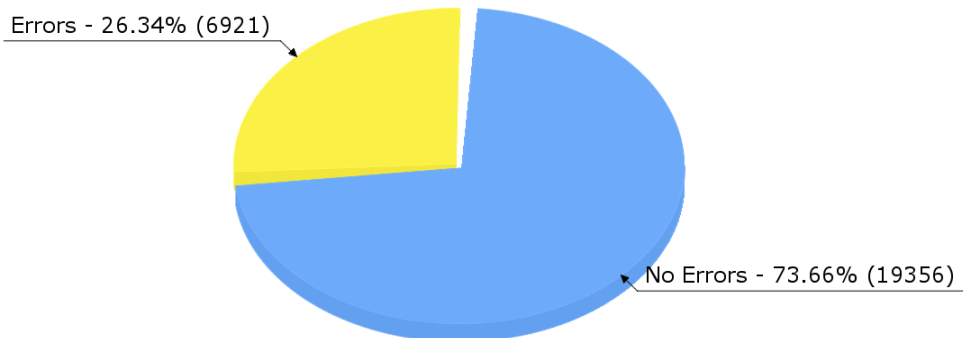
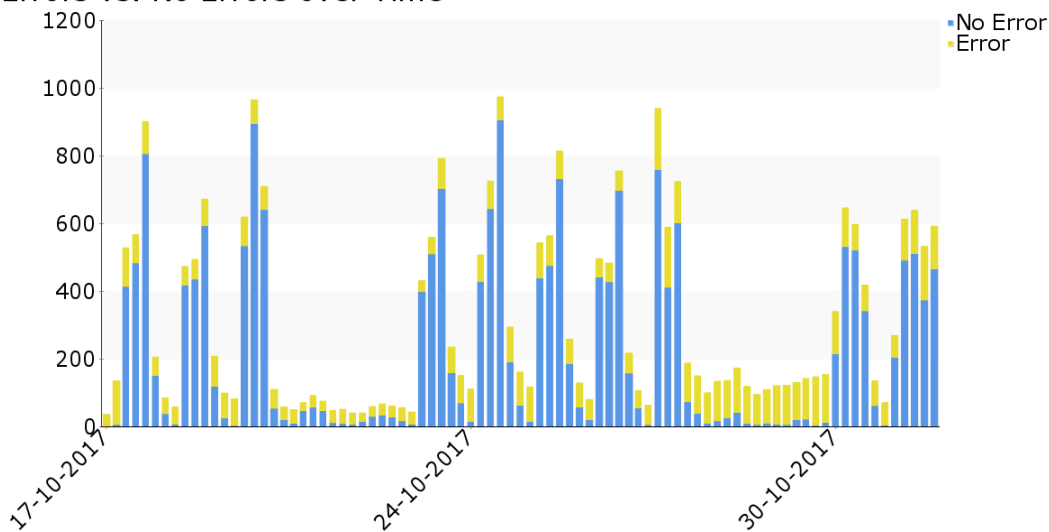
| Site | Model | RIOS version |
|--------------|---------|--------------|
| STEELHEAD-01 | CX255M | 9.1.4a |
| STEELHEAD-02 | CX255M | 9.1.4a |
| STEELHEAD-03 | CX770L | 9.1.4a |
| STEELHEAD-04 | CX3070M | 9.2.1d |
| STEELHEAD-05 | 1050H | 9.1.4a |
| STEELHEAD-06 | CX255H | 9.1.4a |
| STEELHEAD-07 | CX255H | 9.1.4a |
| STEELHEAD-08 | CX770M | 9.1.4a |
| STEELHEAD-09 | CX255L | 9.1.4a |
| STEELHEAD-10 | CX770H | 9.1.4a |
| STEELHEAD-11 | CX770L | 9.1.4a |
| STEELHEAD-12 | CX255U | 9.1.4a |
| STEELHEAD-13 | CX255L | 9.1.4a |
| STEELHEAD-14 | 250M | 9.1.4a |
| STEELHEAD-15 | CX770M | 9.1.4a |
| STEELHEAD-16 | CX570M | 9.1.4a |
| STEELHEAD-17 | CX770M | 9.1.4a |
| STEELHEAD-18 | CX770L | 9.1.4a |
| STEELHEAD-19 | CX570H | 9.1.4a |
| STEELHEAD-20 | CX770M | 9.1.4a |

Optimization Errors vs. No Errors

In this section we have analyzed how many errors were logged, comparing it to the number of sessions optimized with no errors. Please note that an error is not a session that is broken from the user perspective it's an error in the optimization.

When we see optimization errors, it means the SteelHead cannot perform layer7 optimization, but is only capable of bandwidth optimization. Without Layer 7 optimization, users will experience significant performance degradation, in particular this will impact those links and sites with high latency.

Errors vs. No Errors over Time

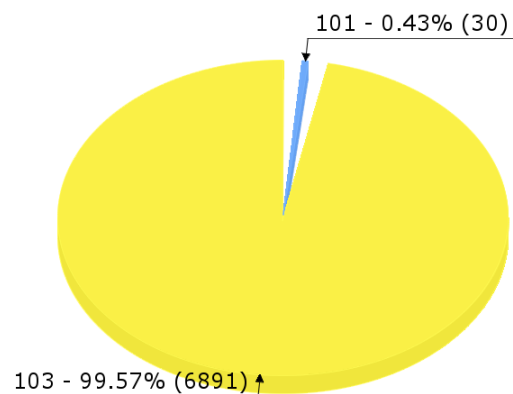
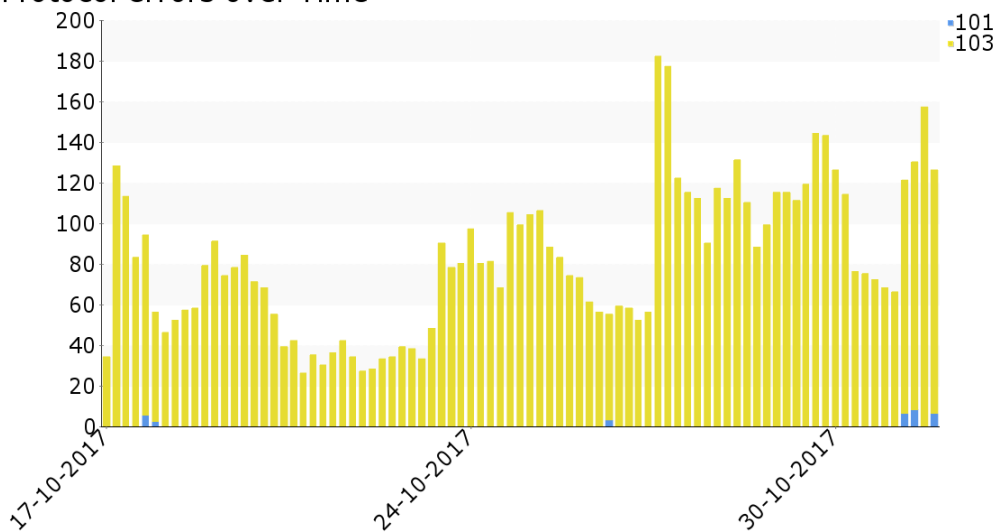


Protocol errors

When a protocol error occurs, the SteelHead lists a reason why the event occurred. There will be many different causes, the most common are traffic that cannot be decrypted, but it can also be that the client or server operating system is not supported. The protocol error code list is the official list from Riverbed one and is available from the Riverbed knowledge base or the appendix to this report.

This view is global, but in later sections you will be able to see what SteelHeads, servers or clients are causing the errors.

Protocol errors over Time

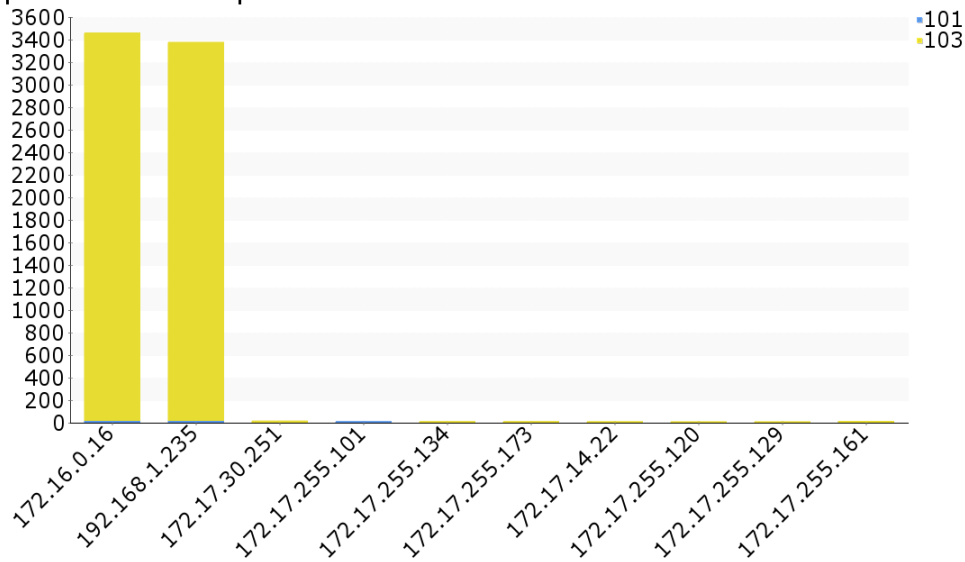


Top 10 SteelHead peers with errors

When we analyze a session, data is collected to identify the server-side SteelHeads. We use this information to detect SteelHeads that have problems, helping you to identify and prioritize the SteelHeads that needs to be focused on when troubleshooting issues.

Note that the IP addresses are the In-path interfaces, this means that the same SteelHead can appear one or more times depending on how many interfaces it has.

Top 10 SteelHead peers with errors

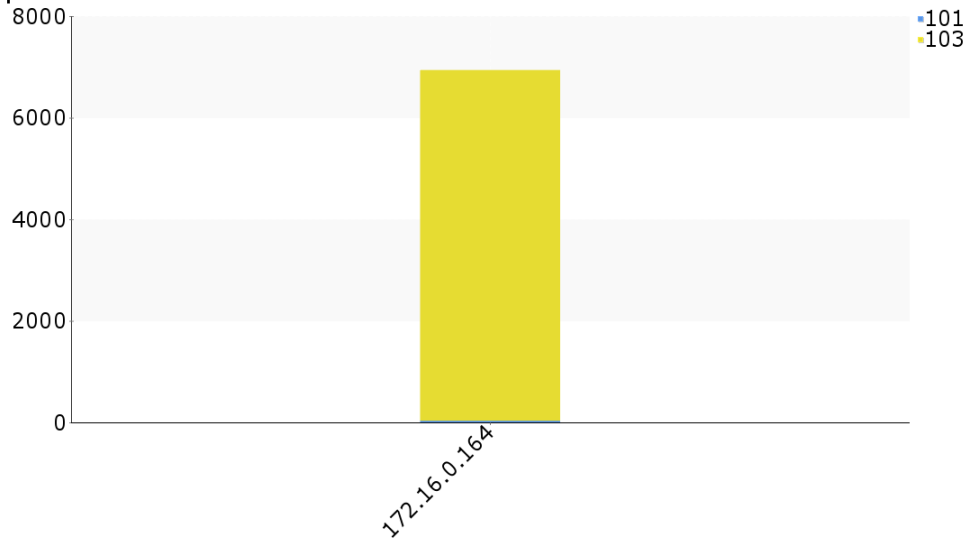


| Peer SH | 101 | 103 |
|----------------|-----|------|
| 172.16.0.16 | 10 | 3445 |
| 192.168.1.235 | 9 | 3363 |
| 172.17.30.251 | 0 | 11 |
| 172.17.255.101 | 7 | 0 |
| 172.17.255.134 | 0 | 7 |
| 172.17.255.173 | 0 | 7 |
| 172.17.14.22 | 0 | 6 |
| 172.17.255.120 | 0 | 5 |
| 172.17.255.129 | 0 | 5 |
| 172.17.255.161 | 3 | 1 |

Top 10 servers with errors

Within this section of the report we identify the servers causing the issues. It could be that an Exchange server is running a version or operating system that is not supported. Furthermore you can use this section to prioritize between servers/locations that have higher business priority.

Top 10 servers with errors

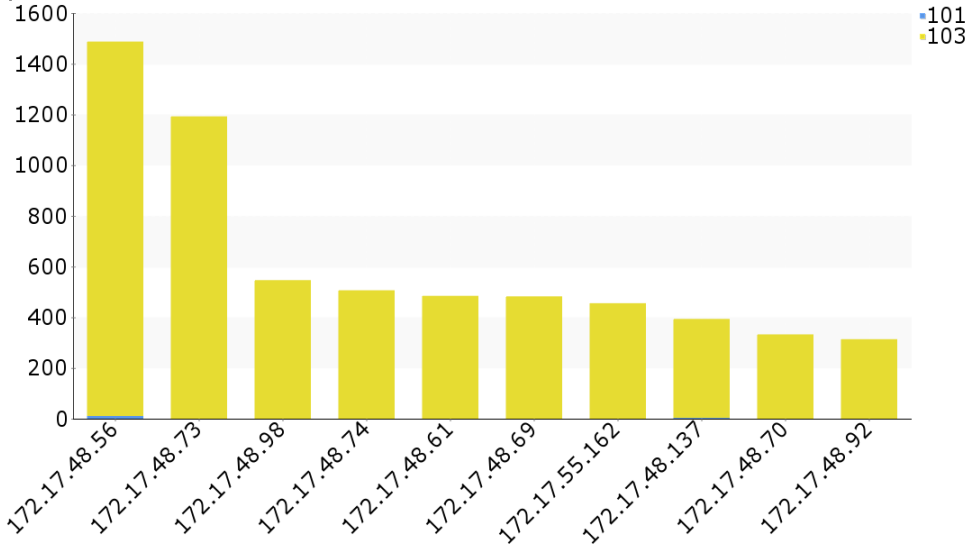


| Server IP | 101 | 103 |
|--------------|-----|------|
| 172.16.0.164 | 30 | 6891 |

Top 10 clients with errors

Within the section of the report we identify the clients that are causing issues. Like the server section it could be that the client is running an Exchange version or operating system that is not supported. You can also use this section to prioritize between clients/locations that have higher business priority.

Top 10 clients with errors



| Client IP | 101 | 103 |
|---------------|-----|------|
| 172.17.48.56 | 8 | 1476 |
| 172.17.48.73 | 0 | 1189 |
| 172.17.48.98 | 0 | 543 |
| 172.17.48.74 | 0 | 503 |
| 172.17.48.61 | 0 | 481 |
| 172.17.48.69 | 0 | 479 |
| 172.17.55.162 | 0 | 452 |
| 172.17.48.137 | 2 | 388 |
| 172.17.48.70 | 0 | 329 |
| 172.17.48.92 | 0 | 310 |

Appendix

How we collect data and analyze

We collect data in several ways to provide the most comprehensive view of the SteelHeads performance, workload and efficiency. The primary method is CLI (Command Line Interface). For connection data the SteelHead is instructed to transmit the details of currently open sessions - every 15 minutes. By automatically sampling for connection data per SteelHead, 24 hours a day, 7 days a week we build up the most detailed set of statistics possible, meaning that we can provide the most robust and valid analysis of this important performance metric.

In general an error amount below 5% should not be considered a problem.

Protocol Error Codes

| Protocol error | Error description |
|-----------------------|--|
| 101 | Cannot decrypt traffic |
| 102 | Not MAPI traffic: Invalid RPC |
| 103 | Not MAPI traffic: different RPC protocol |
| 104 | Unexpected auth data |
| 105 | Mapi 2k7 fallback failure |
| 106 | Inner SSL channel failure |