

# TrueNAS® ES12 Expansion Shelf Basic Setup Guide

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Version 1.8



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The TrueNAS ES12 is a 2U, 12-bay, SAS3 (12 Gb/s) expansion shelf with dual expansion controllers and redundant power supplies.

## 1 Unpacking the Unit

TrueNAS units are carefully packed and shipped with trusted carriers to arrive in perfect condition. If there is any shipping damage or any parts are missing, please take photos and contact iXsystems support immediately at [support@ixsystems.com](mailto:support@ixsystems.com) or 1-855-GREP4-iX (1-855-473-7449) or 1-408-943-4100.

Please locate and record the hardware serial numbers on the back of each chassis for quick reference.

Carefully unpack the shipping boxes and locate these components:



ES12 Expansion Shelf



ES12 Bezel



Set of rackmount rails. The rails have a specific front end, identified by a label visible on the left above. The front ends of the rails must be installed facing the front of the rack.



A total of 12 populated or empty “air baffle” drive trays. Trays must be installed in all bays to maintain proper airflow for cooling. Up to ten drive trays are packed in a cardboard tray. Additional drivetrays are packed with the accessory kit.



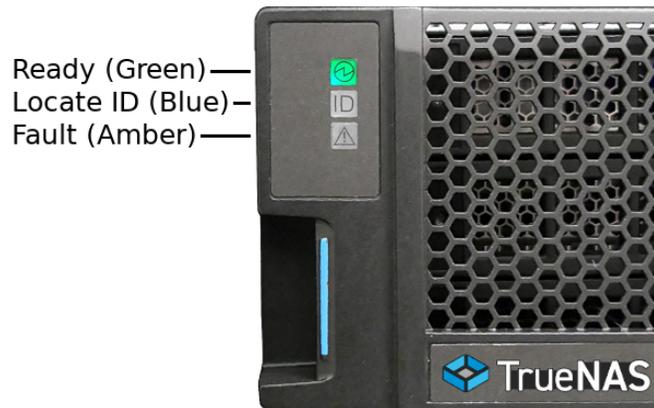
Accessory kit with 2 IEC C13 to NEMA 5-15P power cords, 2 IEC C13 to C14 cords, and a set of velcro cable ties.



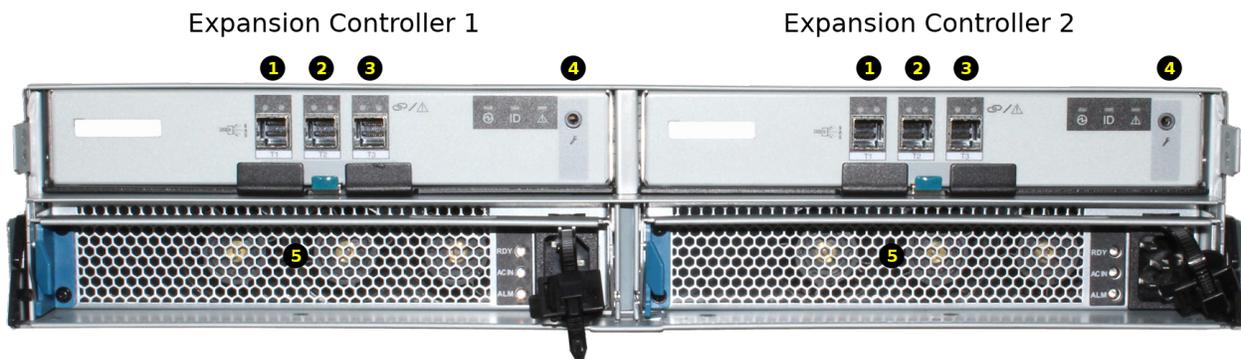
Two 3-meter Mini SAS HD to Mini SAS HD cables.

## 2 Become Familiar with the ES12

The ES12 has front panel indicators for power, locate ID, and fault. The fault indicator is on during the initial power-on self-test (POST) and turns off during normal operation. It turns on if the TrueNAS software generates an alert.



The ES12 has two expansion controllers in a side-by-side configuration:



- **1-3:** HD Mini SAS3 connectors (T1-T3)
- **4:** Debug port (TrueNAS internal use only)
- **5:** Redundant power supplies

### 3 Rail Kit Assembly

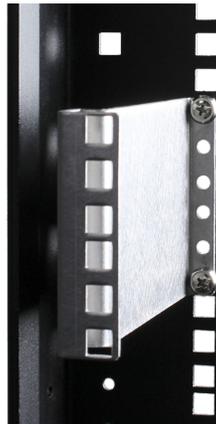
On racks that are 30 inches deep or less, skip to "3.2 Rail Spring".

#### 3.1 Rail Extenders

Racks from 31 to 36 inches deep require installation of the included rail extenders. For these deeper racks, install cage nuts on the outside rear of the rack. The tabs on the cage nuts must be horizontal as shown.



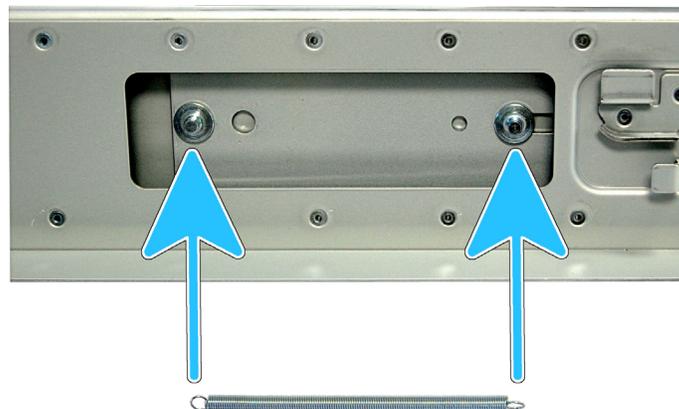
Using the included bolts, install the rail extender inside the rear of the rack. Repeat the process for the second extender, which is a mirror image of the first.



**Extender Installed  
Viewed from Inside the Rack**

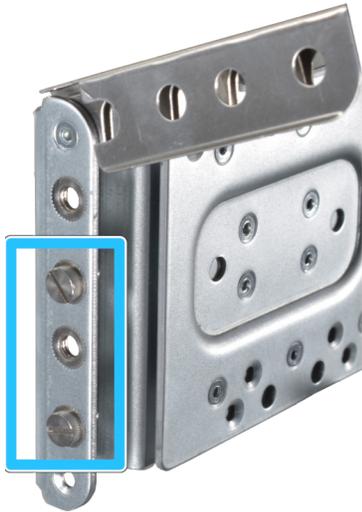
#### 3.2 Rail Spring

If not already present, install a spring on the silver posts in the side of each rail.



### 3.3 Attaching Rails to the Rack

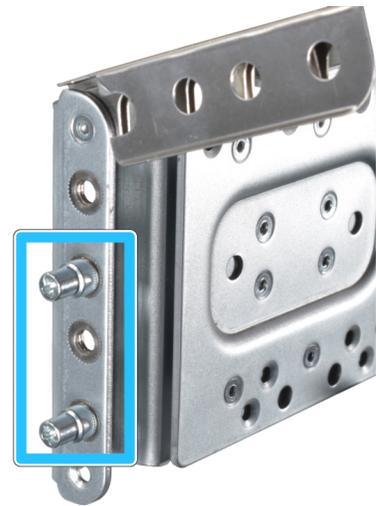
Chassis rails are configured to attach to round hole racks. Additional pins are included in the accessory kit to configure the rails for square or 4mm hole racks. To reset the rails to fit a square or 4mm hole rack, unscrew the pins at each end of the rails and replace them with the correct pins.



**Round Hole Rack Pins**

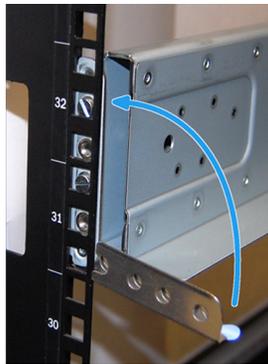
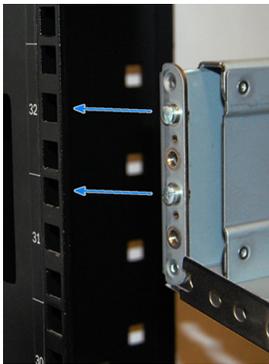


**Square Hole Rack Pins**



**4mm Hole Rack Pins**

To secure a rail to the rack, open the clamp latches on the ends of each rail. Place the rail in the rack with the front end toward the front of the rack, aligning the pins on both ends of the rail with the mounting holes in the rack. Swing the clamp latch closed to hold the rail in place. Use two of the supplied screws to secure the back end of the rail in place. Repeat the process for the second rail.



**Caution: Two people are required to safely lift the chassis for rack installation or removal.** Do not install drives until after the chassis has been installed in the rack, and remove all drives before removing the chassis from the rack. Carefully place the chassis onto the rails mounted in the rack. Push the chassis in until the ears are flush with the front of the rack. If needed, attach the bezel. Use two of the supplied screws to secure each ear to the rack.

## 4 Install Drive Trays

TrueNAS appliances only support qualified hard drives and SSDs. Contact the Sales Team if you need more drives or replacements. Adding unqualified drives to the system voids the warranty. Call Support if drives are improperly installed in trays.



Place the tray on a flat surface (1), mount the hard drive into the tray with the connector to the rear of the tray (2), and secure the hard drive in the tray with four screws, two on each side. (3).

Drive trays are used to mount drives in the chassis. Each drive tray has LEDs that denotes its current status.

Drive Tray LED's	
Light Color/Behavior	Status
Solid Blue	Normal/Hot Spare
Blinking Blue	Activity
Solid Amber	Issue/Fault/Identify

A tray must be placed in each drive bay to maintain proper air flow for cooling. If fewer than twelve drives are connected, empty "airbaffle" trays must be placed in the empty bays. A standard drive tray installation order simplifies support and is strongly recommended:

- SSD drives for write cache (W), if present
- SSD drives for read cache (R), if present
- Hard drives or SSD drives for data storage
- Air baffle filler trays to fill any remaining empty bays

Install the first drive tray in the top left drive bay. Install the next drive tray to the right of the first. Install remaining drive trays to the right across the row. After a row is filled with drives, move down to the next row and start again with the left bay. This example shows the proper order for a write cache (W) SSD, a read cache (R) SSD, eight hard drives, and two empty air baffle trays.

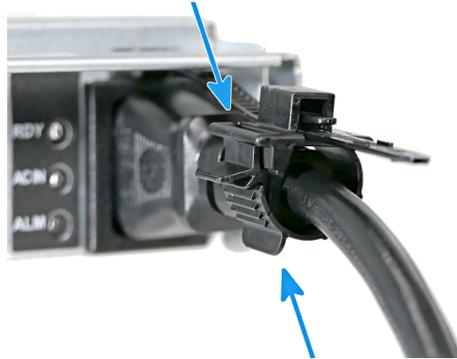


To load an individual drive tray into a bay, press the blue button to open the latch. Carefully slide the tray into a drive bay until the left side of the latch touches the metal front edge of the chassis, then gently swing the latch closed until it clicks into place.



## 5 Connect Power Cords

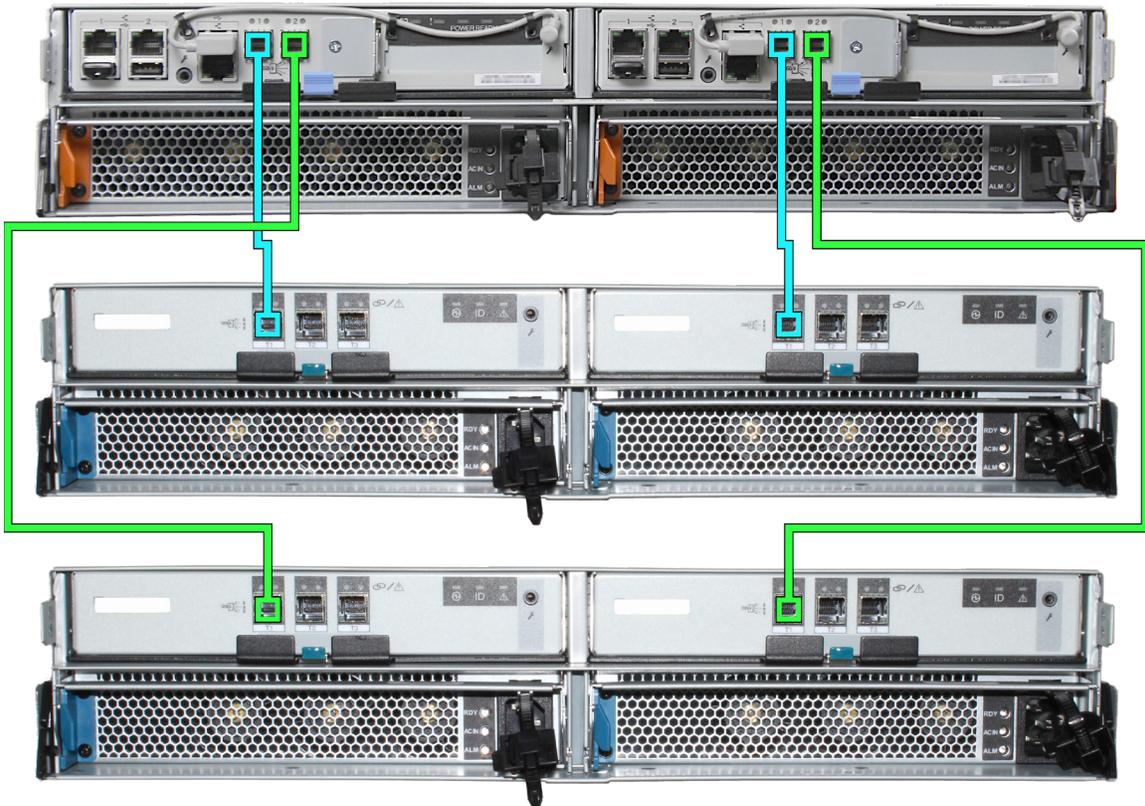
**Do not plug the power cords into a power outlet yet.** Connect a power cord to the back of one power supply. Place the cord in the plastic clamp and press the tab into the latch to lock it in place. Repeat the process for the second power supply and cord.



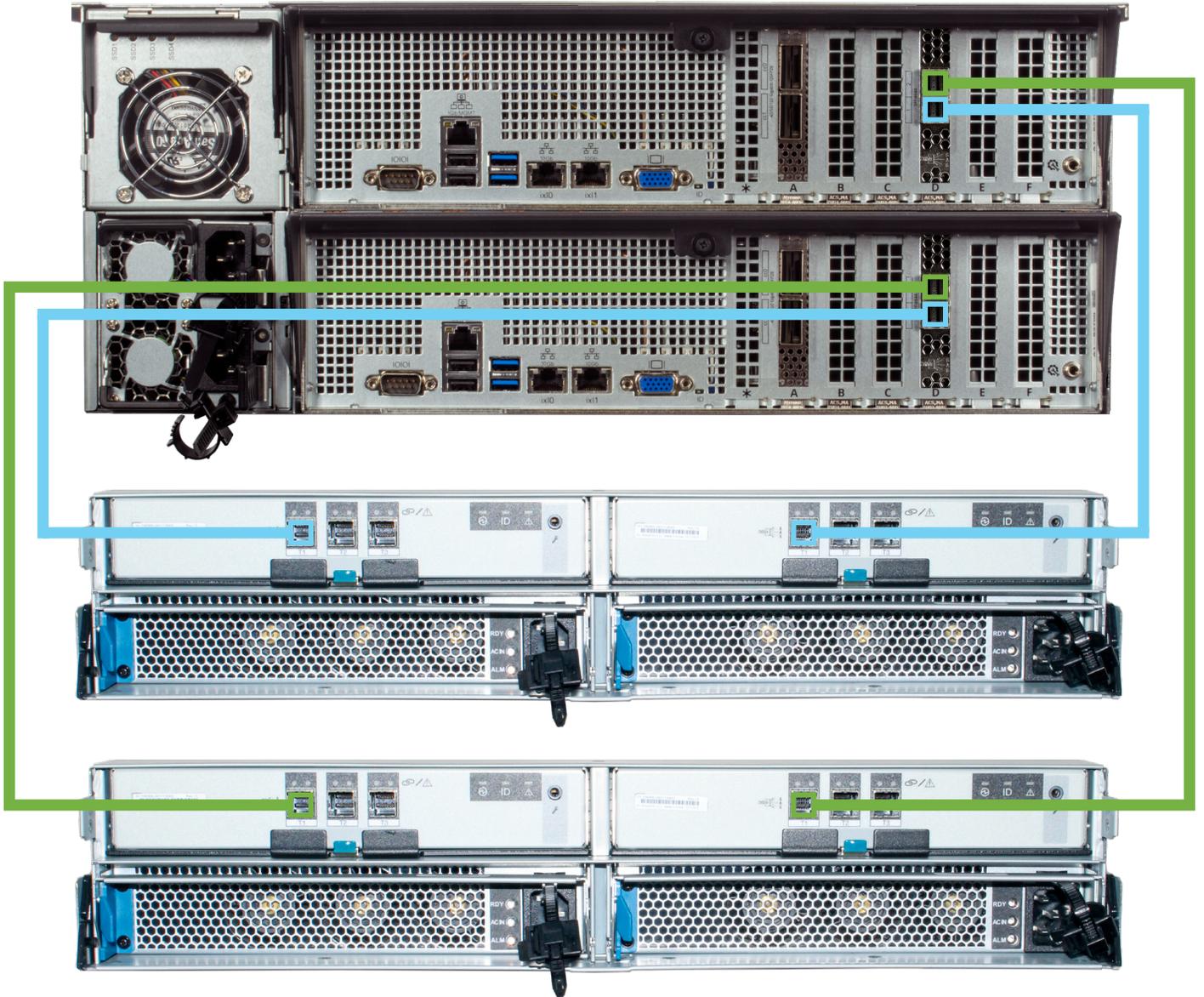
## 6 Connect SAS Cords

Plug the ES12 power cords into power outlets. **Wait two minutes for the drives to start.** The ES12 is compatible with several TrueNAS systems. Typical SAS cable connections for up to two ES12 expansion shelves on TrueNAS High Availability (HA) systems are shown here.

### 6.1 X-Series

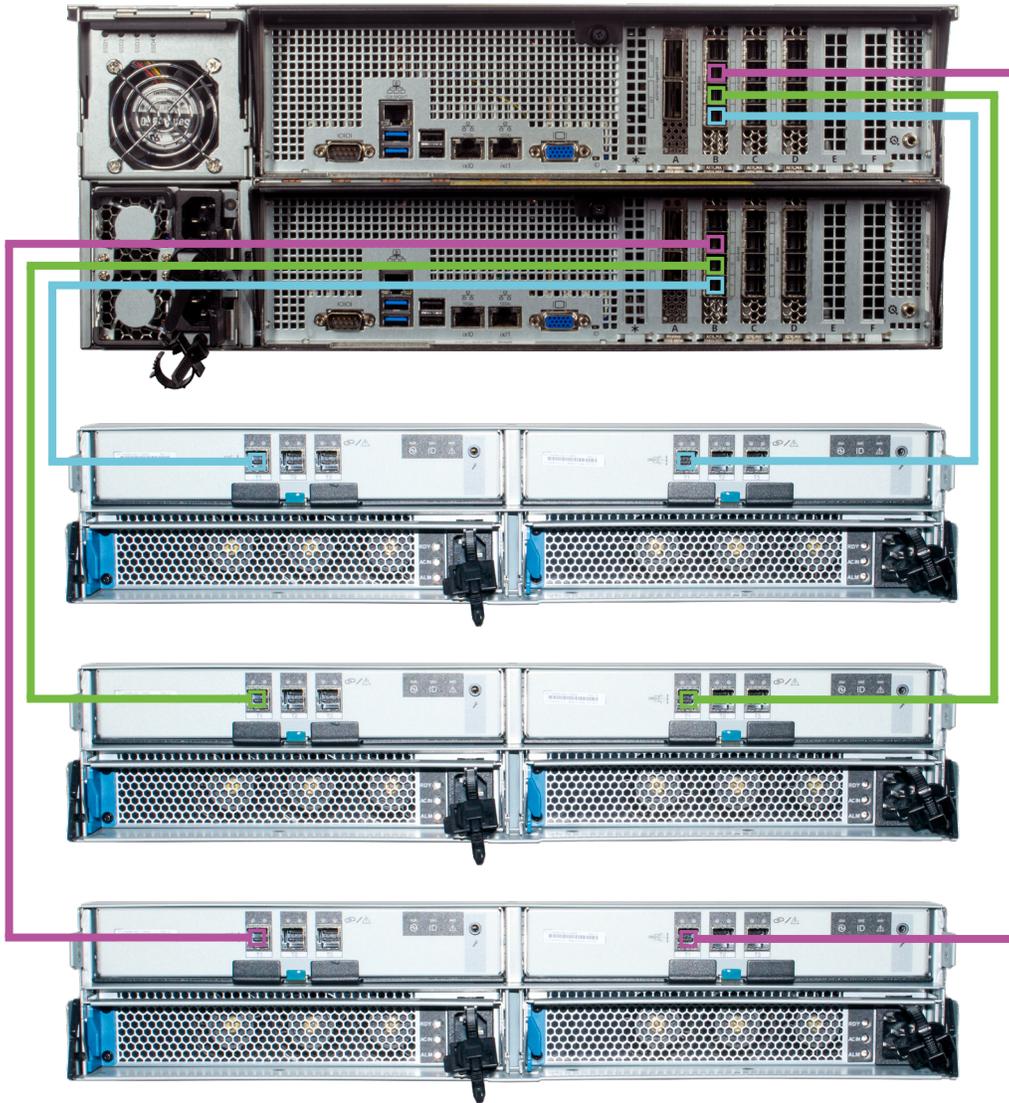


## 6.2 M40



## 6.3 M50/M60

The M50 supports up to 8 Expansion Shelves and the M60 supports up to 12. When wiring more than 4 Expansion Shelves to an M-Series, follow the numeric labelling on the SAS expansion slots.



## 7 Install Bezel (Optional)

The included bezel is not required for operation. If desired, install the bezel by aligning it with the pins on the bezel ears and pressing it into place.

## 8 Software Documentation

The TrueNAS Documentation Hub has software configuration articles and additional hardware documentation for TrueNAS products. It is available by clicking **Guide** in the TrueNAS web interface or going directly to <https://www.truenas.com/docs>.

The TrueNAS Community is another great resource for collaboration and research! The friendly and helpful community is available at <https://www.truenas.com/community/>.

## 9 Contacting iXsystems

For assistance, please contact iX Support:

Contact Method	Contact Options
Web	<a href="https://support.ixsystems.com">https://support.ixsystems.com</a>
Email	<a href="mailto:support@ixsystems.com">support@ixsystems.com</a>
Telephone	Monday-Friday, 6:00AM to 6:00PM Pacific Standard Time: <ul style="list-style-type: none"><li>• US-only toll-free: 1-855-473-7449 option 2</li><li>• Local and international: 1-408-943-4100 option 2</li></ul>
Telephone	Telephone After Hours (24x7 Gold Level Support only): <ul style="list-style-type: none"><li>• US-only toll-free: 1-855-499-5131</li><li>• International: 1-408-878-3140 (International calling rates will apply)</li></ul>

## Notes: