At the end of this unit of training, you will be able to:

- Name the various components of Navy Cash hardware.
- Describe the functionality of Navy Cash devices.
- State the purpose of the Navy Cash software programs.
- State where to get support for Navy Cash system problems.
SysAdmin Responsibilities

- Responsibilities of the Navy Cash system administrator include:
  - Set up of user accounts
  - Support Disbursing in network issues as required
  - Support troubleshooting routines

Note: Support from the Shipboard IT personnel may be required at various times.
User Accounts

- “NC-Admin” user account is the only account that should be used to log into the server.
- Passwords for the nc-admin, ncinstall, and ncship-admin accounts are provided during the installation and should only be changed utilizing the Password Rotation Tool.
- Normal users, i.e. ship’s personnel, will be directed to change their passwords by the system when needed in accordance with current security settings.
## User Accounts (cont)

<table>
<thead>
<tr>
<th>User Name</th>
<th>Description</th>
<th>Privileges</th>
</tr>
</thead>
<tbody>
<tr>
<td>nc-admin</td>
<td>Administrator; member of Administrator Group</td>
<td>All normal SYSADMIN rights</td>
</tr>
<tr>
<td>iusr_cluster</td>
<td>Non-interactive account used for Cluster Service; member of Administrator Group</td>
<td>Act as part of the OS.</td>
</tr>
<tr>
<td>nc-disbo</td>
<td>Template for Disbursing Staff</td>
<td>Backup rights; access to f:\files\navydata\files</td>
</tr>
<tr>
<td>nc-store</td>
<td>Template for Sales Staff</td>
<td>Backup rights; access to f:\files\navydata\files</td>
</tr>
<tr>
<td>nc-post</td>
<td>Template for Postal Staff; not currently used!</td>
<td>Backup rights; access to f:\files\navydata\files</td>
</tr>
</tbody>
</table>
There are other system accounts (ncinstall and ncship-admin) that are not used unless needed.
Navy Cash System Hardware
Navy Cash System Hardware

- (2) Dell PowerEdge R310 or R320 Servers
- (1) Overland Storage Snap Server 410, DX1, or XSR Network Attached Storage (NAS)
- Dell Optiplex Workstation
- Dell Latitude Laptop
- Cisco 2960 Series Switches
- ITC CAD
- BlueBird MT280 Mobile Point of Sales Device (POS)
- VeriFone MX925 Fixed Point of Sale Device (POS)
- NCR Cashless Kiosk
Navy Cash Basic System Diagram

- Mobile POS
- Fixed POS
- CATM
- Vending CAD
- Fixed POS
- LAPTOP
- Workstation
- Navy Cash Servers with Overland Storage
- SHF / Pier Connection
- A & J Rack
- Ship's Backbone/Edge Switch

SAIC PROPRIETARY
A clustered server is a combination of two servers and a Network Attached Storage (NAS) device that is set up as a RAID. Its purpose is to provide a highly reliable and redundant system.

The cluster drives appear to clients as a single resource.

Navy Cash uses an active/passive clustering solution.
Navy Cash uses two servers, designated as Node 1 and Node 2. Node 1 is the default server and Node 2 is the backup.

Any problems with Node 1 will cause the system to automatically fail-over to Node 2.
Example of a Clustered Server Layout

Node 1

Node 2

NAS / RAID
Each Dell PowerEdge Server consists of:

- Intel Pentium G6950 2.8 GHz or higher processor.
- 10/100MB NIC (w/ 2 ports).
- 10/100/1000MB NIC (w/ 2 ports).
- 2x 250 GB or 2x 500 GB Hard Drives.
- DVD-ROM Drive.

Servers are delivered pre-configured
PowerEdge Server Controls and Indicators

- Item 1: Power
- Item 2/3: HDD Health
  * green = normal, amber = degraded/system shutdown, red = critical
Overland Storage Unit

- Overland Storage Network Attached Storage (NAS) device consists of
  4x 500GB or 4 1TB SATA drives (minimum size).
- RAID (Redundant Array of Independent Disks) Configured.
Overland Storage

- Power switch at top supplies power

Item 1: Power (steady green = operating normally, off = not operating, amber = problem)

Item 2: Status
(1 blinking green = up and running, 2 blinking green = booting up, 3 blinking green = shutting down, amber = problem)

Item 3: Network 1 (steady green = connected)

Item 4: Network 2 (steady green = connected)
DX1 / XSR Overland Storage Indicators

- Overland Storage
  - Power switch at top supplies power

- Item 1: Power
  (steady green = operating normally, off = not operating, amber = problem)

- Item 2: Status
  (1 blinking green = up and running, 2 blinking green = booting up, 3 blinking green = shutting down, amber = problem)

- Item 3: Network 1 (steady green = connected)

- Item 4: Network 2 (steady green = connected)
Dell Workstation consists of:

- Intel Dual Core or higher Processor
- Minimum 160 GB Hard Drive
- Minimum 2 GB RAM
- DVD ROM
- (8) USB Ports
- (1) 10/100/1000 LAN Interface Card
Dell Latitude Laptop

Dell Laptop

– Intel i3 Processor or higher
– Minimum 2 GB RAM
– DVD/CD
– (4) USB Ports
– (1) SD Card Slot
– (1) 10/100/1000 LAN Interface Card
Cisco Catalyst 2960 Switch

- The Cisco Switch enables users to connect to network devices.
- Any change in Navy Cash Hardware (CAD, POS, ATM Screen) requires the new MAC address to be added to all NC Switches using the Cisco Network Assistant.
Ship’s Switch Configuration

- Network adapters and switch ports must have matching duplex levels and transfer speed settings. Do not set switch ports to “auto”; use 10/full or 100/full depending on speed of network.
Navy Cash Devices
TCP/IP Data

- All of the Navy Cash devices use statically assigned IP addresses. They also utilize a configuration file located on the servers. The Navy Config file is used to determine the location of the devices in the system.

*Note:* No changes are to be made to the Navy Cash config file.
Card Access Device (CAD)

- Located in various vending machines.
- Slot for card insertion.
- 3 Hidden keypads show:
  - Version status.
  - Terminal ID number.
  - IP/Gateway/DNS.
  - Transaction/Error status.
- Can function in online or offline mode.
- Contains SD Card for redundancy.
BlueBird Mobile (MPOS) Device

- Perform sales and refund transactions on this unit at or in merchant locations and with foreign vendors.
- May be used in online or offline mode.
- Functions only in what was formerly called normal mode (stand-alone).
- Contains SD Card for redundancy.
BlueBird (MPOS) Device (cont)

- Alphanumeric keyboards and LED screen.
- Two slots for cards (only the bottom slot is used).
- Card must be inserted with front of card, chip in, facing you.
- Keyboard on device is used by customer to enter PIN when making a transaction.
VeriFone Fixed (FPOS) Device

- Perform sales and refund transactions on this unit in Disbursing.
- May be used only in online.
- Functions in what was formerly called proxy mode (attached to NC Switch and synced with Workstation/laptop Disbursing Application).
- Contains SD Card for redundancy.
NCR Cashless ATM

- Transfers money to and from chip, strip and home bank.
- Must be online with connection to server in order to function.
- Transactions are immediately logged with server.
Navy Cash System Software
Software Programs

Upon completion of installation, the servers, workstation(s), and laptop(s) are configured and fully operational. Do not install any other software on the server, workstation(s), or laptop(s) unless directed to do so by the Navy Cash.
The following programs are loaded on each node:

- Windows Server 2008 Enterprise R2
- Microsoft Cluster Server (MSCS)
- Oracle 11.2.0.x

» Configured with Oracle Failsafe to prevent downtime. Oracle Failsafe Manager is used to startup & shutdown the data base.
Software Programs (cont)

- The following programs are loaded on each node:
  Navy Cash Listener/Parser (NC Service).
  » Provides communication between Navy Cash server and devices.
Navy Cash System Requirements
IT21 Practices

- IT21 practices, with regards to auditing event logs and physical security, should be followed in addition to Navy Cash documentation.

- Do not apply IAVA patches Independently on the Navy Cash servers. Navy Cash Technical Support will provide all necessary and approved updates.

- When in doubt, contact the Navy Cash Central Support Unit (CSU).
Each node is assigned its own static IP address that resides on the ISNS/GIG-E/ORT/SWAN/CANES backbone. Additionally, there are additional static IPs assigned to the RAID that are not broadcast.

- ISNS/GIG-E/ORT/SWAN/CANES provides backbone and off-ship connectivity required for Navy Cash. If there is no LAN connectivity, the server will not communicate with the Navy Cash devices.
An ACL addition must be made on the ship’s router to allow the Navy Cash servers (both nodes’ External IP addresses) off-ship communication.

– Required for both Node 1 and Node 2 IP addresses, contact SPAWAR for current ACL entries.

– If the Navy Cash IP addresses are not given access off the ship via the ship’s router, the server cannot send or receive updates.
Power On/Off
The servers will need to be powered off when you know power is going to be cut off to the area where the server is located.

Note: You should never try and run the Navy Cash servers powered by only the UPS. The purpose of the UPS is to allow for proper shut-down of the system if power is lost.
Power On Sequence

- **Step 1**: Press the power button (do not hold for more then 1 second) to power on Overland Storage unit first. You will see the HDD lights and the Health light blink rapidly. Wait until the Health light (to the right of the power button) is not blinking and is a steady green. This may take several minutes.

- **Step 2**: Apply power to the monitor

- **Step 3**: Remove Faceplate. Power on Node 1 and login as `nc-admin`.

- **Step 4**: Once Node 1 is at `<CTL-ALT-DEL)`, remove faceplate. Power on Node 2 and login as `nc-admin.`
Step 5: Replace Faceplate on both nodes.

Step 6: On Node 1, click Start and locate Command Prompt.

Step 7: Right click Command Prompt and select “Run as administrator.”

Step 8: In the command prompt window, type the following:
- cluster group “cluster group” /on (press ENTER button).
- cluster group “navy cash” /on (press ENTER button).

Step 9: Launch Failover Cluster Manager and ensure all resources show ONLINE.
Power Off Sequence

- **Step 1**: On the controlling node, open an elevated command prompt.
- **Step 2**: Type `cluster group “navy cash” /off <ENTER>`.
- **Step 3**: Type `cluster group “cluster group” /off <ENTER>`.
- **Step 4**: Open up IE as administrator and navigate to [http://10.10.10.10](http://10.10.10.10) (or [http://10.10.11.10](http://10.10.11.10) on Node 2). Enter admin for ID and Password.
Power Off Sequence (Cont)

- **Step 5**: Click on Maintenance.
- **Step 6**: Click on Shutdown / Restart.
- **Step 7**: Click on Shutdown.
- **Step 8**: Once NAS is completely powered off, shut down both nodes using normal Start -> Shutdown method.
- **Step 9**: NEVER USE POWER BUTTON ON NAS TO SHUT SYSTEM OFF; DOING SO WILL EVENTUALLY CAUSE LOSS OF CONFIGURATION.
Navy Cash Support
System Support

- For information on system hardware, refer to the accompanying technical manuals and documentation.
- Disbursing will handle the majority of technical calls on the Disbursing Application.
- For support:
  - Tel: 1-866 6NAVYCASH 1-866 662-8922
  - Fax: 1-813 533-5711
  - Web: www.navycash.com
  - Email: navycashcenter@frb.org
  - Navy Cash Central Support Unit (CSU) is available 24X7
Summary

- If the Navy Cash Service in Failover Cluster Manager is down, neither the NCR Cashless ATM, laptop, or Ingenico POS will connect to the server.

- Ship’s force must not reallocate the blades, switches, or ISNS/CANES switch ports devoted to Navy Cash.
Questions