



Performance Questionnaire

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Note: To get a clear picture of the situation, the involved devices and the impact, fill out the below questions as precise as possible.

1. General Questions :

1.1 Problem occurrence

- 1.1.1 When exactly did the problem start (date/time) ?
- 1.1.2 Is it persistent now and impacting customers productive env ?
- 1.1.3 Is it of transient or reoccurring for a certain time frame or static behaviour ?
- 1.1.4 Does it shows up when any kind of (copy) services are started ?
- 1.1.5 If the problem is transient, did customer perform any recovery action or is the recovery automatic ?

1.2 When did the performance problem initially start ?

- 1.2.1 After any kind of SAN issue ?
- 1.2.2 After upgrading drivers or firmware on any product ?
- 1.2.3 After expanding the SAN ?
- 1.2.4 After changing anything in the config (storage/host/SVC/SAN) ?
- 1.2.5 After other changes / incidents ?
- 1.2.6 Power outages ?

1.3 What is the impact to the business?

- 1.3.1 Applications and/or services slow ?
- 1.3.2 Applications and/or services crash ?



1.4 Does the customer use management or monitoring tools like SAN, storage or host management tools ?

1.5 Have performance stats been gathered / how is "bad performance" measured ?

1.5.1 With/for SVC IO Stats ?

1.5.2 With/for TPC ?

1.5.3 Any other tool ?

1.5.4 What are the performance expectations ?

1.6 Is time synchronization between all involved devices done ?

If not provide time shift !

2. Host specific questions :

2.1 Can the performance problem be bound to a single host ?

2.2 Provide a list of affected and non-affected host systems

(each with OS type, OS level, host type, model) !

2.3 Details about the affected hosts (OS type / OS level) ?

2.3.1 Provide OS and host name

2.3.2 Provide HBA driver and firmware levels

2.3.3 Provide failover/multipathing sw + version

2.3.4 Do host logs show any errors/events related to the problem ?

2.3.5 Do host specific and recommended sw updates / code fixes exist which are not installed ?

2.3.6 In questions of sw levels and device drivers, the affected host(s) is ...

... pretty much uptodate ???

... very outdated ???

2.4 Can the performance problem be bound to a single or to multiple applications ?

2.4.1 What applications ?

2.4.2 What does application(s) logs show ?

3. SVC specific questions :

3.1 Describe SVC environment/setup

3.1.1 Cluster size(s)



3.1.2 Cluster versions(s)

3.1.3 Impacted nodes

3.2 Does SVC report any specific errors which indicates I/O issues ?

3.3 Are SVC CopyServices configured ?

3.3.1 How well performed the env BEFORE CopyServices were started ?

3.3.2 If stopping CopyServices, does the problem still exist ?

3.3.3 Are consistency grps defined and do they start at the same time ?

3.3.4 Has connectivity between SVC clusters been checked to be ok ?

4. Storage Controller specific questions :

4.1 Can the performance problem be bound to a single or multiple storage subsystems ?

4.1.1 Which storage subsystem(s) is/are affected ?

4.1.2 What code is installed on storage subsystem ?

4.1.3 What do storage subsystem logs show ?

4.2 Provide appropriate datacollections for the involved IBM storage components

(if storage is non-IBM, please check with the non-IBM storage vendor to analyze the box and come back with results.

5. SAN specific questions :

5.1 How does the SAN layout look like ? Core-edge ? Fully-meshed ?

5.1.1 Provide a detailed SAN topology with distances, port numbers, attached devices, etc !

5.1.2 Describe SAN devices and which are affected by the problem !

5.2 Have error counters for all ports on all boxes been cleared and monitored and - if needed - have appropriate actions been taken (replace SFPs / cables / etc) to solve obvious issues ?

5.3 Do we see any obvious error/event messages in the switch logs

5.3 Have the ISLs been checked for enough bandwidth ?

5.4 Are specific SAN switch features in use (Preferred Path, Trunking, traffic isolation ...) ?



5.5 What about the SAN details :

- 5.5.1 Are long distance links in use ?
- 5.5.2 Are DWDMs / dark fiber / IP Routing / etc ... in use ?
- 5.5.3 If there is an FCIP WAN network, describe network and Service Level Agreement SLA (bandwidth, MTU, delay) and TELCO provider ?
- 5.5.4 If an IP network used, is any other type of traffic mixed with storage traffic ?

6. Next actions if not already done :

6.1 provide data collections of affected host(s)

- 6.1.1 one or two if possible
- 6.1.2 if possible when same OS: one of a "bad" / one of a "good" host

6.2 Provide full SVC data collections

6.3 Provide a meaningful SAN layout (see section 5.1)

6.4 Provide SAN data collections

6.5 Provide performance data

- 6.5.1 Covering the time frame of the impact.
- 6.5.2 If possible also for a time frame when production works without performance impact.
- 6.5.3 If possible, provide TPC performance data
- 6.5.4 For SVC perform stats collection
- 6.5.5 Use host/OS specific performance collecting tools to provide performance data

6.6 Involve support structures for all products (Host / SAN / SVC / Storage) and ask them to check THEIR part of the bad performing storage environment for any obvious or eye-catching issue in regard to the problem description

Note: Upload all data to the IBM EcUREP Server.
Please read the file "**Data Transfer to IBM.Pdf**" for more details.