Navy Cash Training System Administration Unit 1

Ver 1.4.7.4

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
disbo-template	Template for Disbursing Staff, copy this account to create new users	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 R430 / R440 Servers
- (1) Overland Storage Snap Server XSR Network Attached Storage (NAS)
- Dell Micro Workstation
- 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

KIOSK

FIXED POS

WORKSTATION

NAVY CASH SERVERS WITH OVERLAND STORAGE

SHF / PIER CONNECTION

VENDING CAD

NAVY CASH CISCO SWITCH

SHIP'S BACKBONE / EDGE SWITCH

A&J RACK

FIXED POS

WORKSTATION

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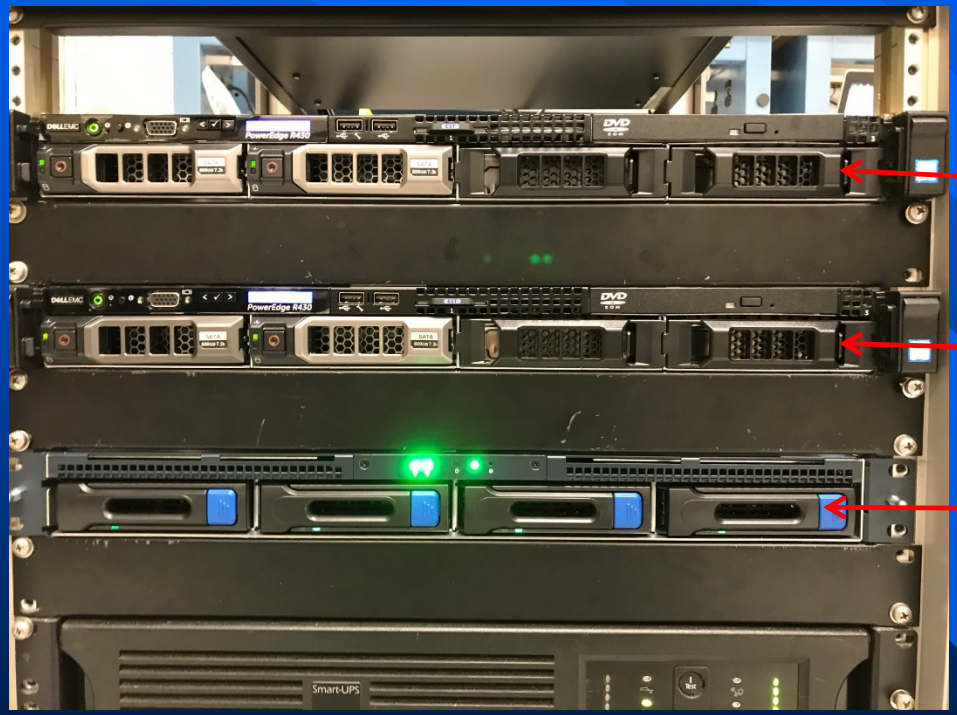
Clustered Server

- A clustered server is a combination of two servers and a Network Attached Storage (NAS). 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. Each Node has a Member Server (MS) and a Virtual Machine that is set up as a Domain Controller (DC). 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

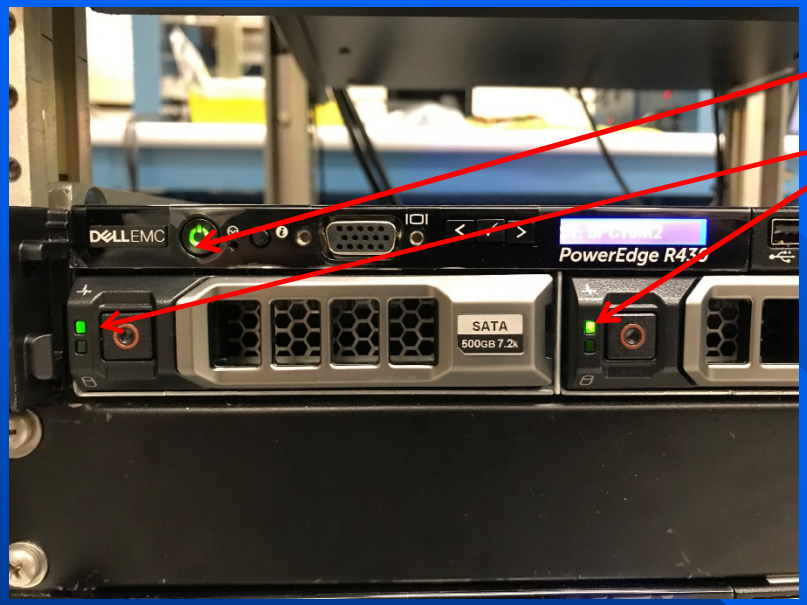


Dell PowerEdge R430 / 440 Server

- 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 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

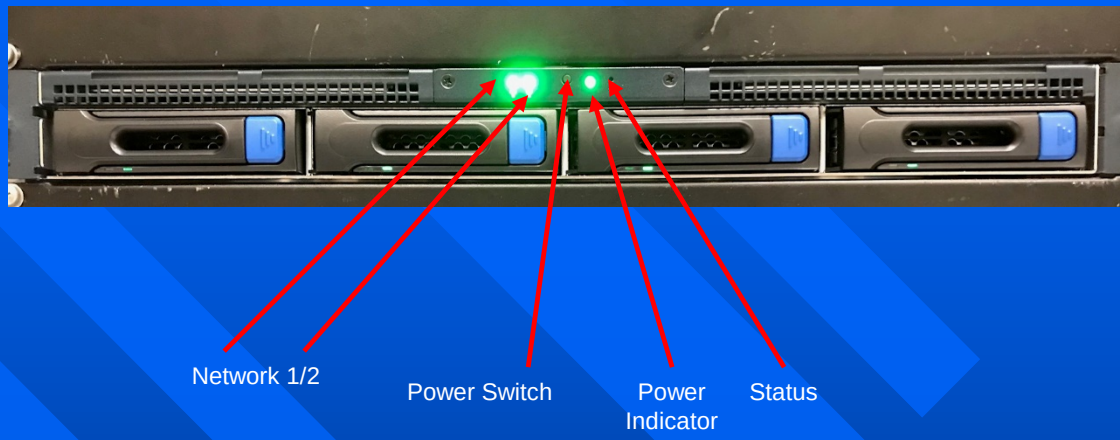
* green = normal, amber = degraded/system shutdown, red = critical

Overland Storage Unit

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

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 / no light = 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)

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Dell Optiplex Workstation

Dell Workstation consists of:

- Intel Dual Core or higher Processor
- Minimum 250 GB Hard Drive
- Minimum 2 GB RAM
- DVD ROM
- (6) USB Ports
- (1) 10/100/1000 LAN Interface Card

Cisco Catalyst 2960 Switch

- The Cisco Switch enables users to connect to network devices.

Ship's Switch Configuration

- Network adapters and switch ports must have matching duplex levels and transfer speed settings. Ensure that speed and duplex settings are matched on both sides of the cable. If one side is set to Auto, set the other side to match.

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.

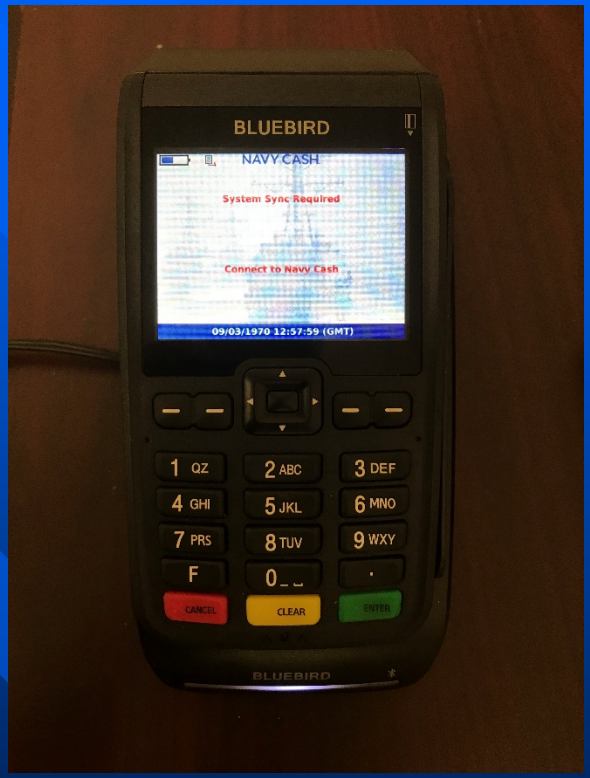
Note: No changes are to be made to the Navy Cash config file.

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

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.

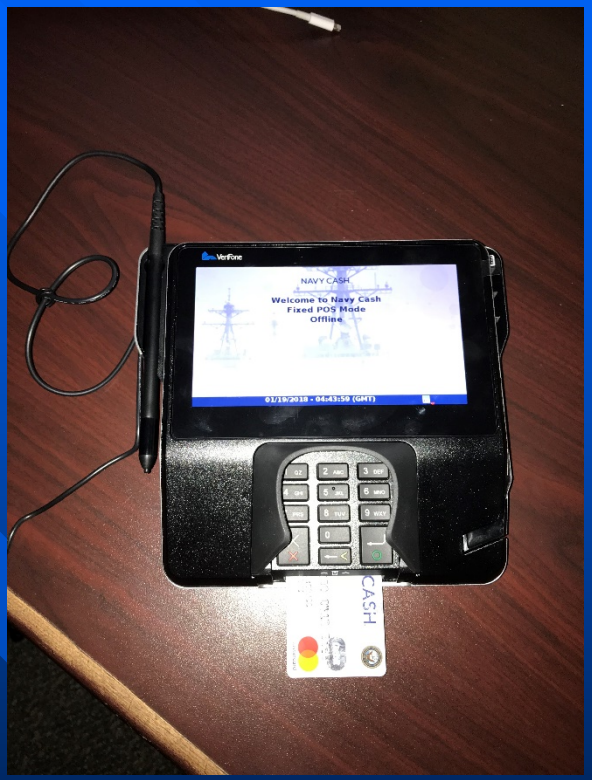


BlueBird (MPOS) Device (cont)

- 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; if the servers are inaccessible, FPOS will be offline.
- Functions in what was formerly called proxy mode (attached to NC Switch and synced with Workstation/laptop Disbursing Application).
- Contains SD Card for redundancy.



Verifone 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.

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Navy Cash System Software

Ver 1.4.7.4

Software Programs

Upon completion of installation, the servers and workstations are configured and fully operational. Do not install any other software on the servers or workstation unless directed to do so by Navy Cash Technical Support.

Software Programs (cont)

- The following programs are loaded on each node: Windows Server 2012 Enterprise R2 Service Pack 2
  - 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 best 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/GIG-E/ORT/SWAN/CANES backbone. Additionally, there are additional static IPs assigned to the NAS 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.

Ship Router Access

- For ISNS/ORT, 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. For CANES, please refer to the HACSIM.
  - 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 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 or off. This may take several minutes.
- **Step 2**: Apply power to the monitor
- **Step 3**: Remove Node 1/MS1's faceplate. Power on Node 1/MS1 and login as nc-admin.
- **Step 4**: On Node 1/MS1, open Hyper-V Manager. Select DC1, right click, and select Start.

Power On Sequence (Cont)

- **Step 5:** Remove Node 2/MS2's faceplate. Power on Node 2/MS2 and login as nc-admin.
- **Step 6**: Open Hyper-V Manager, select DC2, right click, and select Start.
- **Step 7:** Replace Faceplate on both nodes.
- **Step 8:** Open Failover Cluster Manager.
- **Step 9:** Right click on ncsvr-cl.ncsvr-d.navycash.navy.mil, select More Actions, and select Start Cluster.

Power Off Sequence

- **Step 1**: On the controlling node, open Failover Cluster Manager.
- **Step 2**: Right click on ncsvr-cl.ncsvr-d.navycash.navy.mil, select More Actions, select Shut Down Cluster.
- **Step 3**: On the controlling node, open Internet Explorer.
- **Step 4**: Navigate to http://10.10.10.10 (or http://10.10.11.10 on Node 2/MS2). 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.
- **Step 9**: On Node 2/MS2, open Hyper-V Manager, select DC2, right click, select Connect, login to DC2 using the nc-admin account, and then select Shutdown.
- **Step 10:** On Node 1/MS1, open Hyper-V Manager, select DC1, right click, select Connect, login to DC1 using the nc-admin account, and then select Shutdown.

Power Off Sequence (Cont)

- **Step 11**: Shut down Node 2/MS2 using Start->Shutdown method.
- **Step 12**: Shut down Node 1/MS1 using Start->Shutdown method.

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

SAIC Redefining Ingenuity

Summary

- If the Navy Cash Service in Failover Cluster Manager is down, neither the VeriFone Cashless ATM, workstations, or POSs will connect to the server.
- Ship's force must not reallocate the blades, switches, or ISNS/CANES switch ports devoted to Navy Cash.

Questions