University of Minnesota

Center for Magnetic Resonance Research

Standard Operating Procedure

C101-03 - CMRR Computer Resources Overview

Here are some basic facts about the CMRR computer resources to help orient you.
For grants, a short description is available at http://www.cmrr.umn.edu/resources/compute.shtml

CMRR CRG - Computer Resources Group

The CMRR has dedicated staff to help with your computer needs.
Contact us by email: help@cmrr.umn.edu

John Strupp - group leader, magnet consoles, servers
Brian Hanna - Unix servers, networking, database, website
Andy Berhow - PCs, Macs, printers, networking, Windows servers, CCIR

CMRR Servers Overview

We have a large collection of Unix servers where you can store data
We have many standard software packages already installed: Matlab, FSL, AFNI…
Please use the right server! Your sponsor can advise you on which server to use,
or contact help@cmrr.umn.edu for advice.

Group servers hold the users of a single research group. The group has funded that server.
Group servers typically have RAID storage for home directories and data.
In some cases, both processing and data storage take place here.
Unless permission is granted by that group, that server is not available to everyone.

Compute servers are available to all users. Some systems have GPUs installed.
Some of these systems are primarily dedicated to a particular software service.
The atlas systems have 128Gb - 256Gb of memory. If you need lots of resources,
please use the compute servers. Large batch jobs should use the SGE queues.

File servers are used to store user home directories and large collections of data.
Most of the server space is shared via /home/servername on all Unix servers.
You can also connect via Windows file sharing/Samba to access this space.
Most groups are under 5Tb, and most users use under 1Tb.
If you have larger storage needs, please contact help@cmrr.umn.edu

Network servers are used to provide some necessary services like web, licensing, user authentication, monitoring, and backups. They are not generally available for computing. Backup snapshots are stored on local archive servers weekly, and rotated offsite on encrypted tape monthly for disaster recovery.

Public servers are for sharing data. You have a separate home directory on the web server. You can have your own page there, and share files both publicly and privately.
The ftp server is also available for collaborators to upload and download files.
There are space limits, so contact help@cmrr.umn.edu for large files.

CMRR Networking Overview

The University of Minnesota IT / NTS group supports building connectivity and WiFi. You can contact them at 1-HELP or help@umn.edu

The CMRR CRG supports the networking equipment in the office and magnet areas, including the hubs, switches, and media converters. You can contact us at help@cmrr.umn.edu

There are a number of networks at the CMRR. The office areas are divided into seven subnets, based on building location. The server systems are all on one subnet. The magnet systems are all on one subnet. The public web server and ftp server are on a separate public network for security.

There is a firewall between those systems and the University network / outside world.
Unless you are using the CMRR VPN, you won't be able to reach the CMRR networks from home.

CMRR PCs and Macs Overview

Most PCs are assigned to one person or group. Get permission before using a PC or Mac at someone's desk. There are some machines available in the terminal room and the magnets for general use.

We centrally purchase and manage most CMRR PCs. To order a new PC/Mac or get help with one, contact help@cmrr.umn.edu You can register and use your own equipment on our network, subject to UMN policies.

Most of our desktop computers are part of an Active Directory domain. Your CMRR account will allow you to log into your PC. We will contact you about keeping your computer updated.

CMRR Varian/Agilent Magnet Hosts and Clones

Several magnet systems are Varian/Agilent. They run RedHat Linux 5.
You will have a separate home directory on those servers.
Each of those systems has a datastation clone for testing and data processing.
You can develop a new pulse sequence on the clone system and run it on the magnet host.
Unless you have scheduled time on the magnet, do not use the magnet host.

Varian/Agilent Magnet	**Magnet host**	**Clone**
9.4T-31cm	sunny	perch
16.4T	walleye2	sauger
4.0T	lutsen2	manitou
9.4T-65cm	muskie2	crappie

CMRR Siemens Magnet Hosts and Data Stations

Several magnet systems are Siemens. They run Windows.
There is one shared login on these systems.
You can transfer your data using DICOM or Twix to your CMRR server storage.
In some cases, we can set up a direct DICOM transfer to a remote DICOM server.
To develop a Siemens pulse sequence, you will need an individual IDEA virtual machine.

Siemens Magnet	**Magnet host**
3T-A	Trio
3T-B	Triob
7T	Septet
7T-AS	7tas
10.5T	105t
First datastation	nulltesla
Second datastation	nulltesla2

Purpose

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Revision History

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Approval Signatures	**Date**
Author/Owner:	
Regulatory Compliance Coordinator:	
Center Director:	