

Request for Quotation

Server Troubleshooting and Refurbishment

OARC Systems Engineering

2019/11/21

Background

OARC uses several large file server systems to store large datasets which we make available for research. Two of these systems are exhibiting issues that appear to be hardware related.

fs1 This server is rebooting itself on a regular, but not quite predictable, basis. In general it reboots itself once a month, usually in the first week of the month, and frequently near 18:00 UTC. However, the reboots are not regular enough to attribute them to any particular process, and regular cron jobs have been all but ruled out. In addition, this server reboots on any heavy read load, such as when we attempt to regenerate checksums of the files it holds.

We suspect a faulty drive controller, but this needs to be investigated further. The server uses custom hardware from [45 Drives](https://www.45drives.com/)¹.

fs2 This file server has two ZFS pools: one internal, one on an external JBOD. The JBOD hardware (chassis and drives) are new as of the summer of 2018, however the pool comprised by that hardware is exhibiting frequent CRC errors whenever it is subjected to a heavy write load, causing the pool to enter a degraded state. A reboot of the system consistently results in the pool returning to a clean state.

OARC's file servers are Supermicro-based systems with 24-disk chassis, some with an additional 24-disk external JBOD. They run either Debian Linux with an `mdadm`-managed RAID array or FreeBSD with a ZFS RAIDZ2 array.

¹<https://www.45drives.com/>

Both systems are located at the Hurricane Electric FMT2 facility in Fremont, California.

Required Work

OARC is seeking a contractor capable of investigating, diagnosing, and correcting the above described hardware issues. The contractor will be furnished with logins on both systems as well as physical access to the hardware. OARC will acquire any parts necessary to complete the work.

While remote hands assistance is available at the facility, a contractor who is able to easily visit in person in order to perform hands-on work will be preferred over one requiring remote hands assistance.

Being a troubleshooting task, this work is somewhat open-ended, however we anticipate it is likely to take between 40 and 80 hours to complete. Work is to begin as soon as the selected contractor is available. The contractor must be able to devote at least 20 hours per week to this contract.

The file servers in question hold data that are considered a critical asset of OARC, Inc. OARC's data set is unique and irreplaceable, and is a valuable and highly visible resource to its community of Members and the Internet's wider global DNS operator community. As such it is expected that all due caution will be taken when working on these servers to avoid data loss.

Compensation

Compensation for this work will include time worked at the agreed-upon rate, and local travel (e.g. taxi, mileage at standard rates) to and from the data center, when necessary. OARC may approve other necessary expenses that are directly related to the completion of this work provided that prior approval is obtained.

Submitting a Quote

Please submit questions, proposals, and/or quotes to jobs@dns-oarc.net no later than February 15th, 2020. Please include your relevant experience, availability, desired rate, and information about how local to the data centre you are.