HARDWARE GUIDE

The team here at WipeOS is determined to make sure we are supporting your organization to develop the best solution possible. While we are not a hardware, provider we have put together this guide to help advise our clients about hardware that can be used with WipeOS.

There are a lot of other devices that work great with WipeOS. The intention of this guide is to give you a foundation of functional hardware that you can then add or change in the future.

Rev. 2/22

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DATA DESTRUCTION LAB

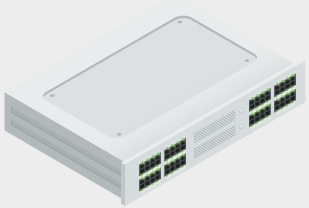
The data destruction lab is essensial for any organization that handles data containing devices. The loose drive wiping lab is a great way to wipe and test all types of drives. This type of modular lab works great with WipeOS, it is easy to keep updating and changing the lab to fit your specific needs and equipment types. Here are some specs and best practices that should be considered when getting your lab set up.

SETUP

A WipeOS appliance is connected via ethernet cable to a switch. This switch then connects to a number of servers, JBODs or disk arrays that will allow you to insert hard drives. We will work with you to keep this updated and maintained. Regular wear and tear will require maintenance and monitoring for any large scale wiping lab.

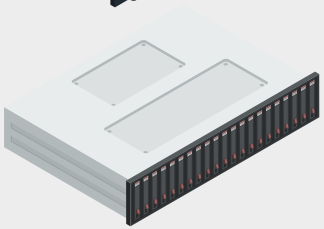
KVM/Laptop

WipeOS Appliance



GIGAbit Unmanaged Network Switch

Disc Array



JBOD

BEST PRACTICES

KVM - Keyboard, Video and Mouse, this is a rack mount device that typically has multiple connections to allow control of multiple devices without needing multiple keyboards, monitors or mice.

Appliance - The server that runs the show. You can not erase hard drives with only this device, you need a computer, what we refer to as a client.

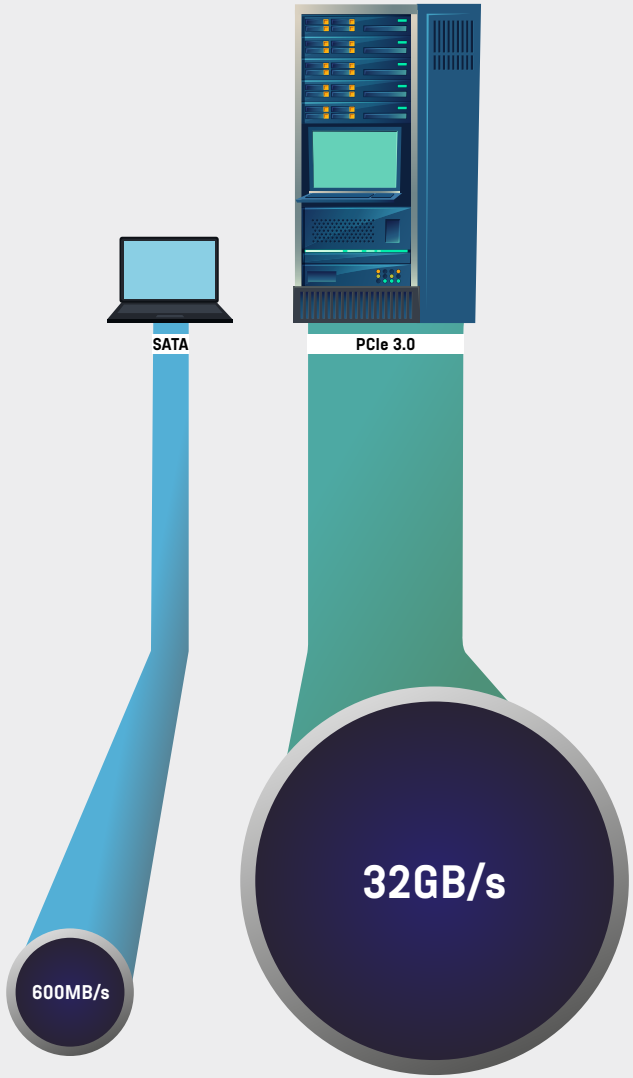
GIGAbit unmanaged switch - Fast, consumer grade network switch. They typically only have power, a number of Ethernet ports and activity lights. GIGAbit is also displayed as 10/100/1000 on the box for these devices.

Disk Array - A chassis that can hold multiple hard drives. May or may not have a "controller" to manage the disks built in. Typically you connect one of these enclosures to a WipeOS client.

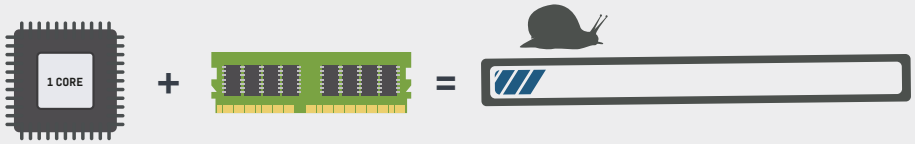
JBOD - Just a Bunch of Disks, an acronym that is used for a disk array provides direct access to the hard drives contained within.

BANDWIDTH EXPLAINED

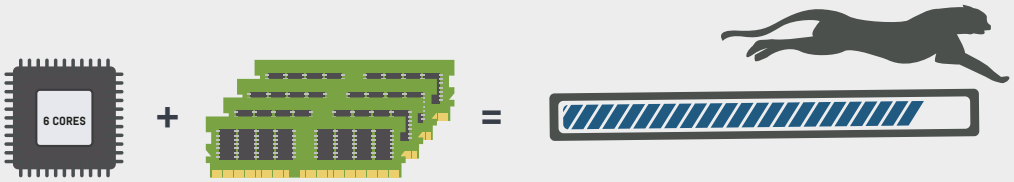
Modern gear is better! PCI lanes are better than on-board SATA! SAS-3 is better than SAS-2, is better than SATA, is better than IDE, etc.
You want to use all the PCI lanes you have. This means you want a server with more than 1 PCI card slot. This means that you want good RAID cards in IT modes for those slots.



Minimum specs to run: 2GB RAM on a tiny 2012 thinkpad with a SATA drive: constrained bandwidth on SATA bus, tiny slow RAM, one core.



What we recommend for maximum speeds:
Modern-ish, double Xeon motherboard with 2GB + (300Mb Disks) RAM, IT mode RAID cards in SAS-3 on PCIe 3 lanes.

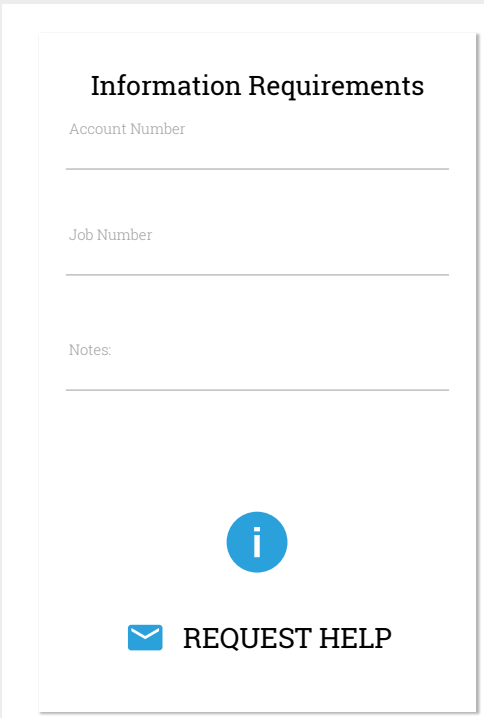


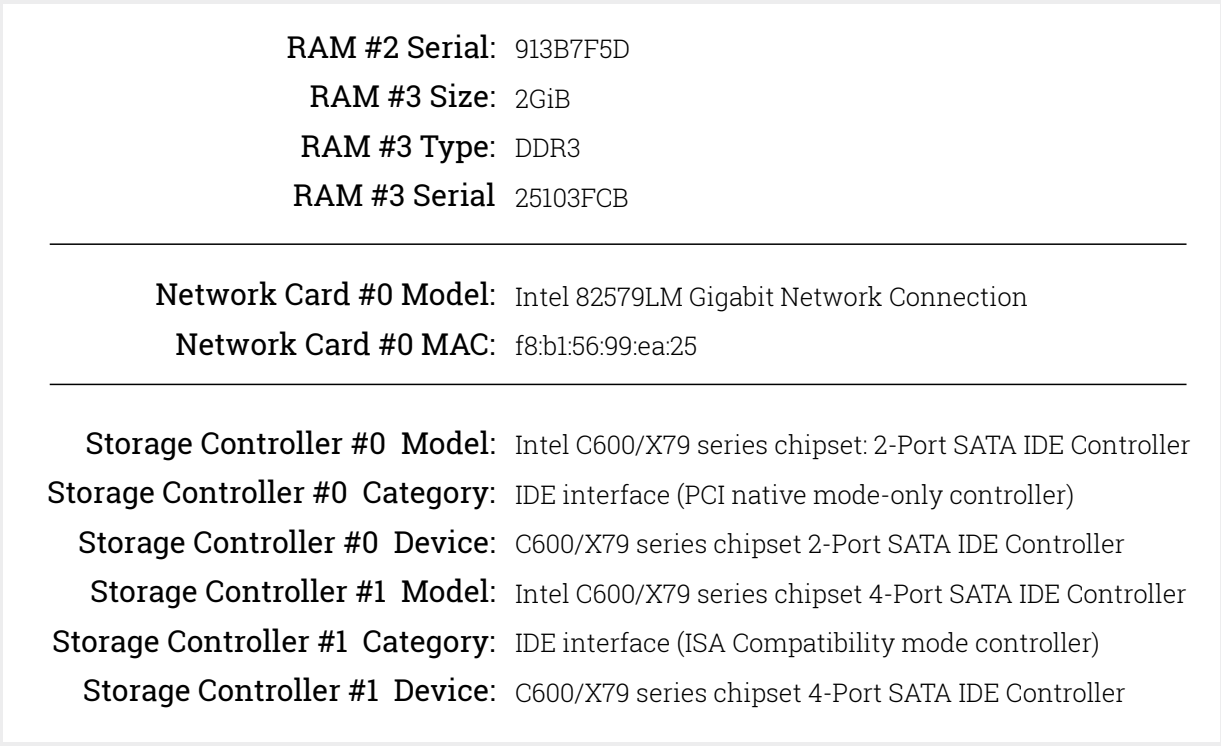
BANDWIDTH EXPLAINED

WipeOS works with a wide variety of hardware. The most important things to confirm when you are setting up hardware for loose drives are the following:

- 2GB of RAM + 300MB per each hard drive
- No PERC Cards
- IT mode is better than IR mode RAID cards

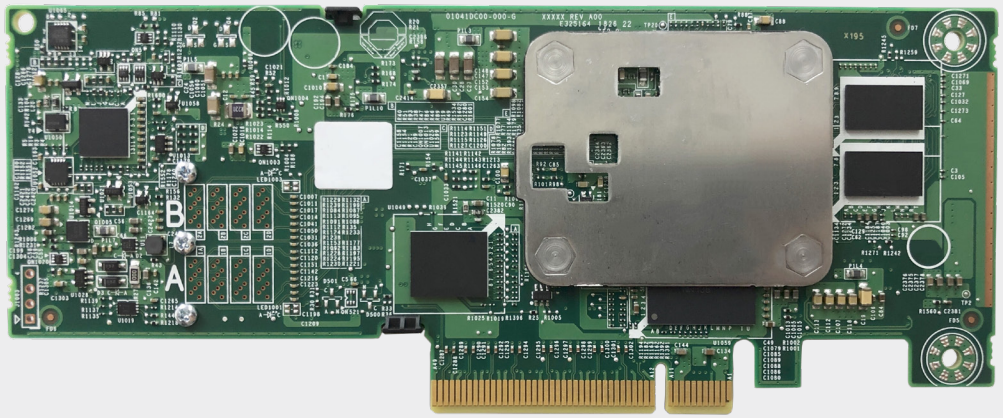
It is also helpful to push the info button to get all the device details.



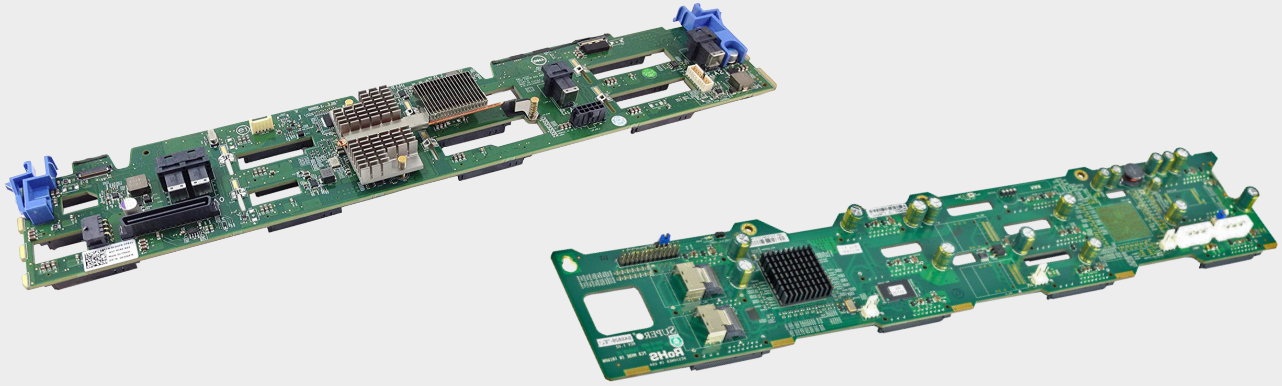


RAID CARDS AND BACKPLANES

A RAID card is a translation mechanism between PCI lanes from a CPU and SATA/ SAS drives. They normally take 4 PCI lanes to operate. They normally have support for 8 'downstream' drives. The RAID card will have a connector or two to attach to a backplane.



A backplane has to have an inlet (connector) for the RAID card's cable, and an inlet (connector) for power, but most times more than 1 of each. Backplanes make apparent the difference in ATA and SAS.

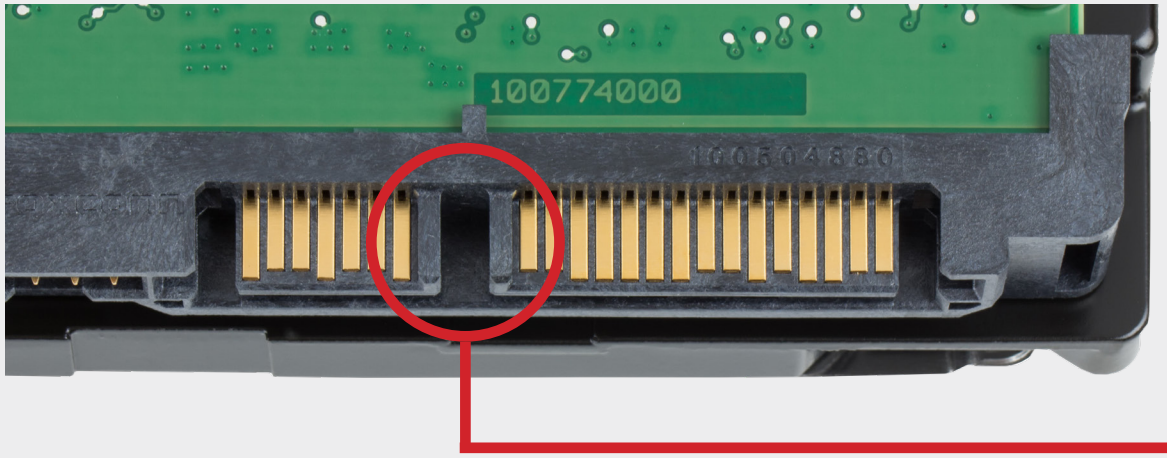


SSD/HDD

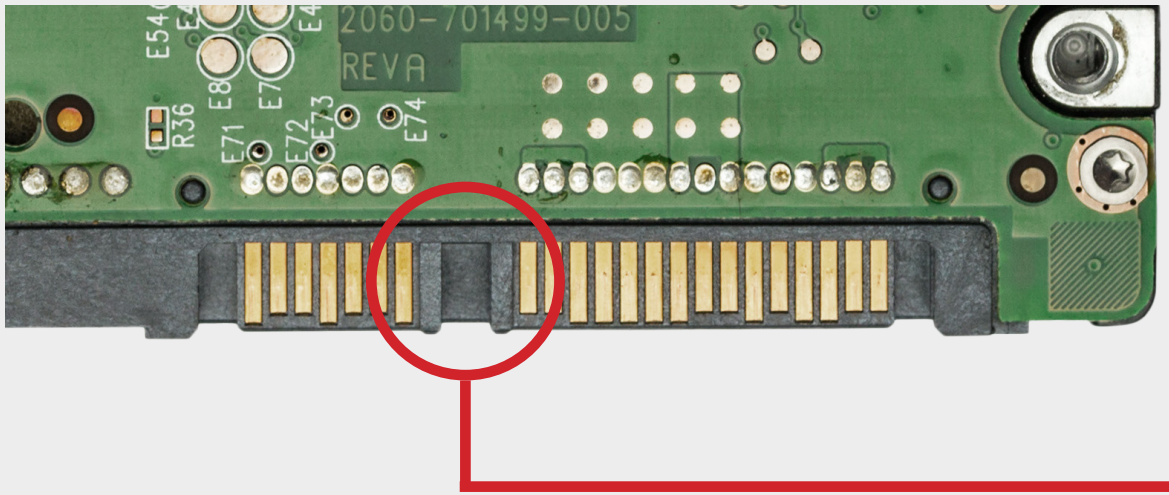
Drives can be either Solid State Drive (SSD) or Hard Disk Drive (HDD). A solid state drive has no physical movement of actuators, heads or motors. It is based on NAND flash storage, with nanoparticles being charged or discharged in situ. An HDD has a piece of spinning ceramic with a read/write heads jumping around the disk. An SSD has much quicker read/write times than an HDD.

SATA/SAS

SAS is a superset of ATA, which is to say an ATA port will plug into a SAS port, but not the other way around. SAS has extra connectors not present on an ATA device. Most consumer grade drives are ATA. Most commercial grade storage devices are SAS. SAS generally has a higher bandwidth than ATA as a rule of thumb.



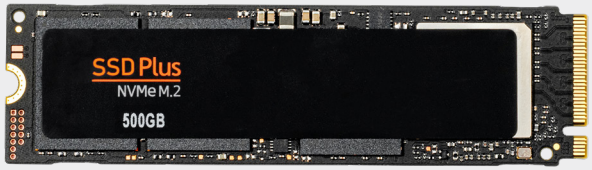
SATA

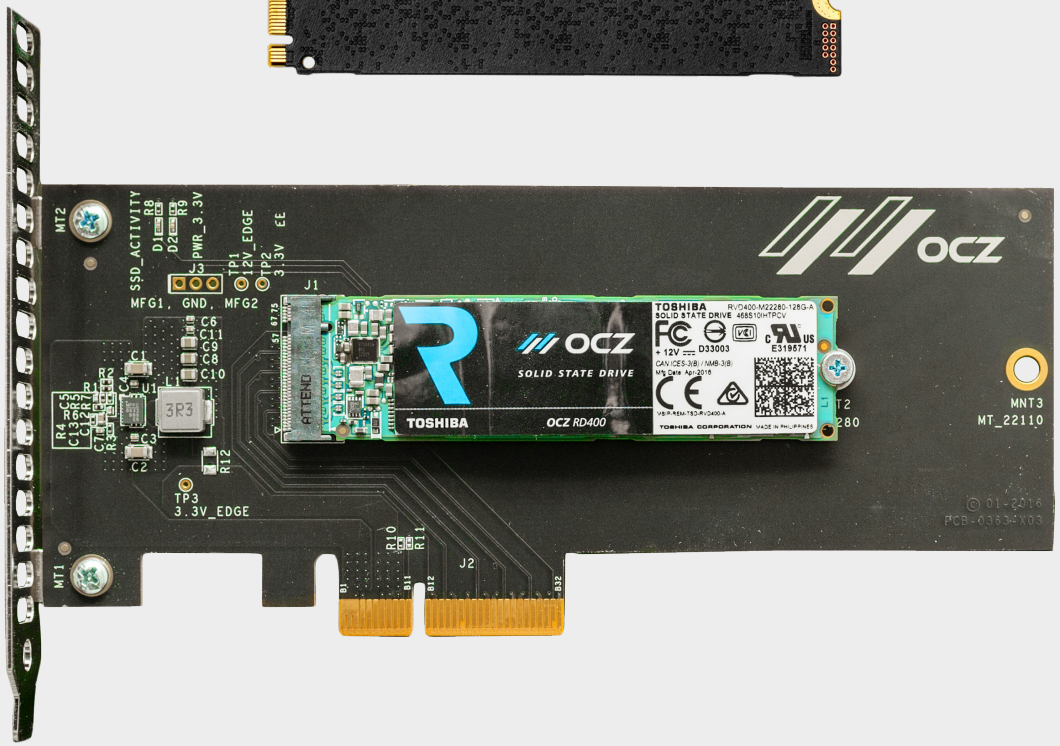


SAS

NVME DRIVES

These are Solid State storage devices which do not use the ATA or SAS protocols. They speak directly over PCI, no translation needed. This leads to much higher speeds and bandwidth.





952•466•1768

support@wipeos.com

www.wipeos.com