



Navy Cash Training System Administration Unit 1



Objectives

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)

User Name	Description	Privileges
nc-admin	Administrator; member of Administrator Group	All normal SYSADMIN rights
iusr_cluster	Non-interactive account used for Cluster Service; member of Administrator Group	Act as part of the OS.
nc-disbo	Template for Disbursing Staff	Backup rights; access to f:\files\navydata\files
nc-store	Template for Sales Staff	Backup rights; access to f:\files\navydata\files
nc-post	Template for Postal Staff; not currently used!	Backup rights; access to f:\files\navydata\files

User Accounts (cont)

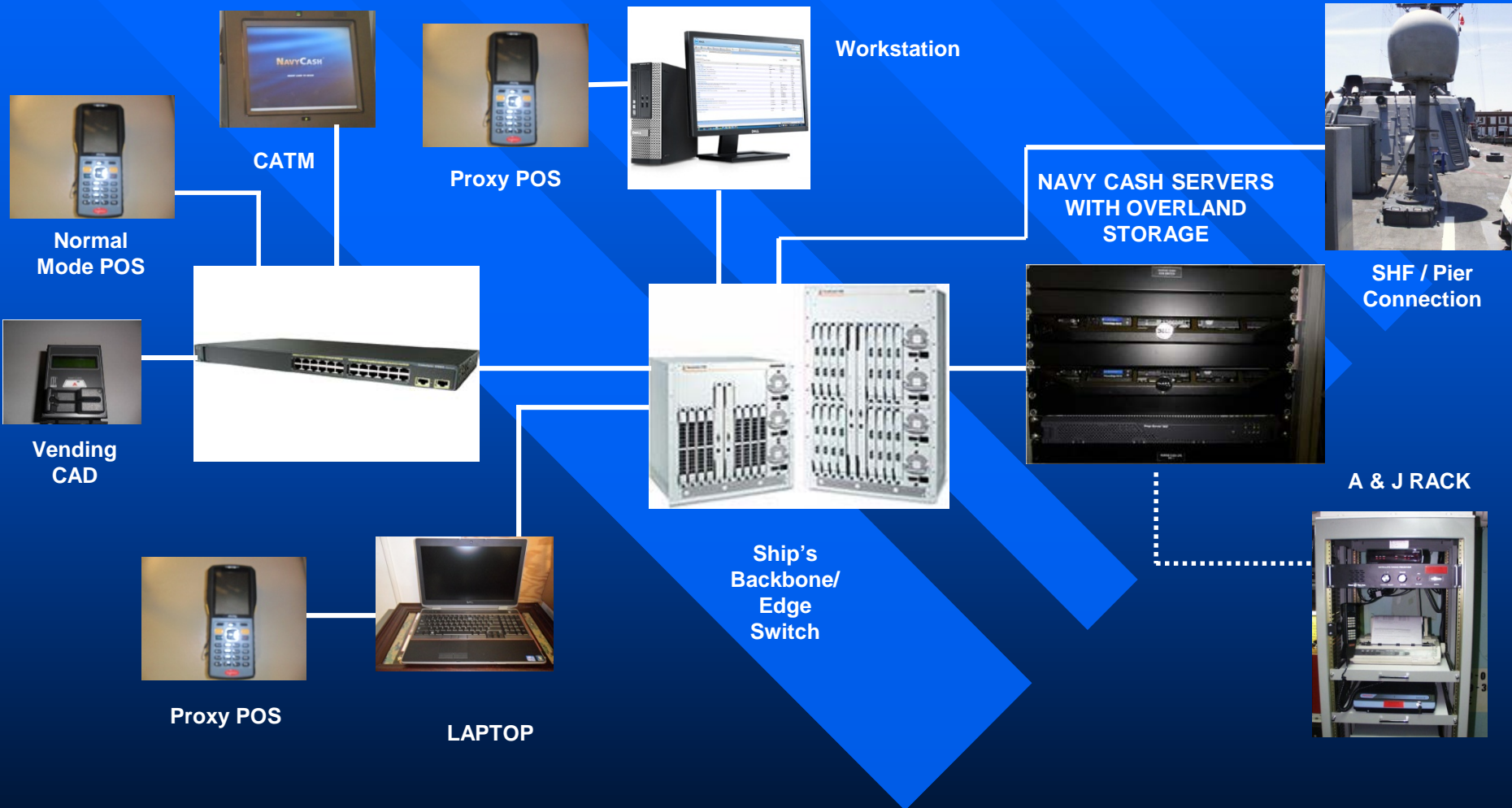
- There are other system accounts (ncinstall and ncship-admin) that are not used unless needed.

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 Switch
- ITC CAD
- Ingenico Point of Sales Device (POS)
- NCR Cashless Kiosk

Navy Cash Basic System Diagram



Clustered Server

- 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.



Clustered Server (cont)

- 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

Dell PowerEdge R310 / R320 Server



- 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

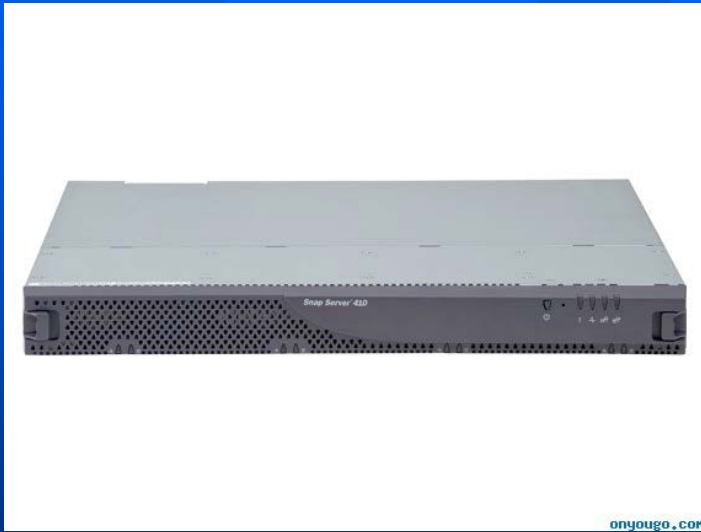


- Item 1: Power

- Item 2/3: HDD Health

- * green = normal, amber = degraded/system shutdown, red = critical

Overland Storage Unit

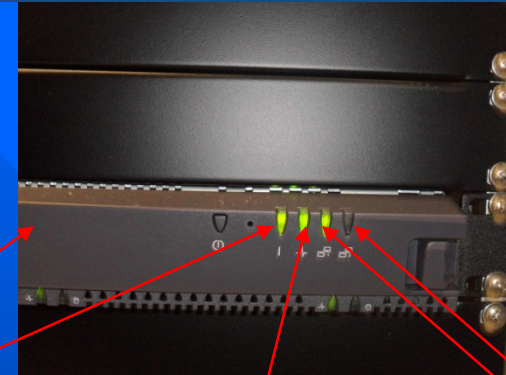


- Overland Storage Network Attached Storage (NAS) device consists of
 - 4x 500GB or 4 1TB SATA drives (minimum size).
- RAID (Redundant Array of Independent Disks) Configured.

410 Overland Storage Indicators

- Overland Storage

- Power switch at top supplies power



Power Switch Power Indicator

Status

Network 1/2

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

- Item 2: Status

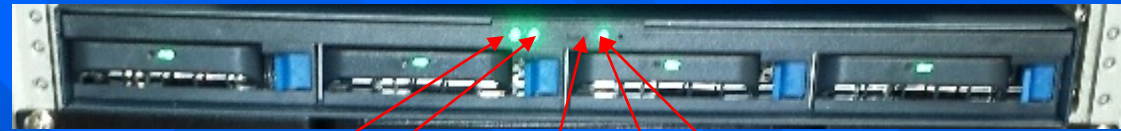
(1 blinking green = up and running, 2 blinking green = booting up, 3 blinking green = shutting down, amber = problem)

- 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)

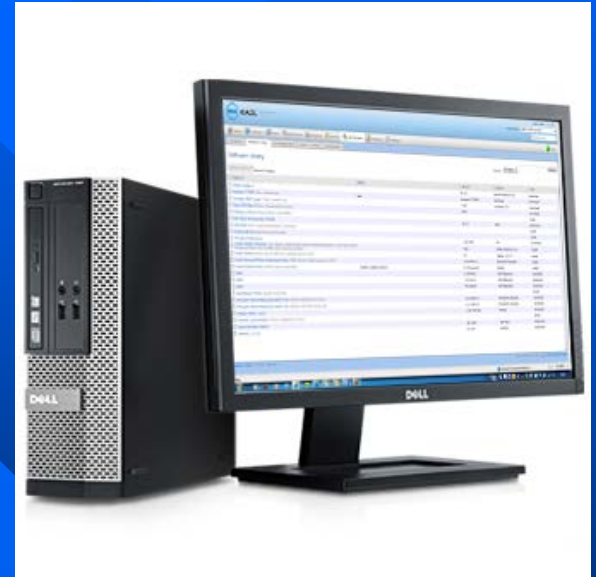
- Item 3: Network 1 (steady green = connected)

- Item 4: Network 2 (steady green = connected)

Dell Optiplex Workstation

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 Base, 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

IP/TCP 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.



Ingenico (POS) Device

- Perform sales and refund transactions on this unit at or in merchant locations, Disbursing, and with foreign vendors.
- May be used in online or offline mode.
- Functions in proxy mode (attached to computer) or normal mode (stand-alone).
- Contains SD Card for redundancy.



Ingenico (POS) Device (cont)

- 2 Alphanumeric keyboards and 2 LED screens.
- Two slots for cards (only the side slot is used).
- Card must be inserted with back of device (silver side) facing you.
- Keyboard on silver side of device is used by customer to enter PIN when making a transaction.



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.

Software Programs (cont)

- The following programs are loaded on each node:
Windows Server 2008 Enterprise R2 Service Pack 1
 - 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).

Static IP Assignment

- Each node is assigned it's own static IP address that resides on the ISNS backbone. Additionally, there are additional static IPs assigned to the RAID that are not broadcast.
 - ISNS 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.

Ship Router Access

- 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

Powering Equipment 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 than 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.

Power On Sequence (Cont)

- **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> (or <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

