WORKING PAPER

MEETING OF THE METEOROLOGY PANEL (METP)
WORKING GROUP MOG

THIRD MEETING

Gatwick, London, United Kingdom, 13 to 17 June 2016

Agenda Item 3.2: Operation of SADIS

REVIEW OF SECURE SADIS FTP BANDWIDTH

(Presented by the SADIS Provider State)

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SUMMARY

This Working Paper provides the opportunity for the group to review the current capacity of the Secure SADIS FTP service, and to consider if changes to bandwidth are necessary.

Action by the METP-WG/MOG is in paragraph 4.

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1. **INTRODUCTION**

1.1   This paper provides the opportunity for the group to review the current capacity of the Secure SADIS FTP service.

1.2   In light of feedback received from the SADIS Efficacy questionnaire and in consideration of expected increased number of users, it also provides the opportunity to consider if changes to bandwidth are necessary.

2. **DISCUSSION**

2.1   The group will recall that at the first meeting of the WG-MOG[1] meeting the SADIS Provider was invited to increase the Secure SADIS FTP bandwidth[2] to 24Mbit/sec bursting 42Mbit/sec; and to raise the individual client limit to 2048Kbit/sec. This was implemented on 27 October 2015.

2.2   Figure 1 and Figure 2, below, illustrate the improvement following the change.

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[1] 8 to 11 September 2015, Gatwick, United Kingdom
[2] This is the overall allocated bandwidth between the SADIS Provider and the SADIS Provider's Internet Service Provider
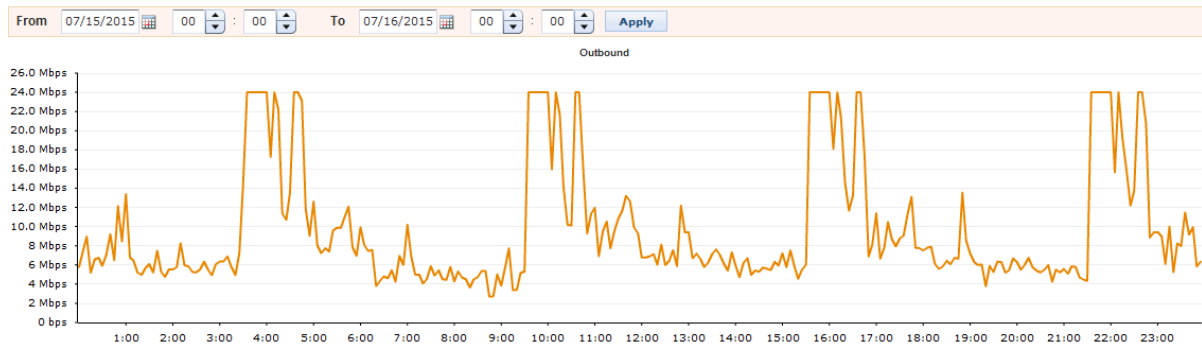
Figure 1: Secure SADIS FTP download activity against capacity (16Mbit/sec bursting to 24Mbit/sec) with individual client limit rate was set to 1024Kbit/sec, 7 July 2015.
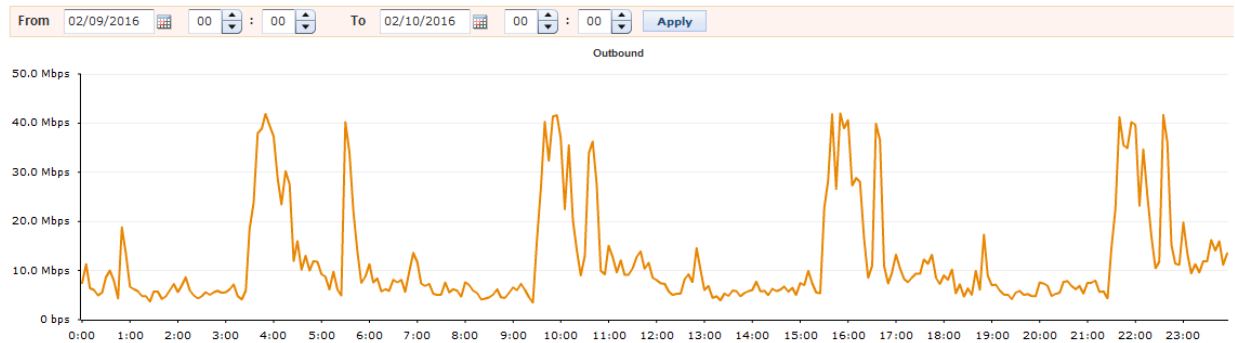

Figure 2: Snapshot of 24 hour data download from Secure SADIS FTP against available capacity, 9th February 2016. At the busiest download times (GRIB2 availability), the peak usage is just reaching the 'burst limit' of 42Mbit/sec.

2.3   The group may also note, from the SADIS Efficacy Questionnaire, that three users indicated that the Secure SADIS FTP service was considered to be too slow. For two of those instances, solutions may be obtained by the user ensuring their systems are using the 1 minute OPMET files. The remaining instance was very clear in that it considered the bandwidth to be a limitation to their operations.

2.4   Separate feedback from a SADIS Workstation provider also suggested that some of their clients had experienced slower than ideal downloads, though this appeared to be a subjective rather than a quantitative observation.

2.5   With the forthcoming withdrawal of SADIS 2G on 31 July 2016, it had been anticipated at the WG-MOG/1 meeting that approximately 80 new users (from July 2015 baseline) would transition to the Secure SADIS FTP service by July 2016. At time of submission, 21 additional users are accessing the service, with the expectation that approximately 60 more may seek access in the near future. The group will recall that the prediction presented to WG-MOG/1 was one component contributing to the decision to increase the bandwidth (as implemented on 27 October 2015).

2.6   With reference to Figure 2 and in the absence of obvious 'capping' of the download rates it seems that the current capacity is adequate.

2.7   The feedback regarding 'slow' dowloads from a small number of SADIS users and the SADIS Workstation provider cannot be ignored, and the SADIS Provider shares the feedback with the

group. It should also be considered that in the months following submission of this paper, there is expected to be an increase in download activity, absorbing the current capacity.

2.8   Considering that the overall majority of responses from the SADIS Efficacy questionnaire were positive, and that on the evidence there is, currently, no obvious capacity issue, the SADIS Provider considers that the existing bandwidth settings are sufficient. However, the SADIS Provider is more than willing to increase the bandwidth – if required – at the direction of the meeting, and provides cost estimates for doing so in the Appendix.

3.   **CONCLUSION**

3.1   Having apprised the group of the current Secure SADIS FTP download rates against capacity; and sharing information with regard to feedback from a small number of users and one SADIS Workstation provider that considered the current bandwidth insufficient, the SADIS Provider invites the meeting to consider the most appropriate course of action.

3.2   On balance, the SADIS Provider considers that the current capacity is sufficient, and therefore invites the group to formulate the following draft Decision;

> **Decision 3/xx   Secure SADIS FTP Bandwidth**
>
> That, the current Secure SADIS FTP bandwidth capacity (24Mbit/sec bursting 42Mbit/sec between SADIS Provider and its Internet Service Provider; with individual client connections limited to 2048Kbit/sec.) is considered sufficient, and that no changes are required.
>
> *Note 1: - The SADIS Provider is invited to continue to monitor download rates against capacity and to report to the next WG-MOG (SADIS/WAFS) meeting.*

4.   **ACTION BY THE METP-WG/MOG**

4.1   The METP-WG/MOG is invited to:

a) note the information contained in this paper; and

b) decide on the draft decision proposed for the group's consideration.

APPENDIX A

Secure SADIS FTP bandwidth capacity option

Additional combinations are possible, and cost estimates can be provided.

	UKMO - ISP partition: 24Mbit/sec bursting to 42Mbit/sec Nominal individual user download rates limited to 2048 Kbit/sec	UKMO - ISP partition: 32Mbit/sec bursting to 48Mbit/sec Nominal individual user download rates limited to 3072 Kbit/s (if chosen by the group to be implemented)
	'Concurrent user' download experience	'Concurrent user' download experience
To download a 20 MByte GRIB2 dataset	120 users: 7min 40sec 200 users: 12min 50sec 250 users: 20min 50sec Fastest possible 'non-concurrent' download = 1min 20sec	120 users: 6min 40sec 200 users: 11min 7sec 250 users: 13min 54sec Fastest possible 'non-concurrent' download = 54 sec
To download a 50 Kbyte 5 minute OPMET file.	120 users: 1.5 sec 200 users: 2.4 sec 250 users: 3.1 sec Fastest possible 'non-concurrent' download <0.2sec	120 users: 1.0 sec 200 users: 1.6 sec 250 users: 2.0 sec Fastest possible 'non-concurrent' download <0.2sec
Estimated Cost	GBP10,500 annually at 2016 prices	GBP14,000 annually at 2016 prices.

Table 1: Illustrating the theoretical 'download' experience for specified files over FTP considering current bandwidth capacity and a possible enhancement.

Note 1 - the nominal individual client rates are ranges within which individual connections are managed. Where overall partition bandwidth allows, individual client connections will be within this range. There is an upper limit to prevent individual clients taking unfair shares of the overall partition.

Note 2 - the actual user experience will vary, since not all users will necessarily be downloading the same files at the same time.

Note 3 - the actual user experience will vary due to the nature of the 'Internet', and their own connection via their ISP to the internet.

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