NCR VOYIX

NCR CX3 POS (7776)

User Guide

7776

BCC5-0000-5565
Issue G

© 2024 NCR Voyix. All rights reserved. Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

The product described in this document is a licensed product of NCR Voyix Corporation.

NCR RealPOS Terminals is a trademark of NCR Voyix Corporation in the United States and/or other countries. Other product names mentioned in this publication may be trademarks or registered trademarks of their respective companies and are hereby acknowledged.

Where creation of derivative works, modifications or copies of this NCR Voyix copyrighted documentation is permitted under the terms and conditions of an agreement you have with NCR Voyix, NCR Voyix's copyright notice must be included.

It is the policy of NCR Voyix Corporation to improve products as new technology, components, software, and firmware become available. NCR Voyix, therefore, reserves the right to change specifications without prior notice.

All features, functions, and operations described herein may not be marketed by NCR Voyix in all parts of the world. In some instances, photographs are of equipment prototypes. Therefore, before using this document, consult with your NCR Voyix representative or NCR Voyix office for information that is applicable and current.

Copyright © 2022—2024

By NCR Voyix Corporation
Atlanta, Georgia, USA
All Rights Reserved

Preface

Audience

This book is written for store personnel, system integrators, and field engineers.

Note

This document is NCR Voyix proprietary information and is not to be disclosed or reproduced without consent.

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

Table of Contents

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

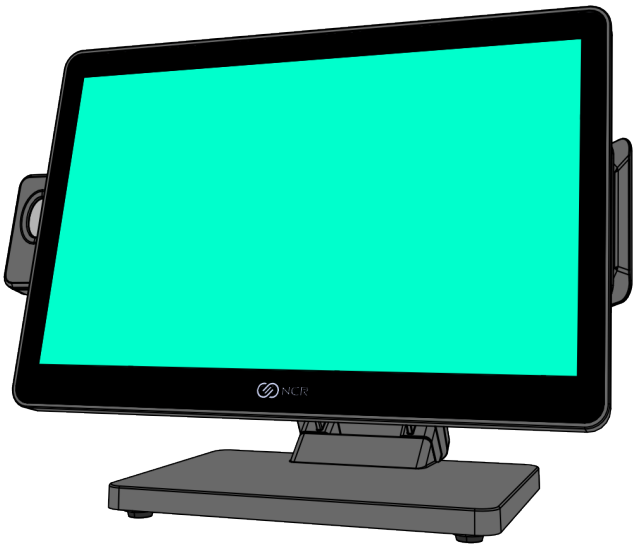
Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

Revision Record

Issue	Date	Remarks
A	Aug 2022	Initial release
B	Sep 2022	Added the following chapters: Power Management BIOS Updating Procedure APA Graphical Display
C	Feb 2023	Added the following: Video Memory to Specification section Current Leakage to G3 Mechanical Off section
D	Mar 2023	Installation Restrictions section: Added warning regarding scanner/scale
E	May 2023	Converted to Guild template Added Appendix: CX Display Touch Tool
F	May 2024	Changed ncr.com to ncrvoyix.com
G	Jun 2024	Converted to Voyix template

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

NCR CX3 POS (7776) Overview



CCP-82107

The NCR CX3 POS (7776) is powered by the 8th Gen Intel® Whiskey Lake U Core™ SoC i3 and Celeron® BGA on-board processor. The CX3 features a sleek design, packed with superior performance. It comes in a 15.6-inch display with a projected capacitive (PCAP) touchscreen.

Base Models

Model	Description
7776-1216-8801	Lead Unit - CX3, 15.6" PCAP, Cel 4205U, 120GB SSD, 8GB RAM, Stand, Configurable
7776-1316-8801	Lead Unit - CX3, 15.6" PCAP, i3 8145UE, 120GB SSD, 8GB RAM, Stand, Configurable

Features

Feature		Description
Port A (Right Side) Features	F141	NCR Encrypted MSR
	F143	2-in-1 Sign-in (Dallas Key/Addimat)

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

Feature		Description
Port B (Left Side) Features	F151	Biometrics
Port D (Head Mounted) Features	F451	APA (All-Point Addressable) Graphical Display
Power Cord	F100	US Power Cord
	F101	International Power Cord

Optional Features

Optional Feature		Description
Ethernet Cable	F110	10/100/1000 Ethernet Cable

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

Operating Systems

The OS image and base platform drivers is pre-loaded on the solid state drive prior to shipment. The POS must be configured with a solid state drive.

Product ID	Product ID Description
7776-F719	Windows 10 IoT Enterprise 2019 LTSC Entry (64 bit) (UEFI BIOS) Embedded OS This Entry license must be used with Celeron CPU.
7776-F720	Windows 10 IoT Enterprise 2019 LTSC Value (64 bit) (UEFI BIOS) Embedded OS This Value license must be used with i3 CPU.
7776-F739	Orderman Windows 10 IoT Enterprise 2019 LTSC Entry (64 bit) (UEFI BIOS) Embedded OS
7776-F740	Orderman Windows 10 IoT Enterprise 2019 LTSC Value (64 bit) (UEFI BIOS) Embedded OS

Base client and third-party software are also available on the public NCR Platform Software Website: **http://www5.ncr.com/support/support_drivers_patches.asp?Class=External\display**

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

Specifications

Feature	Details	
Chipset	Whiskey Lake-U	
Processor	Celeron 4205U	Core™ i3-8145UE
Clock Speed (base)	1.80 GHz	2.20 GHz
Max. Turbo Frequency	–	3.9 GHz
Cache	2MB	4MB
Threads	2	4
Cores	2	2
Thermal Design Power	15 Watts	15 Watts
Video Memory	32GB (max)	32GB (max)
AMT	No	No
Intel vPro	No	No
Image Recovery	Yes (via keyboard function)	Yes (via keyboard function)
Odometer Chip	Yes	Yes
RAID Support	No	No
TPM	Yes	Yes
Memory		
Memory Type	DDR4-2133	DDR4-2400
Form Factor	SODIMM	SODIMM
Memory Slots	1	1
Standard Memory	8GB (1 x 8GB)	8GB (1 x 8GB)
Storage		

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

Feature	Details	
SSD - Solid State Drive	120GB SSD M.2 SATA	120GB SSD M.2 SATA
Integrated Touch Display		
Primary Display	15.6" Projected Capacitive 1366 x 768 10-point touch	15.6" Projected Capacitive 1366 x 768 10-point touch
Aspect Ratio	16:9	16:9
Brightness	350 nits	350 nits
Screen Life	30K Hours to half brightness	30K Hours to half brightness
Anti-Glare	No	No
VESA Pattern	75mm	75mm
Peripherals		
3-track Encrypted MSR	Option	Option
Integrated Biometric Reader	Option	Option
2-in-1 Sign-in Device	Option	Option
Consumer Displays		
APA Customer Display	Option	Option

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

Feature	Details
Dimensions/Weight	
Terminal Dimensions (CX3 with Stand) (w x d x h)	14.97 in. x 8.29 in. x 11.78 in. (380.2 mm x 210.6 mm x 299.1 mm)
Terminal Weight (CX3 with Stand)	6.08 kg (13.40 lbs) **Note** Weight varies by configuration.

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

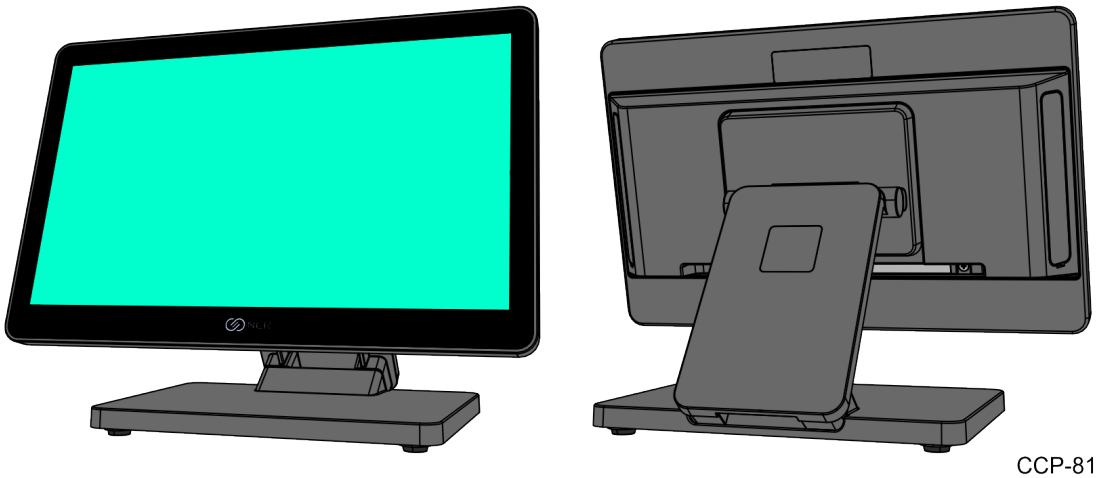
Mounting Configurations

The following are mounting configuration options for NCR CX3 POS (7776):

- "Stand (F170)" below
- "Wall/VESA Mount" below

Stand (F170)

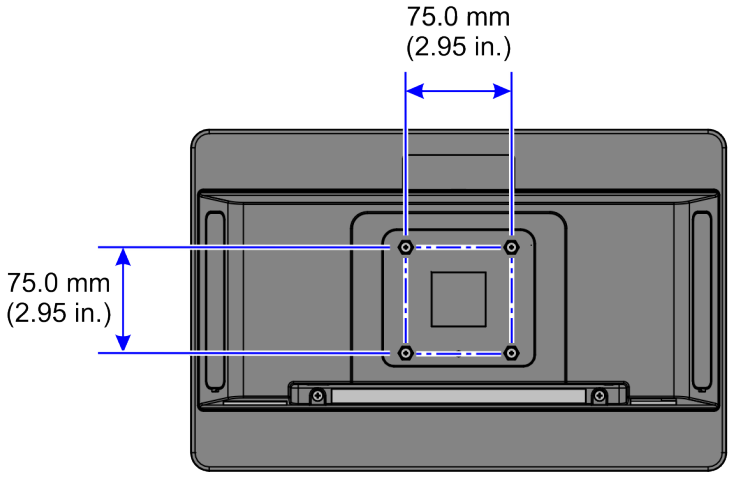
The NCR CX3 POS (7776) can be mounted on a table top using the stand feature.



CCP-81745

Wall/VESA Mount

The NCR CX3 POS (7776) can be mounted on a wall or on a VESA display mount. The VESA mounting pattern is 75 mm by 75 mm.

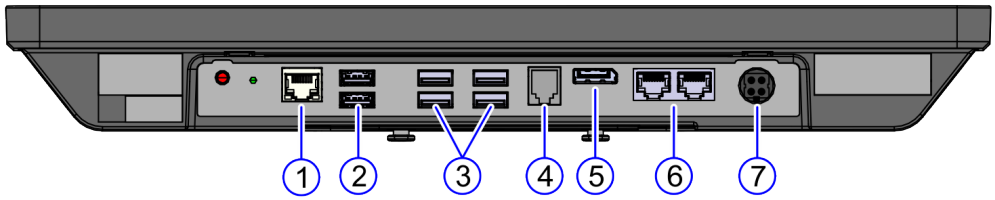


CCP-82113

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

I/O Ports

The following is the default I/O ports for the NCR CX3 POS (7776).



CCP-81743

Callout	Port Name
1	RJ45 LAN Port
2	USB 3.0 (x2) **Note** Each USB 3.0 supports +5V at 0.9A max.
3	USB 2.0 (x4) **Note** Each USB 2.0 supports +5V at 0.5A max.
4	RJ12 Cash Drawer, 24V/12V (dual with y-cable)
5	Display Port
6	RJ45 COM Port (x2) **Note** Each COM port supports 12V/5V, 1A max.
7	24V Power In

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

I/O Board Connector Pinouts

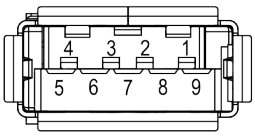
LAN

The CX3 Motherboard provides 10/100/1000 Base T Ethernet support. The connector features an integrated magnetic module and two LEDs. The LEDs provide speed, and link/activity status.

LAN LED	10 Mbps	100 Mbps	1000 Mbps
Left (Active)	Yellow (Blinking)	Yellow (Blinking)	Yellow (Blinking)
Right (Speed)	OFF	Green	Orange

USB 3.0

The CX3 Motherboard provides a dual-stack USB 3.0 Type A connector. Each USB 3.0 port is capable of supplying +5V at 0.9A max.



CCP-82118

Pin	Signal
1	V_{BUS}
2	D–
3	D+
4	GND
5	Rx–
6	Rx+
7	GND
8	Tx–
9	Tx+

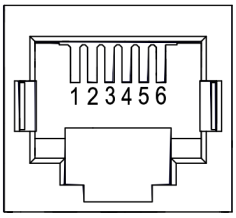
Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

Cash Drawer

The CX3 Motherboard provides a single 6-position RJ12 connector.

Note

A Y-cable is required when connecting to any 12V cash drawer or to dual cash drawers.



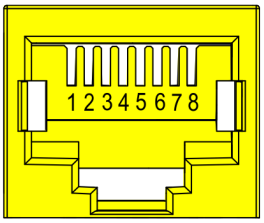
CCP-77004

Pin	Signal Name
1	Frame Gnd
2	Solenoid A
3	Drawer A/B
4	+24V/12V
5	Solenoid B
6	Logic Gnd

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

RJ45 Serial Port

The CX3 Motherboard provides one dual package RJ45 serial port. The color of the connector is yellow.



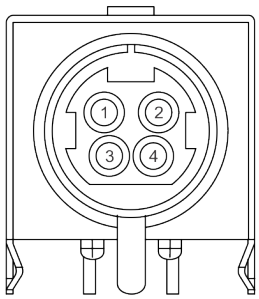
CCP-73983

Pin	Signal Name
1	DSR
2	DCD
3	DTR/5V
4	GND
5	RX
6	TX
7	CTS
8	RTS/12V

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

24V Power In

The CX3 Motherboard accepts +24V DC voltage input from an external power supply. The Power In connector is a 4-pin DC IN.



CCP-76976

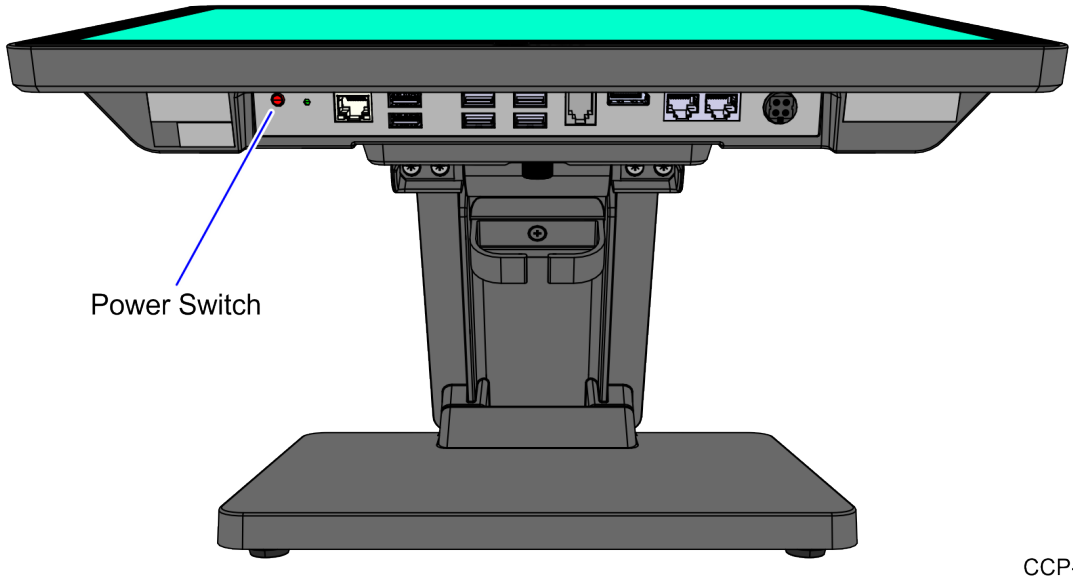
Pin	Signal Name
1	GND
2	24V
3	GND
4	24V

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

Operator Control

Power Switch

The Power Switch is located at the bottom of the display. This switch is a momentary contact, push-on-push-off switch.

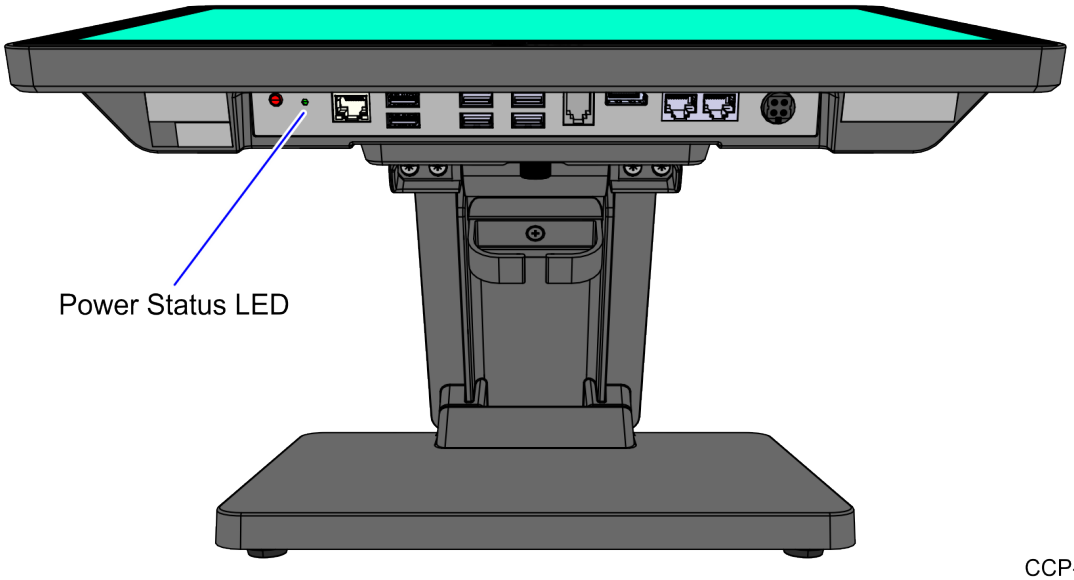


CCP-81744

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

LED Indicator

Power Status LED



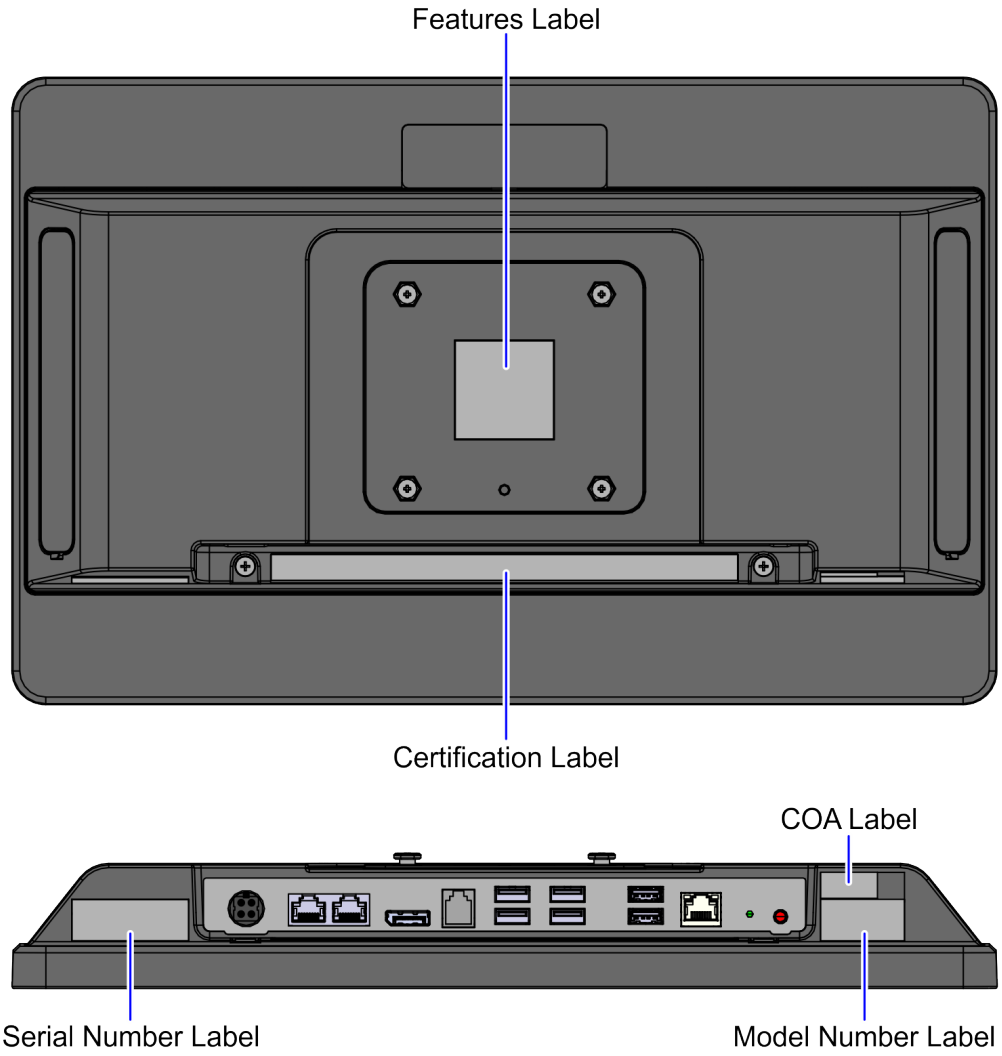
CCP-81741

The Power Status LED, located at the bottom of the display, has multiple functions as defined below.

Color	Description
Solid Green	Terminal is ON and all voltages from power supply and motherboard are okay.
Off	Terminal is in SUSPEND (S3/S4/S5) mode.

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

Label Locations



CCP-81742

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

Hardware Installation

Installation Restrictions

The NCR CX3 POS (7776) conforms to all applicable legal requirements. To view the compliance statements, see the **NCR POS Terminals Safety and Regulatory Information** (B005-0000-1589).

When installing the terminal, follow these guidelines:

- Install the CX3 near an electrical outlet that is easily accessible. Use the power cord as a power disconnect device.
- Do not permit any object to rest on the power cord. Do not place the CX3 where the power cord can be walked on.
- Before servicing the CX3 terminal, use a grounding strap or touch a grounded metal object to discharge any static electricity from your body.

Warning

This unit contains hazardous voltages and should only be serviced by qualified service personnel.

Caution

Do not connect or disconnect the transaction printer while the terminal is on. This can result in system or printer damage.

Warning

The NCR CX3 POS (7776) should not be used with grocery scanners or weighing scanners. Do not connect any scanner/scale unit to the CX3 to avoid damaging the scanner/scale unit.

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

Ergonomic Workplace

Due to the high brightness LCD of the NCR CX3 POS (7776) refer to the following recommendations for an ergonomic workstation:

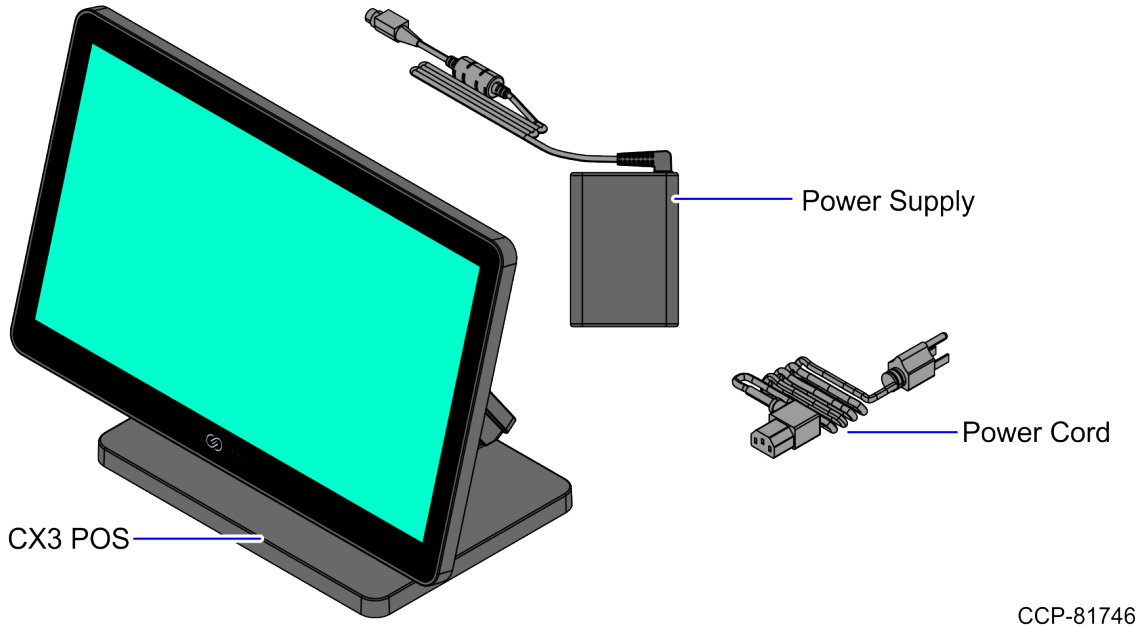
- Avoid direct–glaring and reflective–glaring light. When installed next to windows, position the terminal so it does not reflect the outside light.
- If possible, avoid reflective–glaring light caused by electric light sources.
- Position the terminal to get ideal viewing angles.

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

Installing the Terminal

This chapter explains how to perform an "Out-of-box" installation of a CX3 configured with the standard Table-Top Stand and how to connect optional peripheral devices. The standard items included in the box are:

- CX3 POS
- Power Supply
- Power Cord



The CX3 comes fully assembled and is ready for use. All that is required to install are the AC Power Cord, LAN Cable, and peripheral device cables.

For more information about the CX3 I/O ports, refer to "I/O Ports" on page 8.

Note

The POS LCD has a protective film. After removing the film, the LCD should be cleaned. For more information, refer to "Cleaning the Touchscreen" on page 29.

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

Connecting AC Power

Caution

Do not connect or disconnect the Power Cable from the terminal with the AC Power Cord connected to an AC outlet. It is recommended to disconnect the AC Power Cord from the AC outlet and wait 30 seconds before connecting or disconnecting the Power Supply cable from the terminal.

The CX3 receives power from an external 24V power brick.

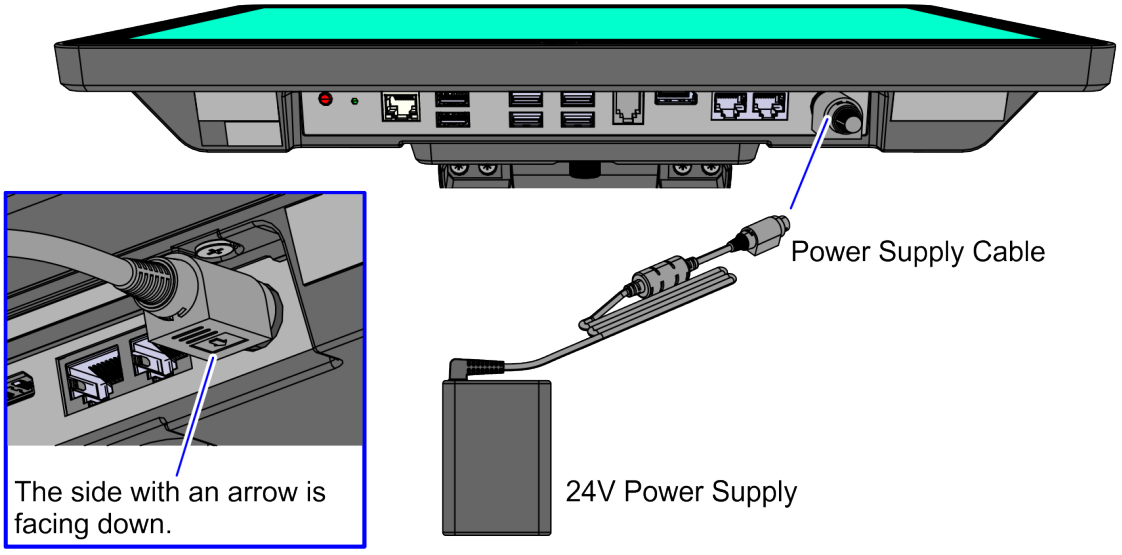
Caution

The CX3 requires the NCR 24V power supply that is shipped with the terminal. Use of other power bricks may cause damage to the unit.

1. Connect the Power Supply cable to the Power In connector on the terminal.

   Important

   Ensure that the side of the cable overmold that shows an arrow is facing down.



CCP-83345

2. Connect the AC Power Cord to the Power Supply and to an AC outlet.

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

Connecting to a Network

Most business configurations require the terminal to connect to a network. Connecting to a network enables communicating with other systems and devices also on the network. Depending on business configurations, connecting to a network may allow connection to the Internet.

1. Connect the 10/100/1000 Ethernet cable to the LAN connector of the CX3.
2. Connect the other end of the 10/100/1000 Ethernet cable to a network hub.

Note

Consult with your business Information Technology (IT) representative to determine the available connection and to locate the network hub.

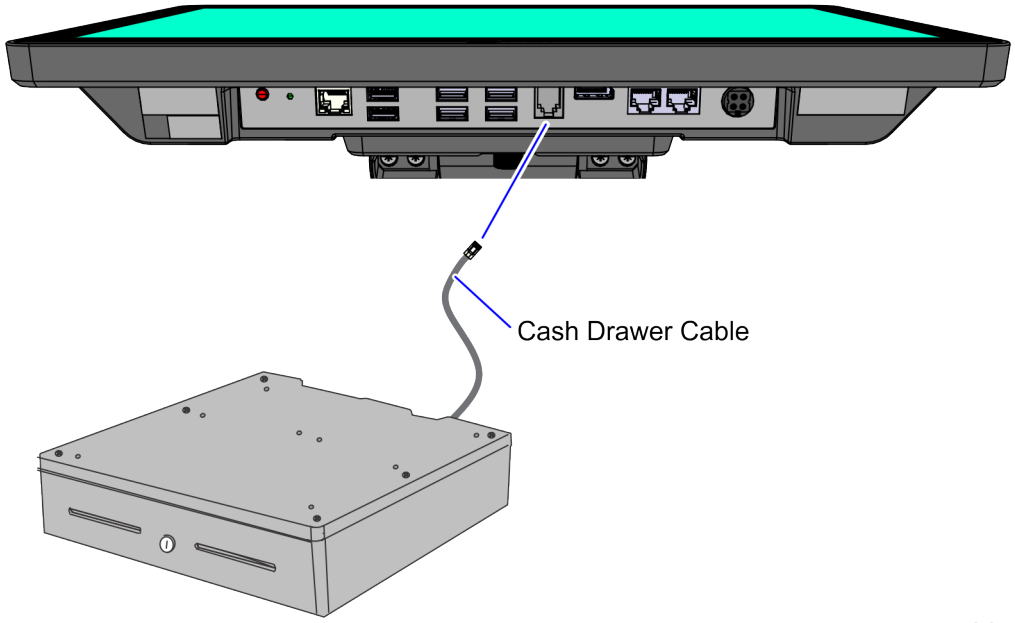
Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

Installing the Cash Drawer

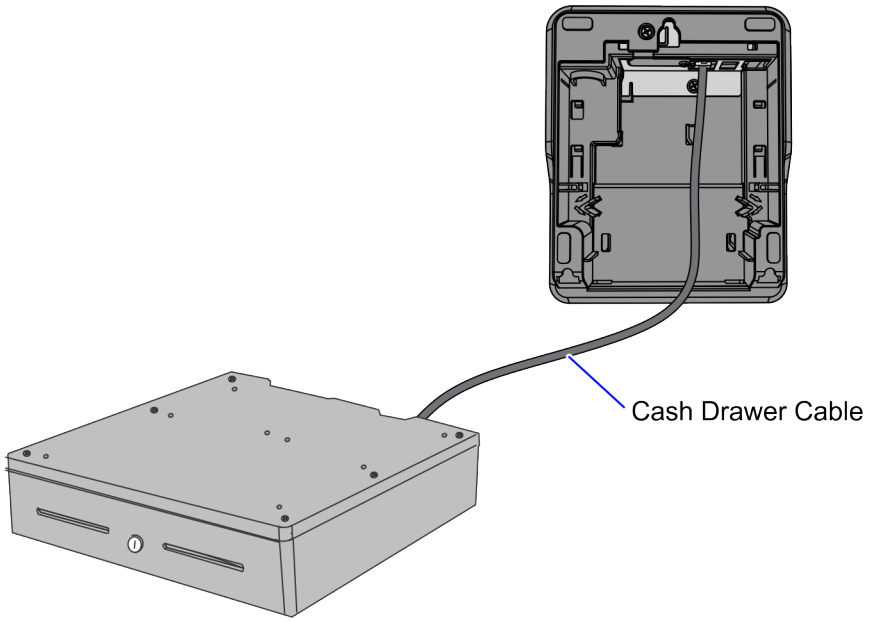
The Cash Drawer can be connected to the Cash Drawer connector on the terminal or to a transaction printer.

Note

The following example shows the NCR 7199 printer.



CCP-81748



CCP-81749

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

Installing the Second Cash Drawer

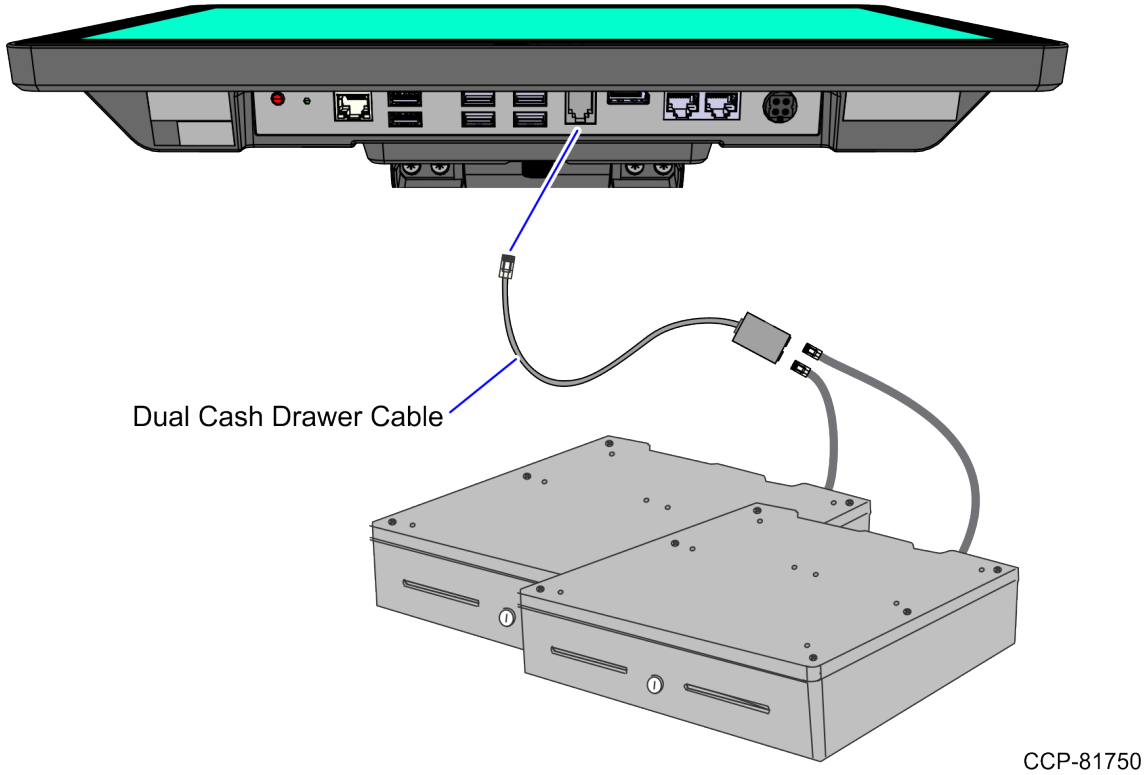
The CX3 supports a 2-drawer configuration with a Dual Cash Drawer Cable. Connect this cable to the terminal or to a transaction printer cash drawer connector.

The following table provides two versions of the Dual Cash Drawer Cable.

Cable	Description	Notes
1432-C516-0009	24V Dual Cash Drawer Splitter	Required if using two 24V cash drawers
1432-C517-0009	12V Cash Drawer Splitter for Single or Dual configuration	Required if using one or two 12V cash drawers (legacy Radiant). Cable allows software to see which drawer is open/closed.

Caution

The two cables look very similar. Make sure you use the correct one. Connecting the wrong cable can cause system damage. To identify the cable part number, check the label attached to the cable.



Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

Configuring Gen3 Cash Drawer Switch Polarity

Hospitality (HSR) Cash Drawers all use 12V coils with *Normally Open* detection switches. Gen3 Hospitality platform software defaults its open/close sense settings to this configuration. To use a drawer with *Normally Closed* detection switches (e.g. Retail 24V drawer), the sense settings can be reversed through registry settings. To reverse the sense settings, follow these steps:

For Cash Drawer 1

1. Create a new DWORD registry value at HKLM/Software/Radiant/Platform/CashDrawer/ReverseOpenDetect1
2. Set the value of the new DWORD to 1

For Cash Drawer 2

1. Create a new DWORD registry value at HKLM/Software/Radiant/Platform/CashDrawer/ReverseOpenDetect2
2. Set the value of the new DWORD to 1

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

Installing the Transaction Printer

Warning

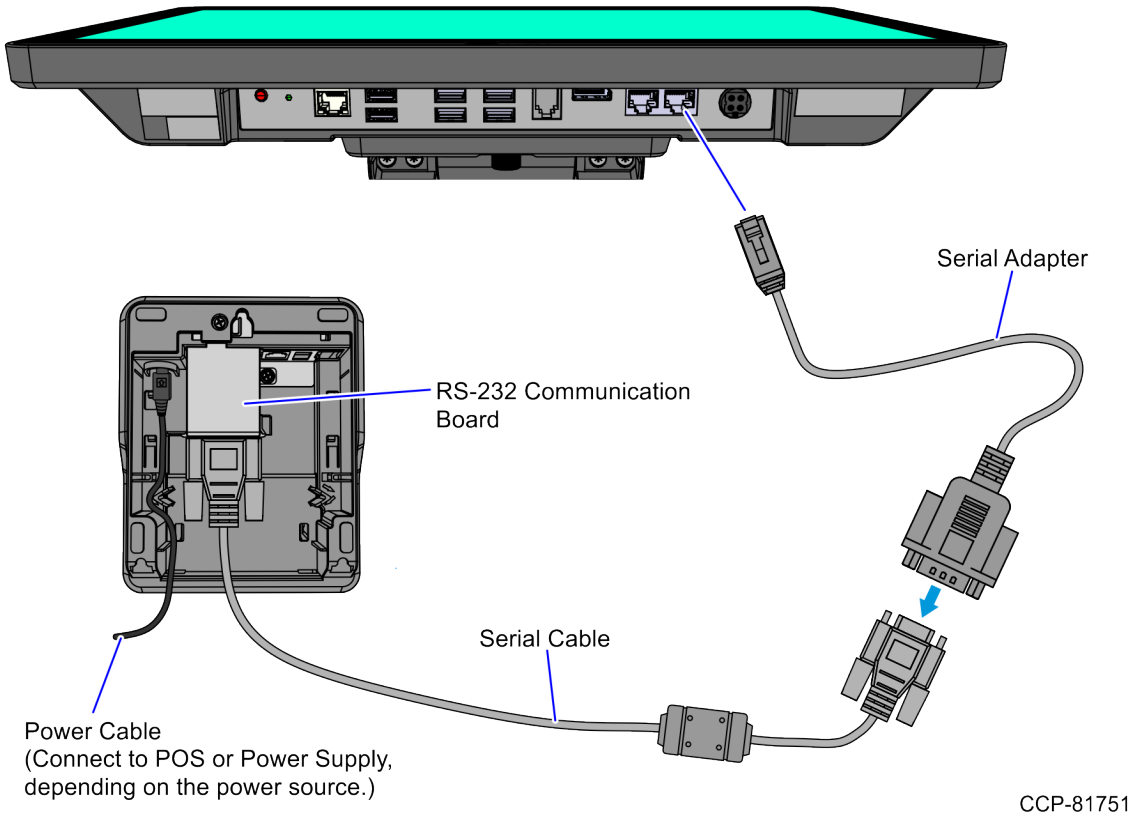
Do not hot plug the printer when connecting the POS terminal. Always power down the POS prior to connecting the printer to prevent damage to the POS and/or printer.

Connect the USB Printer Interface Cable or the Serial Cable to the printer and to the terminal, depending on the connection type.

Serial Connection

Note

The following example shows the NCR 7199 printer.



Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

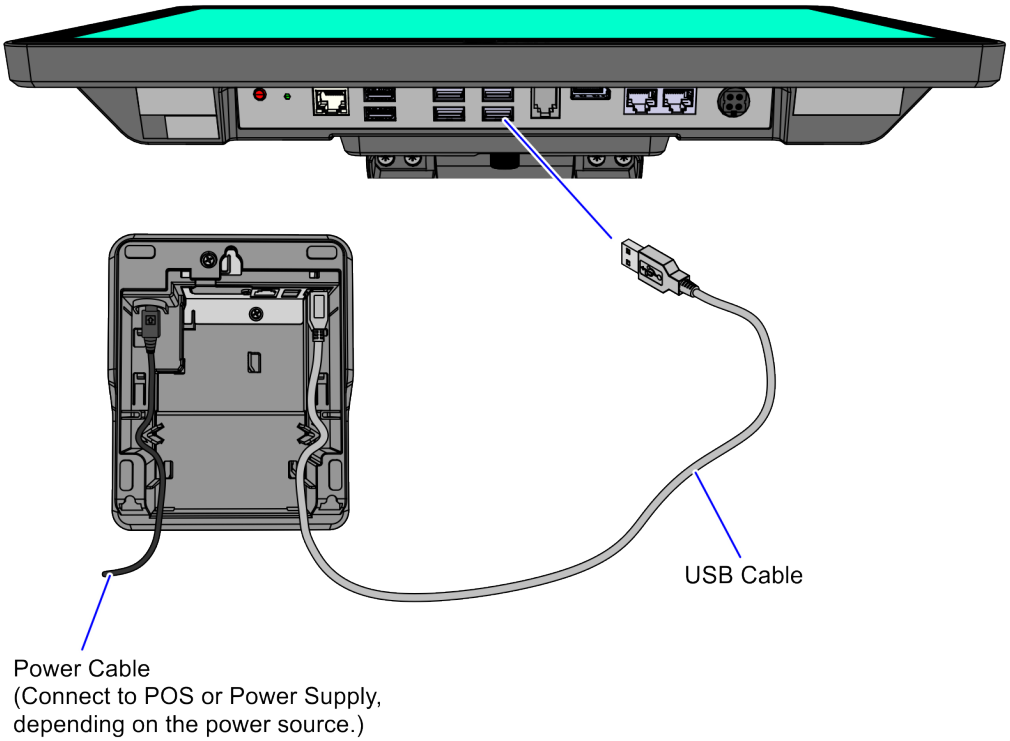
The following table provides two versions of the Printer Adapter to convert RJ45 to Hospitality RJ12.

Cable	Description
1639-K410	RJ45M TO RJ45F Remote Serial Printer Converter Dongle
1639-K467	RJ45M to HSR RJ12 Serial Converter Dongle

USB Connection

Note

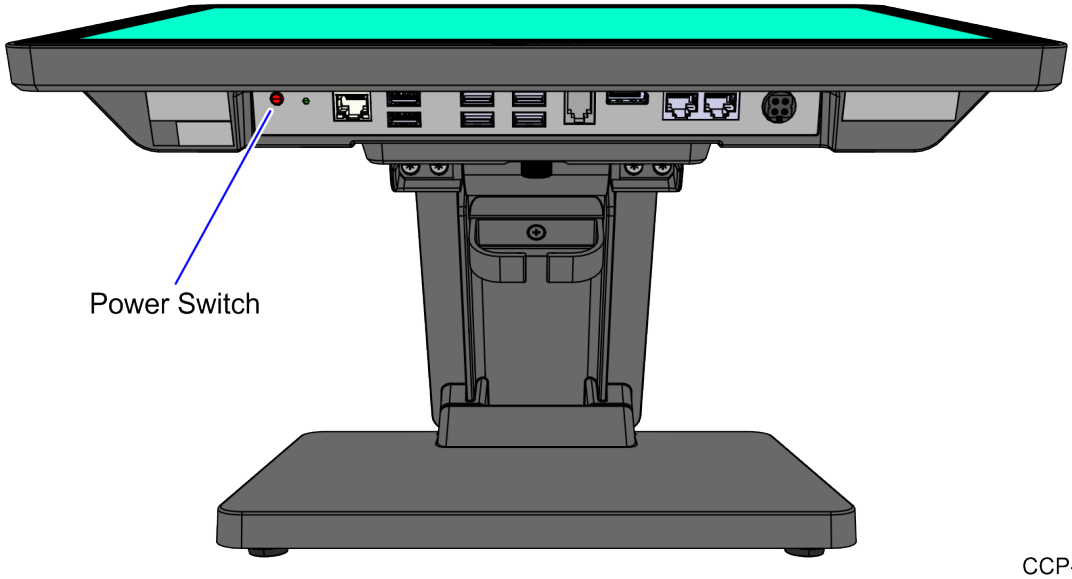
The following example shows the NCR 7199 printer.



Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

Powering Up the Terminal

1. After installing the terminal, power up the system by pressing the **Power Switch**, which is located at the bottom of the display.



CCP-81744

   The system installs the system devices, system settings, and then reboots to continue setup.

2. Complete the System Setup. This varies depending on the operating system, but the following is typical:
   - Starting Windows
   - Preparing the computer for first time
   - Checking video performance

3. Accept the **License Terms Agreement**.

Note

Depending on the installed operating system and the selected settings, the time it takes to boot up varies.

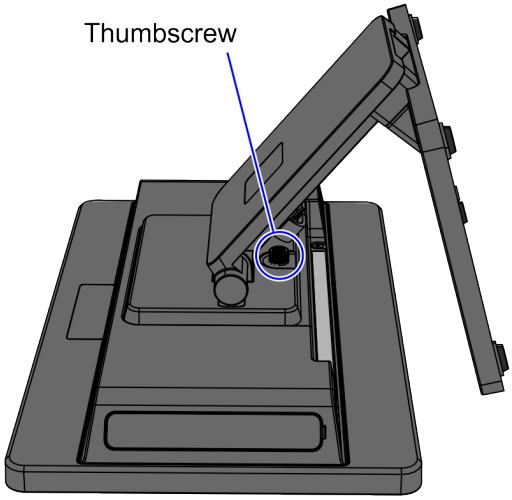
Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

Removing the Stand

1. Lay the Terminal face down on a flat surface.

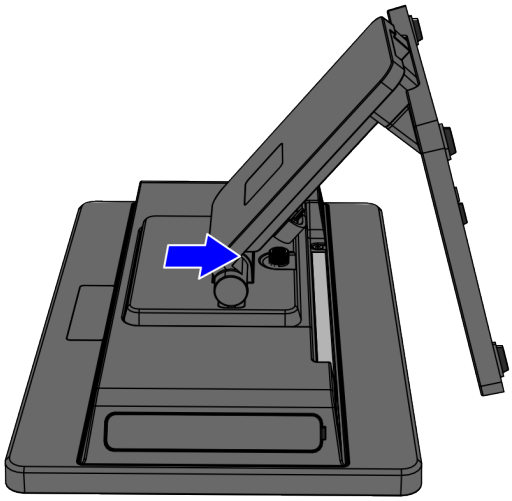
> **Note**
>
> Always use a soft material (cloth or foam) to protect the display screen when placing the terminal face down.

2. Loosen the thumbscrew.



CCP-82120

3. Slide the Stand in the direction shown to unhook it from the Terminal.



CCP-82121

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

Operation and Cleaning

Administrator Login

In order to install certain software on the terminal you may need Administrator rights.

Username: **NCR**

Password: **NCR** (Password is case sensitive.)

Touchscreens

The NCR CX3 POS (7776) has a Projected Capacitive (PCAP) Touchscreen.

Projected Capacitive Touchscreen

The active surface of PCAP touchscreens is not directly touched and does not wear off by normal use because it is located on the back side of the touchscreen, instead of the front side. Therefore, the NCR CX3 POS (7776) can be used in severe environmental conditions.

Using the PCAP Touchscreen

To use the PCAP touchscreen, do any of the following:

- Use a single finger to resemble the left mouse button.
- Use two fingers to zoom IN (fingers brought together) or zoom OUT (fingers pulled apart).
- Use a circular motion with your finger to rotate an element on the screen. This function must be supported by either the Operating System or the application.

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

Cleaning the Touchscreen

Touchscreens can be effectively cleaned with water or up to 70% isopropyl alcohol solution. Follow these steps to avoid damage to the touchscreen:

Warning

Do not use sharp objects to clean around the edges of the touchscreen. Do not use abrasive cleaners (powders) or abrasive cleaning materials (scrub brush, scouring pad).

Warning

Do not use Windex or any similar alkaline (weak base) cleaner as it can degrade the anti-glare coating.

Warning

Do not apply any cleaning products directly to the screen. Do not soak the cloth: wring it out before use.

1. Clean the screen using a non-abrasive cloth (microfiber cleaning cloth or cloth towel) and water.
2. Dry the screen with another soft cloth.
3. Do not apply any cleaning products directly to the screen. Do not soak the cloth: wring it out before use.
4. Clean the screen further using a cloth dampened with isopropyl alcohol solution, or using pre-packaged wipes.
5. Ensure that the glass and screen edges are completely dry before using the unit.

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

Magnetic Stripe Reader

The Magnetic Stripe Reader (MSR) for the CX3 is ISO 3-Track (Encrypted).

The card reading is bi-directional and can be mounted on Port A (right side) of the display.

Using the MSR

Swipe the card through the slot in the MSR in a quick and steady movement. The magnetic stripe must be facing up and with the stripe in the slot.

CCP-81753

Care of Cards

- Cards should never come in contact with liquids.
- Cards should never be bent or folded in any way.
- Cards should never come in close proximity to a magnetic field.

Card Thickness

The MSR module accepts standard cards within the thickness range of 0.68–0.84 mm.

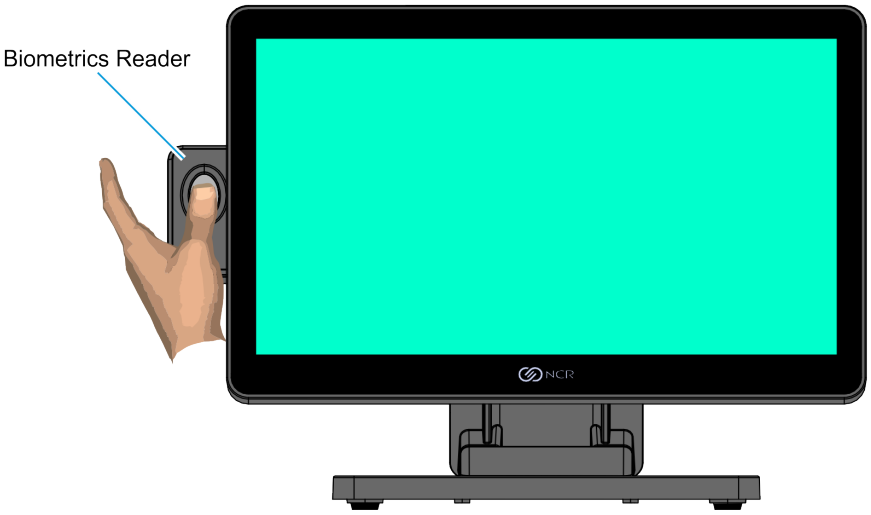
Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

Biometrics Fingerprint Reader

High quality fingerprint templates are imperative for the security of the biometric security system. Low quality fingerprint templates can impact future read rates. Therefore, using the Biometrics Module must be done very carefully. Inexperienced users who are using the module for the first time must be assisted (guided) by an administrator or experienced user.

Using the Biometrics Reader

Place your thumb/finger flat and straight on the sensor. Try to place your thumb/finger on the sensor in the same angle every time.



CCP-81754

Under normal usage conditions, dirt, residue, oils, and other materials can accumulate on users' fingers. This can possibly cause poor collection of fingerprint data, which can cause performance degradation. For best results, it is recommended that users keep their fingers relatively clean and free of residues to avoid altering the sensor performance.

Scotch tape can be used to clean fingers. Stick the tape to the finger and then pull it off.

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

Cleaning the Sensor

Before each authentication, it is recommended that the user first clean the sensor. Place adhesive tape onto the sensor and then pull it off. This assures that residue from previous use is removed.

> **Caution**
> Do not use abrasive materials to clean the sensor.

Software Drivers

The CX3 biometrics reader is a digitalPersona U.ARE.U 4500 Module. Please visit the Crossmatch website for drivers and application developer tools.

https://www.crossmatch.com/company/support/request/

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

Cleaning the Cabinet

To clean the cabinet of the NCR CX3 POS (7776), follow these steps:

1. Disconnect the unit from the AC outlet.

   Warning

   Do not use alcohol (methyl, ethyl, or isopropyl) or any strong dissolvent. Do not use thinner or benzene, abrasive cleaners (powders), abrasive cleaning materials (scrub brush, scouring pad), or compressed air. Do not use any other types of cleaners such as vinegar, solvents, degreasers, or ammonia-based cleaners. These can damage the unit.

2. Wipe the cabinet using non-abrasive cloth (microfiber cleaning cloth or cloth towel) dampened with soap and water solution.

   Warning

   Avoid getting liquids inside the unit. If liquid does get inside, have a qualified service technician check it before you power it on again.

3. Wipe the cabinet using a clean and dry lint-free cloth.
4. Remove external dust around the cooling vents.

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

Disk Image Backup and NCR Image Recovery Tool

Introduction

This section discusses procedures on how to backup or recover the POS image. The terminal has a recovery tool that performs a complete backup of the whole HDD/SSD. This includes the operating system, all files, data, and the database itself if it is installed on the HDD/SSD, making an exact duplicate of everything contained on the terminal.

The NCR Image Recovery Tool uses the Windows Image (.WIM) file format to store the OS image. This is a file-based format for use with the ImageX and DISM tools that Microsoft created for use with Windows Vista and later OS versions. The format can also be used to capture and restore XP-based OS images. More information on the ImageX tool and .WIM format can be found at:
http://technet.microsoft.com/en-us/library/cc722145(WS.10).aspx

The NCR Image Recovery Tool is designed to create a complete backup or to restore a POS image.

The NCR Image Recovery Tool offers the following functions and features:

- Multi-language support for the following languages: EN, DE, FR, IT, ES
- Check and Repair Disk
- Backup the System
- Restore the System to a previous state
- Password Protection
- Network support

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

You can save and restore your backup from different storage devices or network:

- Network
- USB Drive
- Hard Drive/Solid State Device (if present on the terminal)

Running the NCR Image Recovery Tool

Starting the NCR Image Recovery Tool

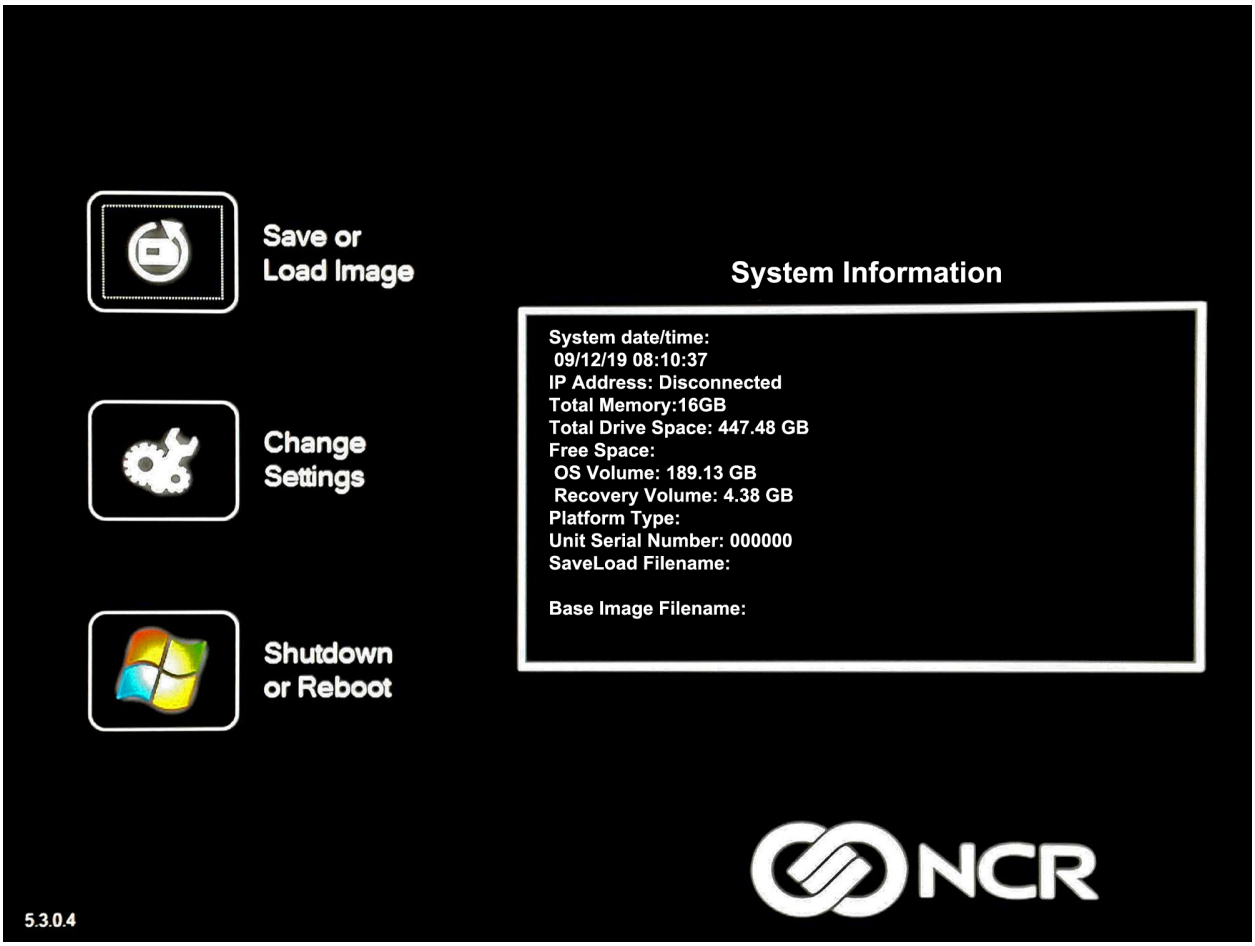
> **Note**
> The NCR CX3 POS (7776) does not include an Image Recovery Button.

1. Ensure that the terminal is OFF.
2. Apply power to the terminal.
3. During boot, press and hold **F9** until the NCR logo flashes on the screen.

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

Main Screen

When the terminal boots the *Main Screen* is displayed.



Save or Load Image

This button opens the *Backup and Recovery* screen.

Change Settings

This button opens a dialog screen to let you set or change the password and configure the network settings.

Shutdown or Reboot

This button opens the screen to properly *Shutdown* and *Reboot* the POS.

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

System Information

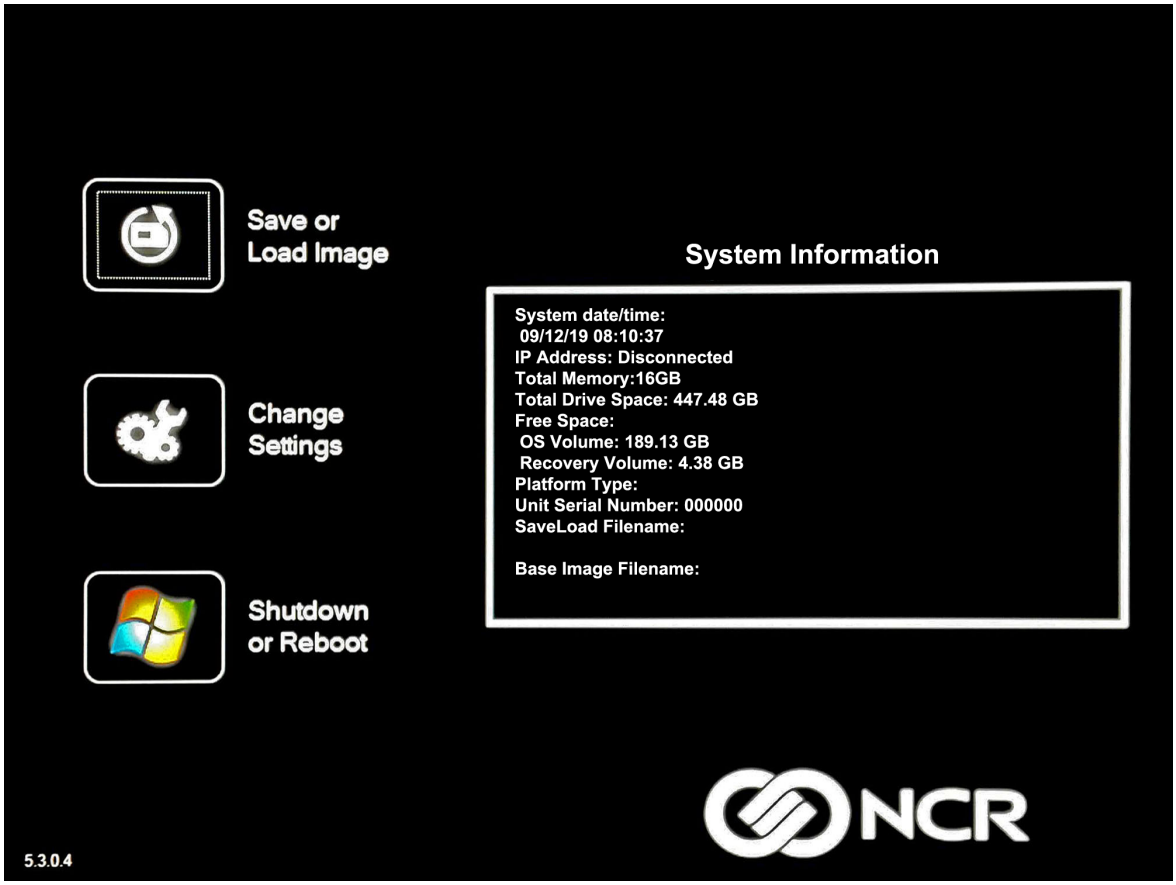
This is where useful information of the POS is displayed, such as Serial Number and Image Names.

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

Save or Load Image

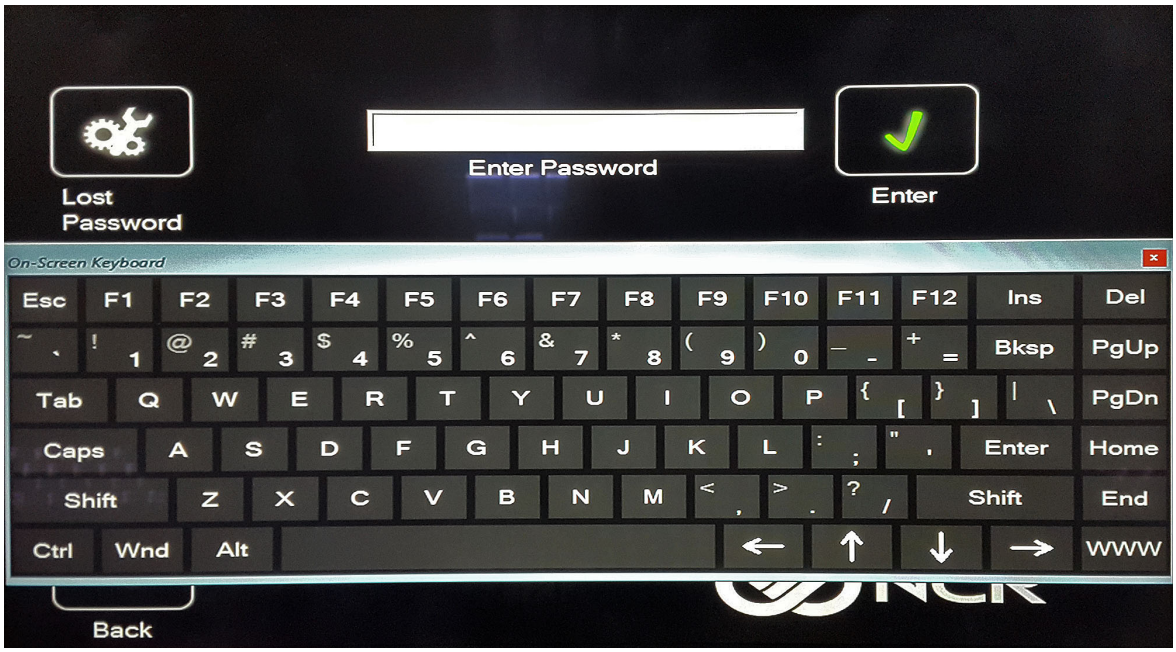
This function is used to either *Save* or *Load* an image from a storage device or network.

1. On the *Main Screen*, select Save or Load Image.



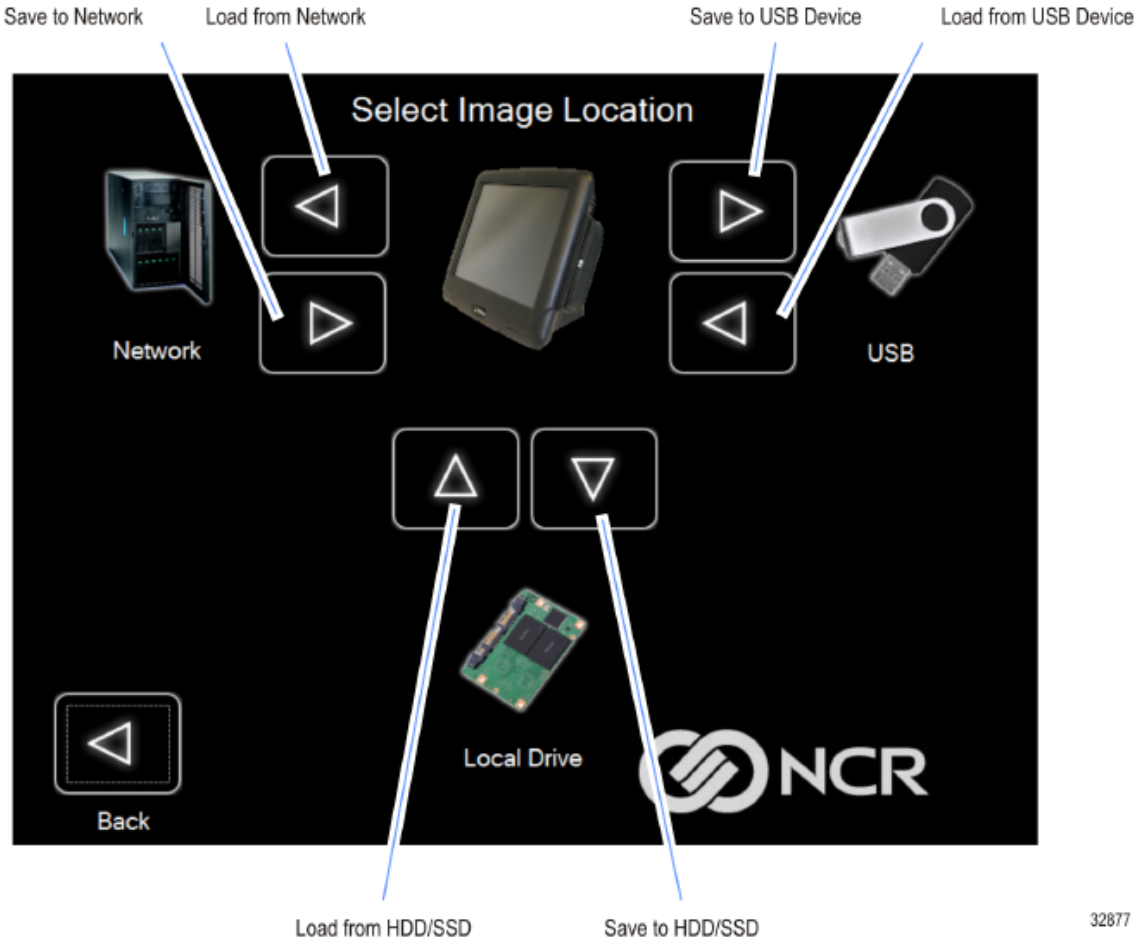
Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

2. Enter the **Password**. The factory default password is **Recovery1234**.



Saving an Image

The *Select Image Location* screen displays a terminal with three sets of *In/Out* arrow buttons, indicating the direction of data flow when selected. Arrows pointing away from the terminal are used to *Save* images to a device. Arrows pointing towards the terminal are used to *Load* an image.



Recovery Partition Size

The size of the Recovery Partition is limited to 8GB on the local drive. The USB and network options can be used to store or back up larger images. The total size is comprised of the base factory image + the user and site backups + the roughly 300MB of space used by WinPE and apps. USB/Network backups are limited only by the hardware that they are being stored to.

After the factory image is copied into the Recovery Partition, there is approximately 3GB remaining in the 8GB partition. Any data stored as an incremental backup to this location is

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

compressed. A typical, large POS software installation will not outpace the constraints of the local storage.

Backups to separate *slots* in the NCR Image Recovery Tool only increase the total storage required by the amount of data *added* to the image. When the contents of the OS partition become too large to store in the 8GB local Recovery Partition, then one of the alternate storage methods available (USB or network) should be used to store backups.

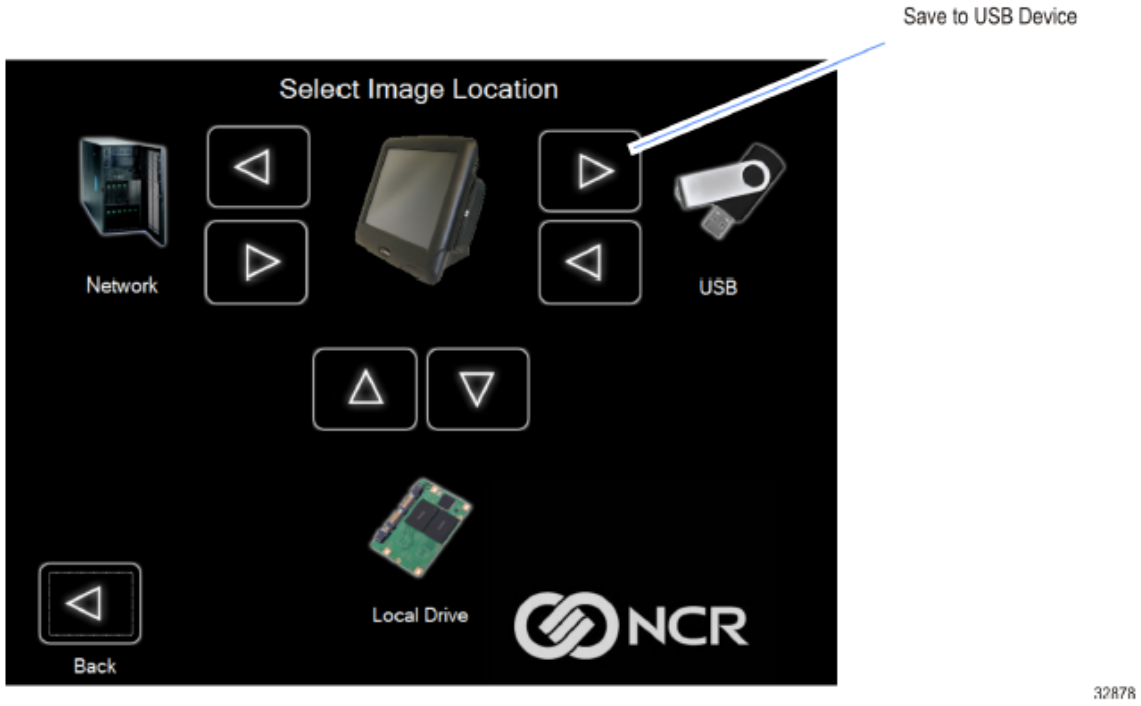
Output Options

There are three output options:

- Hard Disk Drive/Solid State Device
- USB Device
- Network

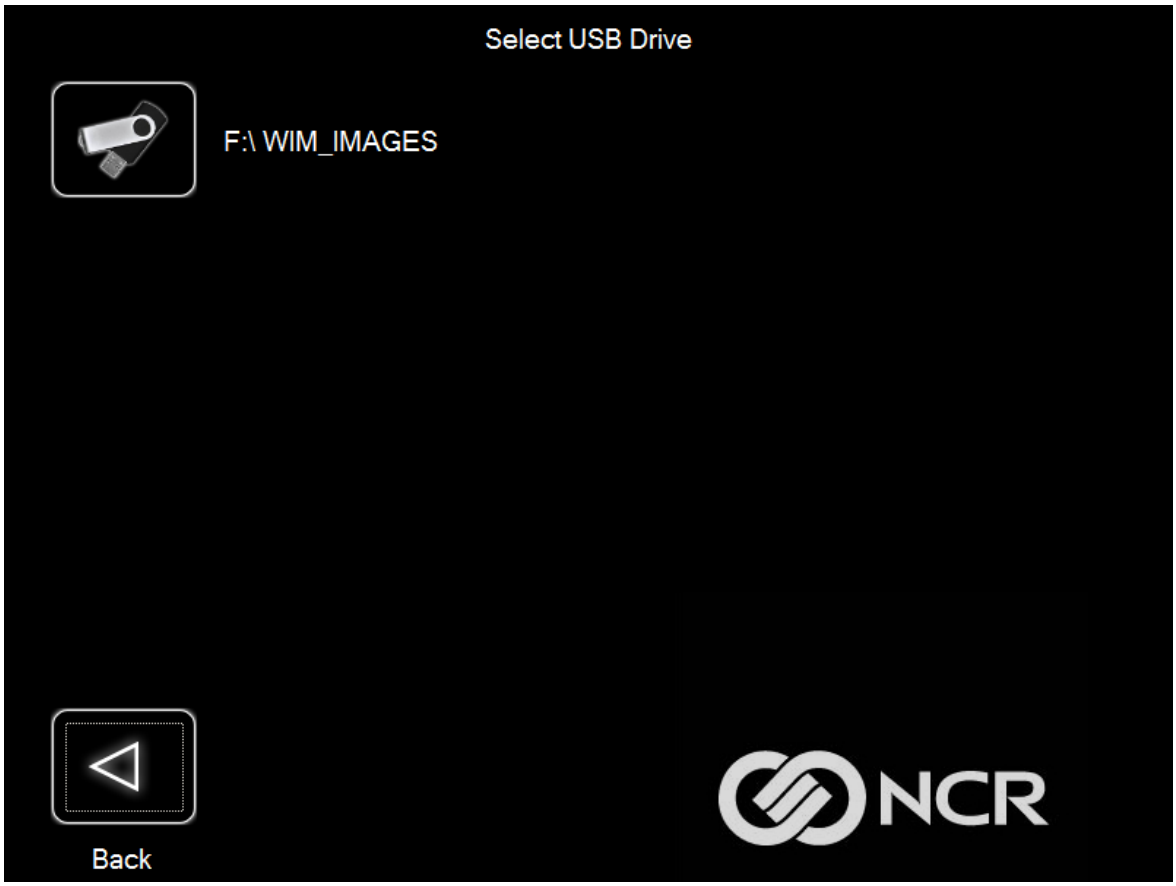
1. Select the arrow that points to the desired output.

> **Example**
>
> Select the **USB Save Button**.

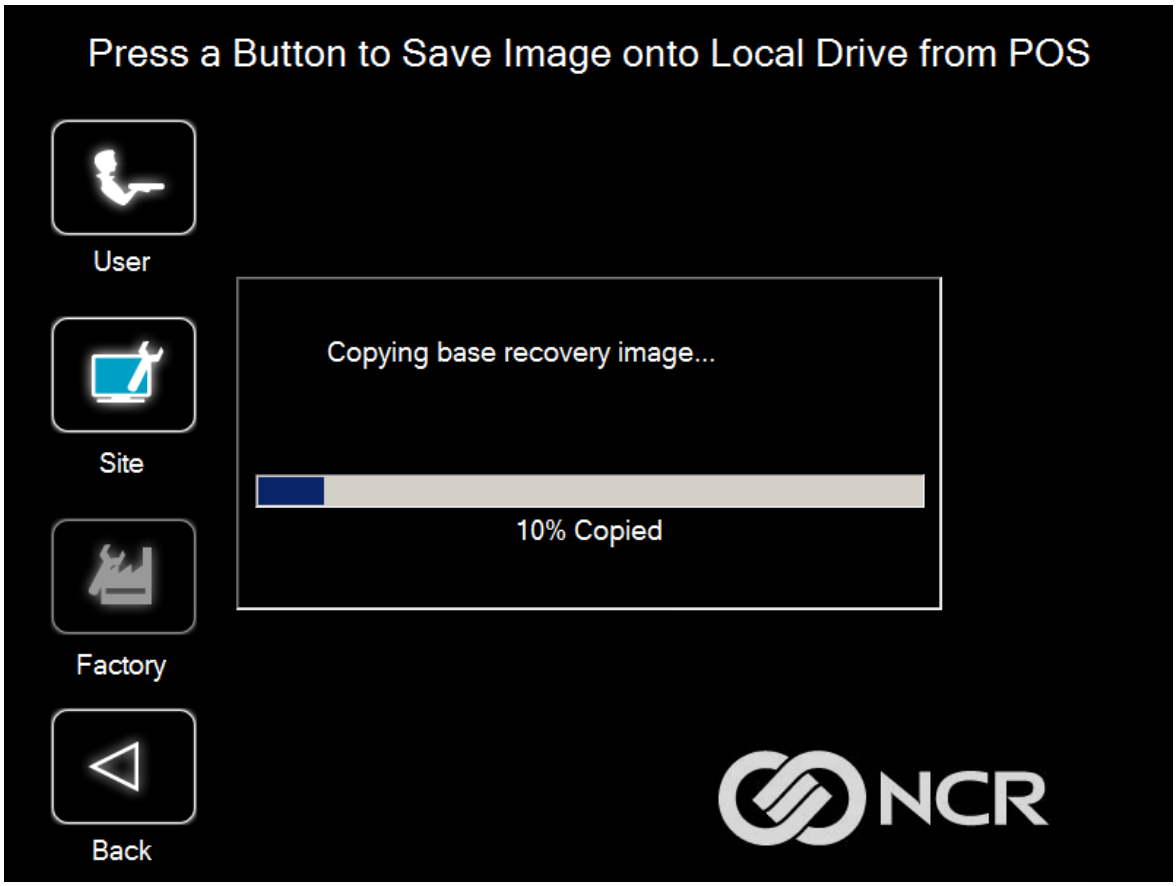


Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

2. Select the **USB Button**.



If this is the first backup performed on this POS, the image is automatically saved as a *Site* backup.



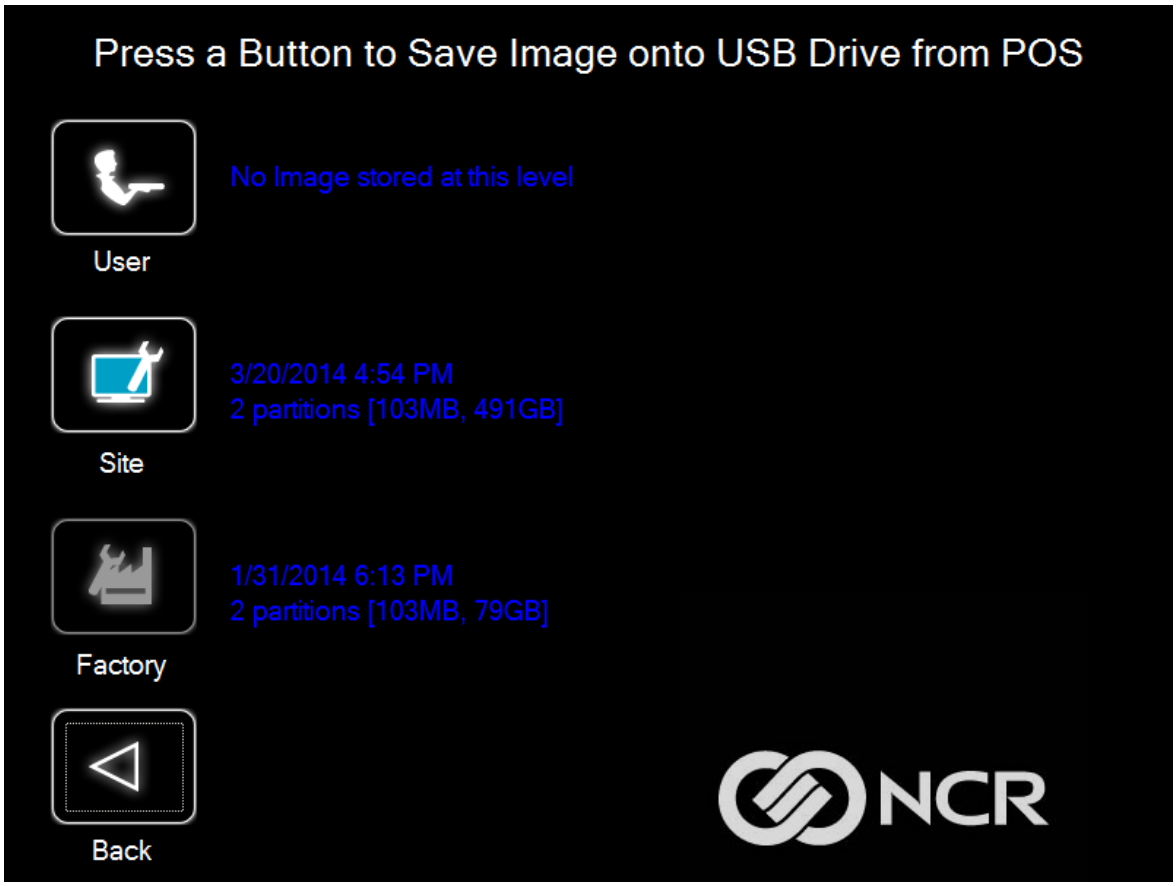
If a backup already exists, you have the choice of performing either a *Site* or *User* backup.

- **Site Image** – Use this option immediately after all application components have been loaded and set up for initial operation, or for base image updates.
- **User Image** – Use this option for routine day-to-day or periodical backups.

Note

Site and *User* backups are separate independent backups.

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.



The image information is updated with the new image date.

Loading An Image

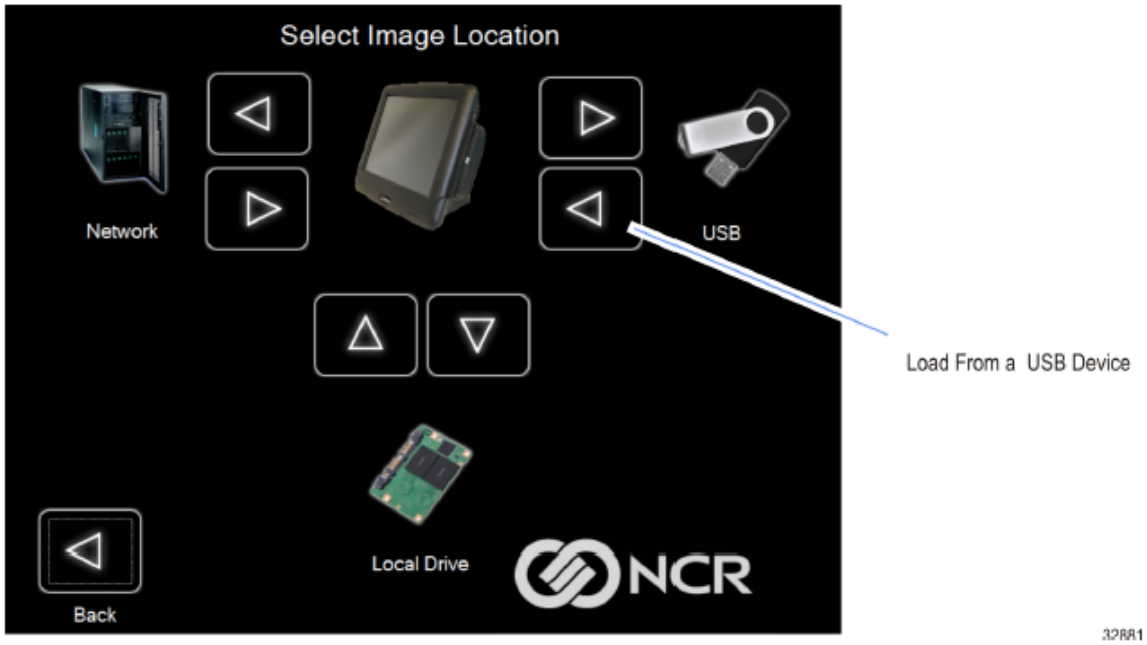
Caution

Do NOT remove power during an Image Load. Complete the Operating System setup and then shut down Windows properly. Removing power corrupts the image and displays various messages like "Windows failed to load" or "missing or corrupt registry". If this happens, you can do an Image load of the Factory image with the NCR Image Recovery Tool.

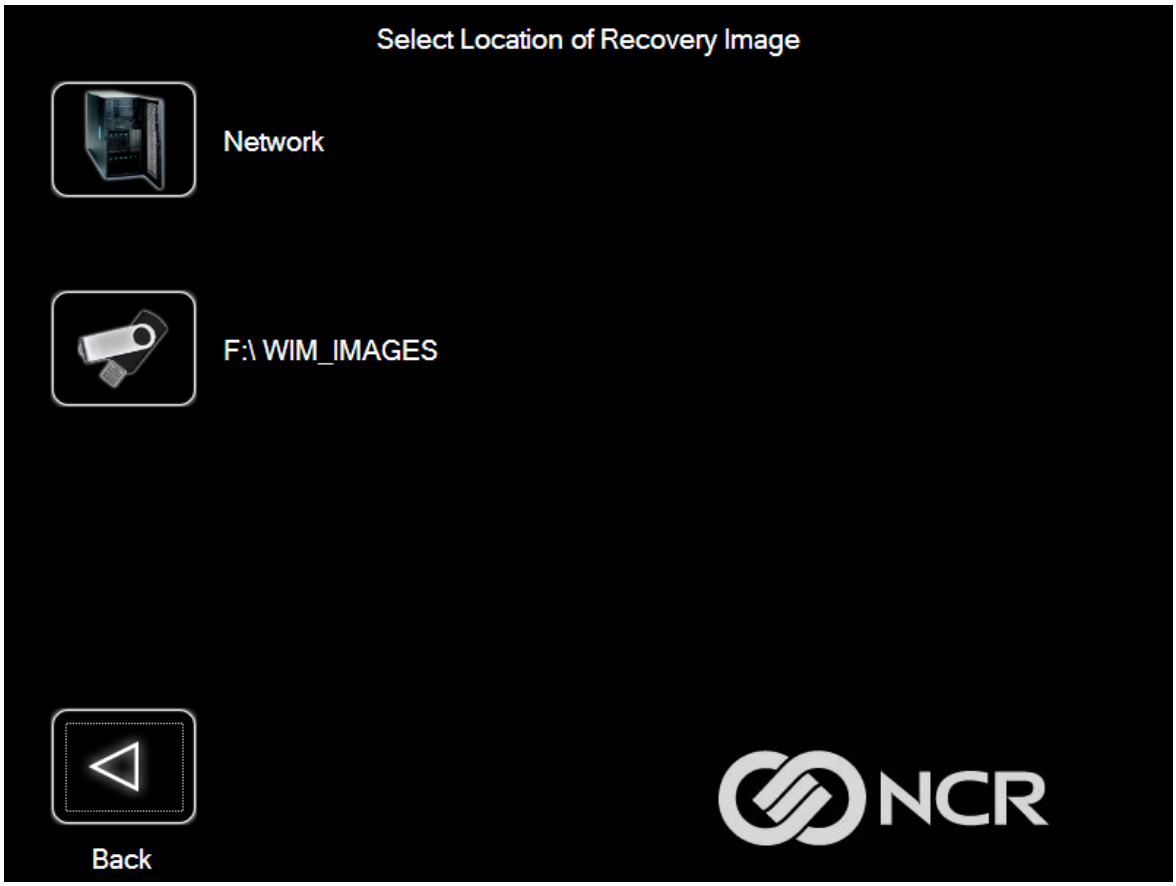
1. Select the arrow that points from the desired load device to the terminal.

Example

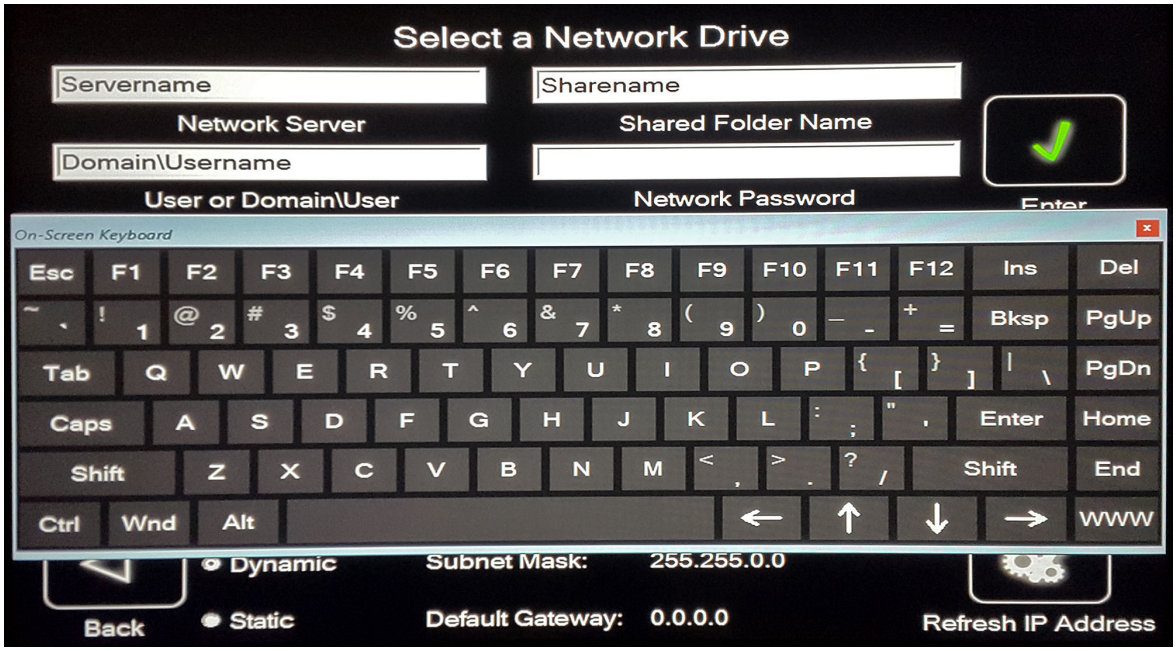
Select the **USBLoad Button**.



2. Select the **USB Button**.

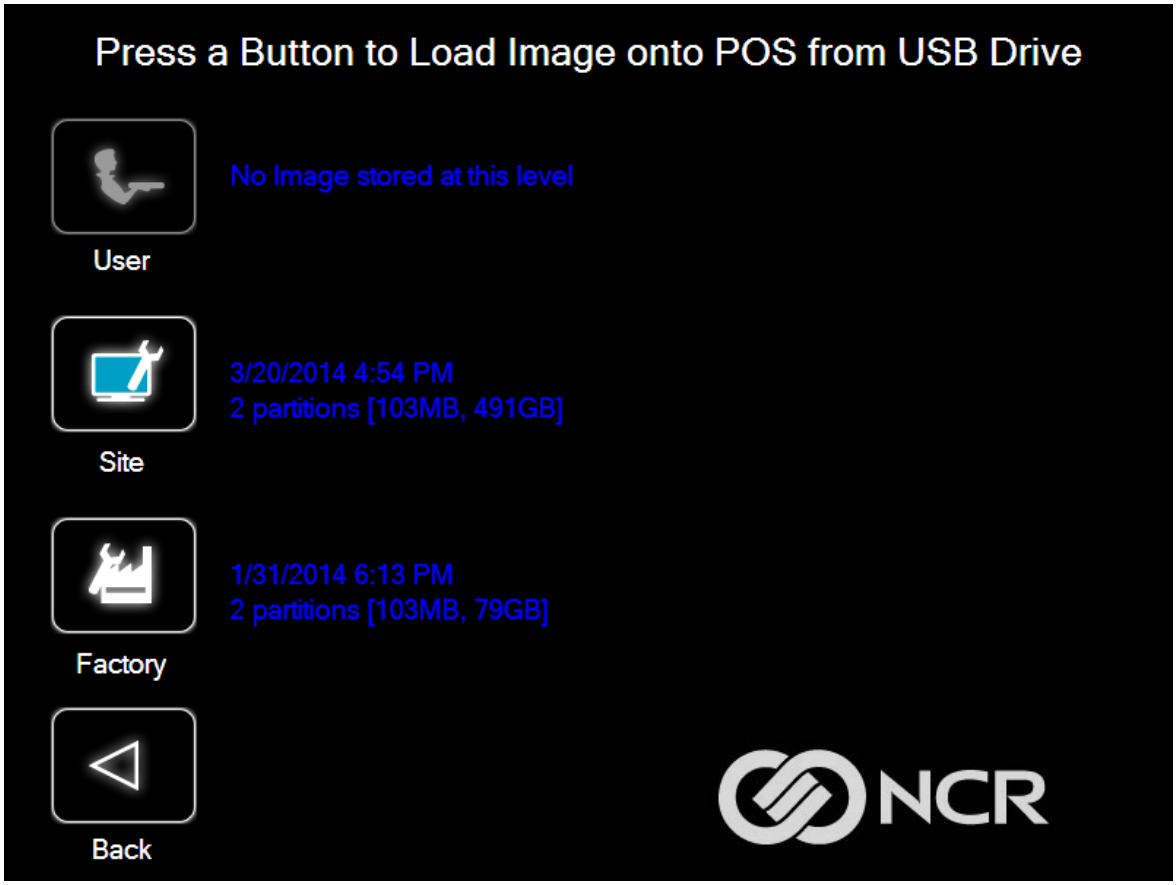


If you are loading from a network, the *Select a Network Drive* dialog screen will open.



Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

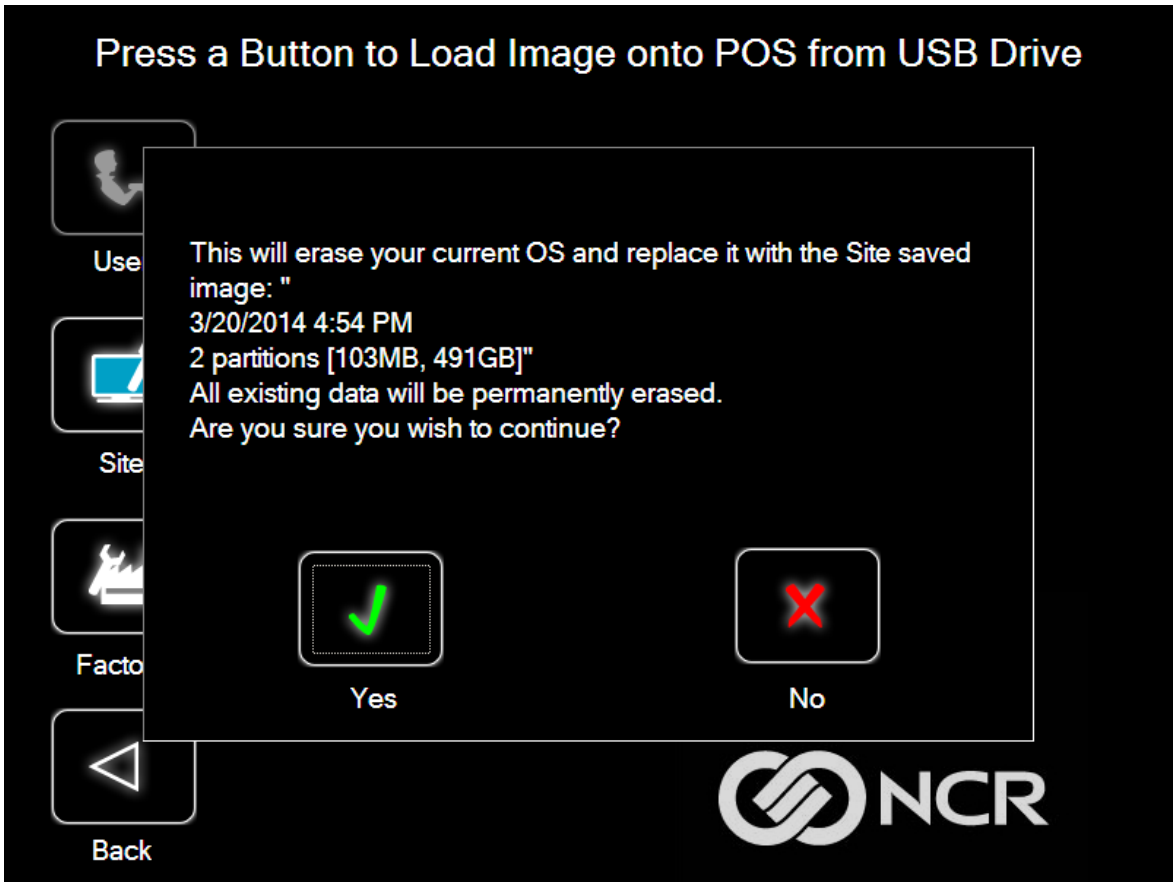
3. Select the *Image Type*.
    - **User Image** – Most recent routine backup.
    - **Site Image** – Image of the terminal after application components were loaded.
    - **Factory Image** – The NCR Base Image as shipped from the factory.



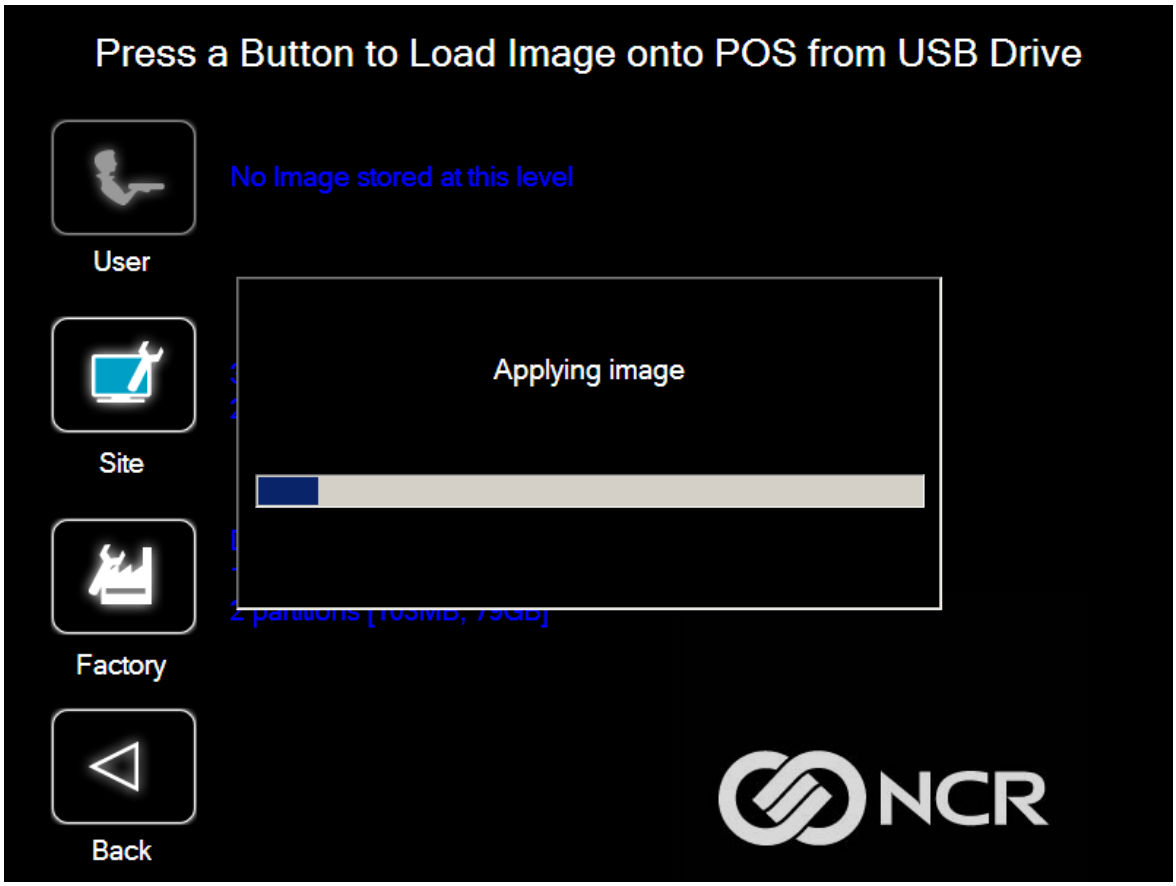
Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

4. Select **Yes** to apply the image.

> **Caution**
>
> All the information in the current productive/working image on the drive is lost with this operation!

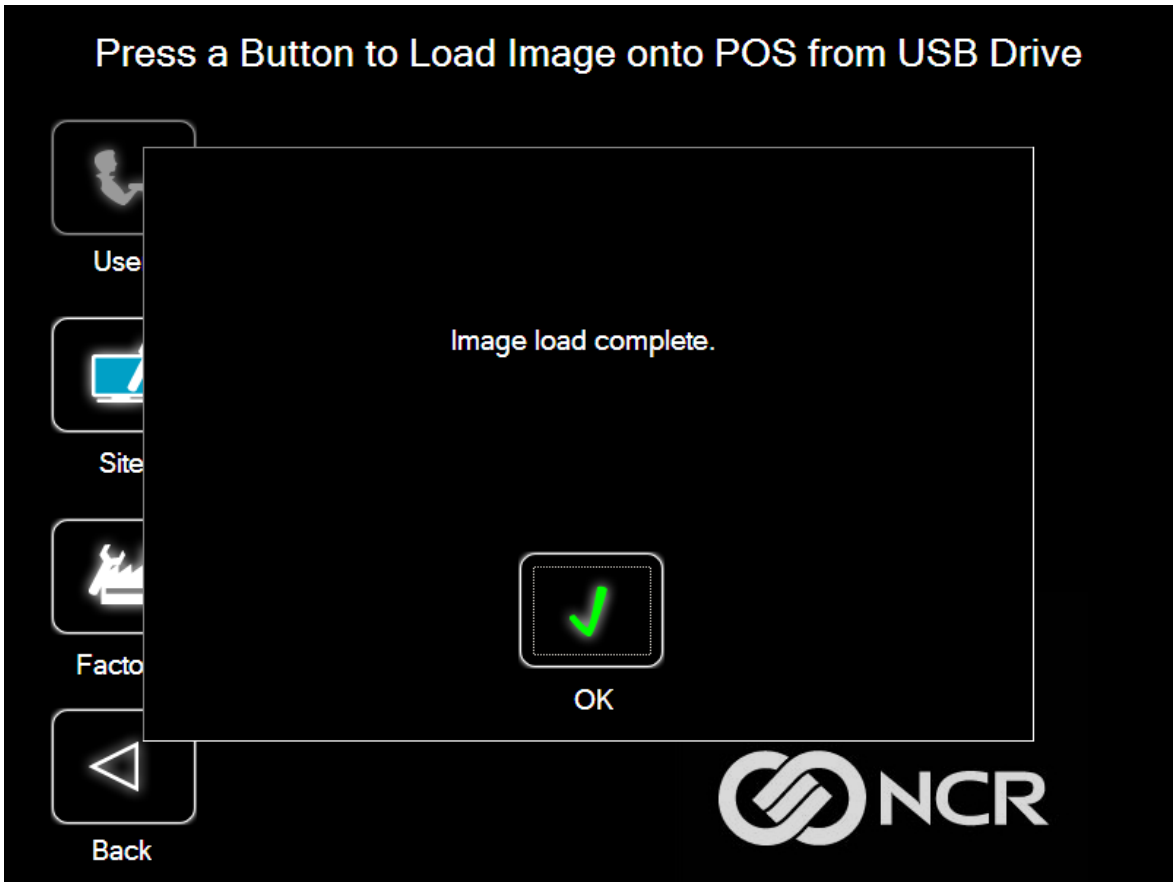


A progress bar is displayed as the image is applied.

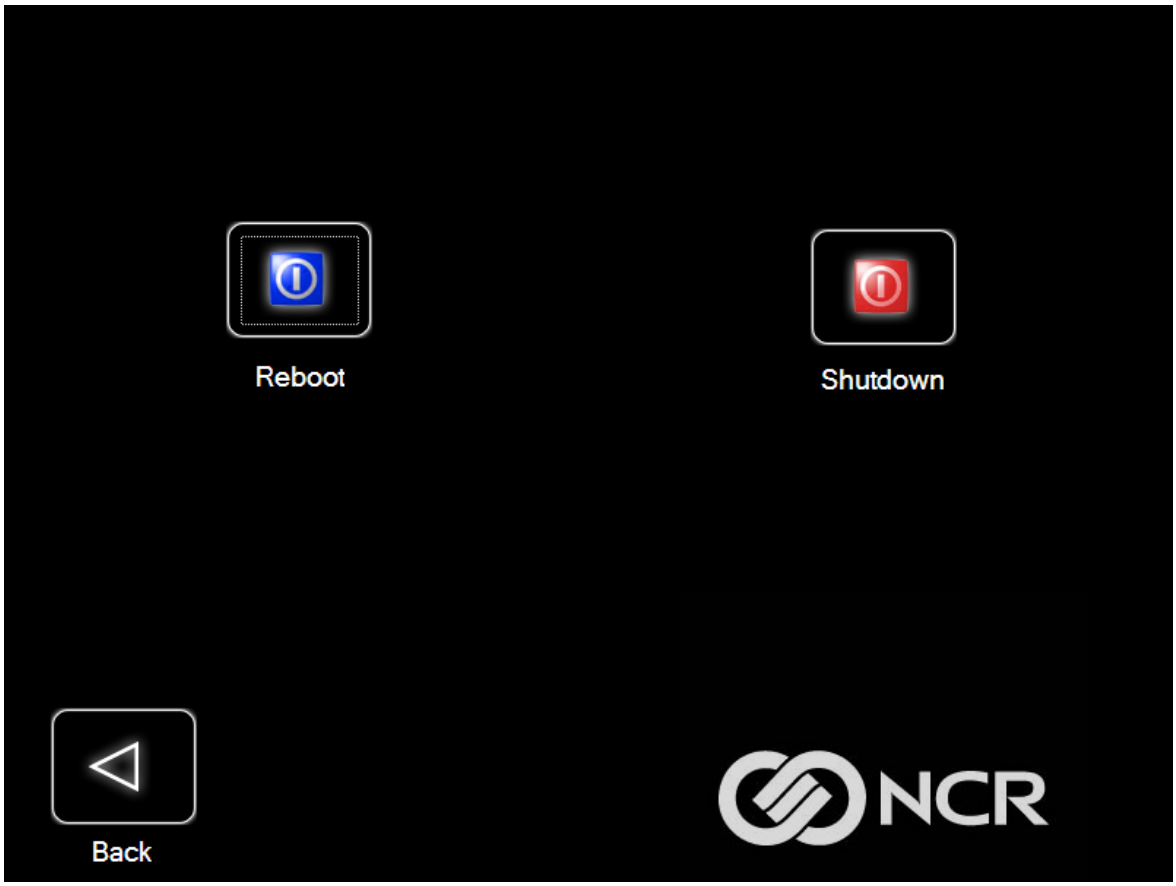


Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

A message is displayed when the load is complete.



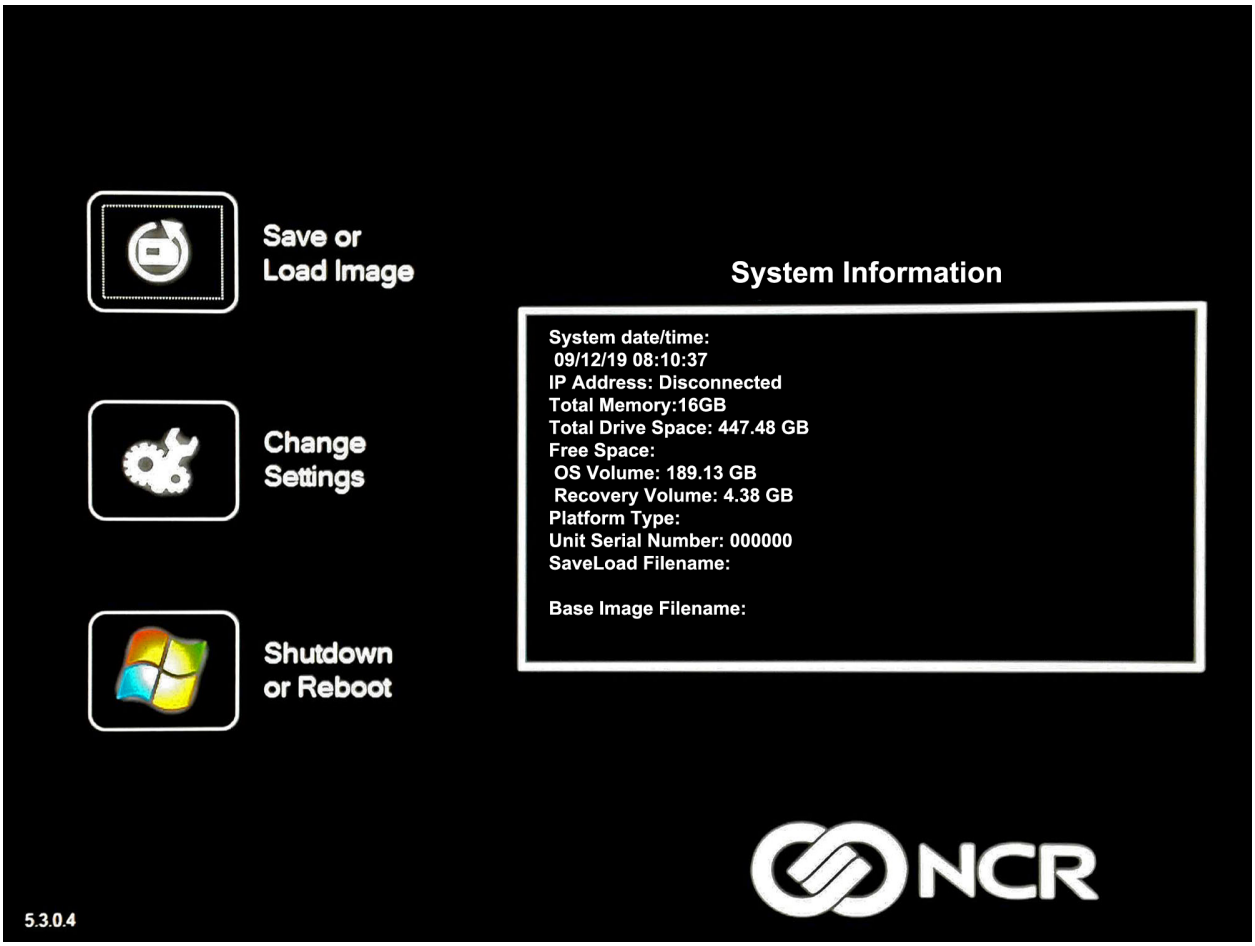
5. **Reboot** the POS.



Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

Change Settings

On the *Main Screen*, select **Change Settings**.



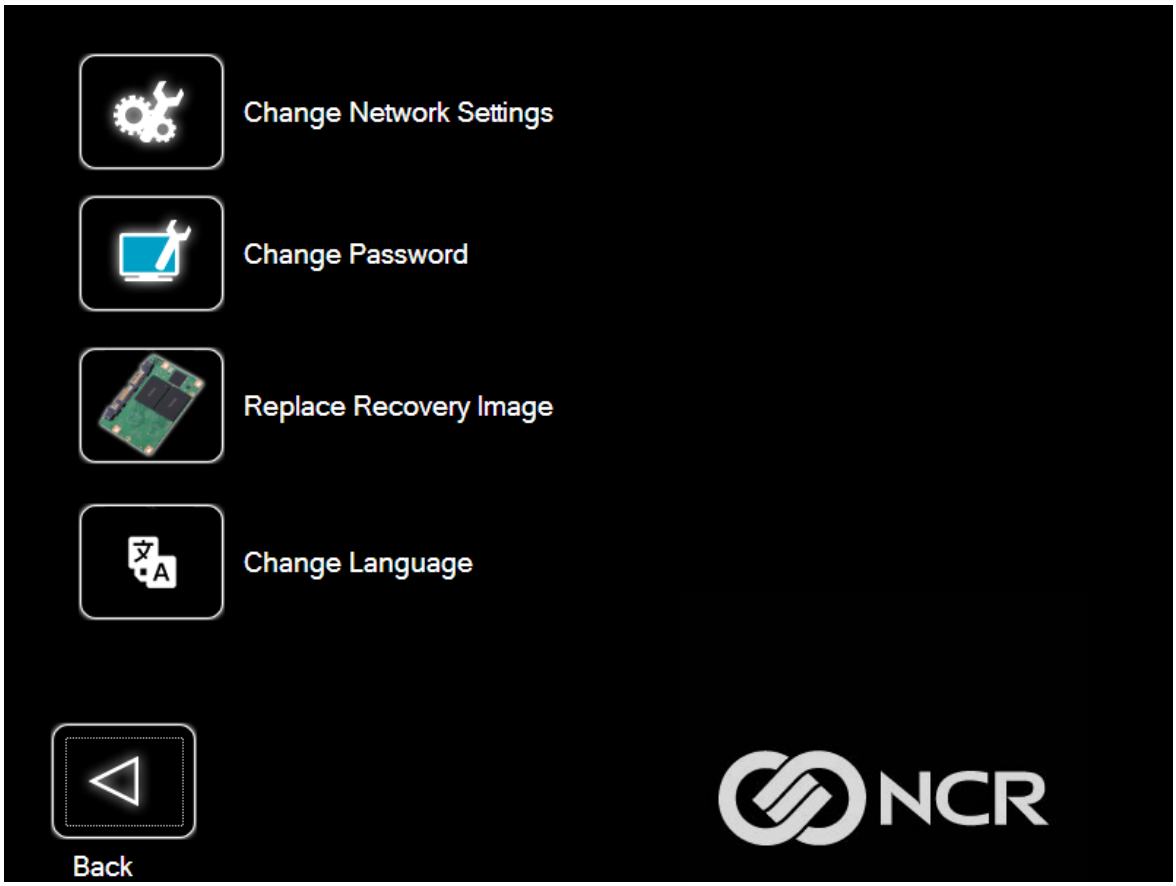
There are four functions available on the *Change Settings* screen:

- Change Network Settings
- Change Password
- Replace Recovery Image
- Change Language

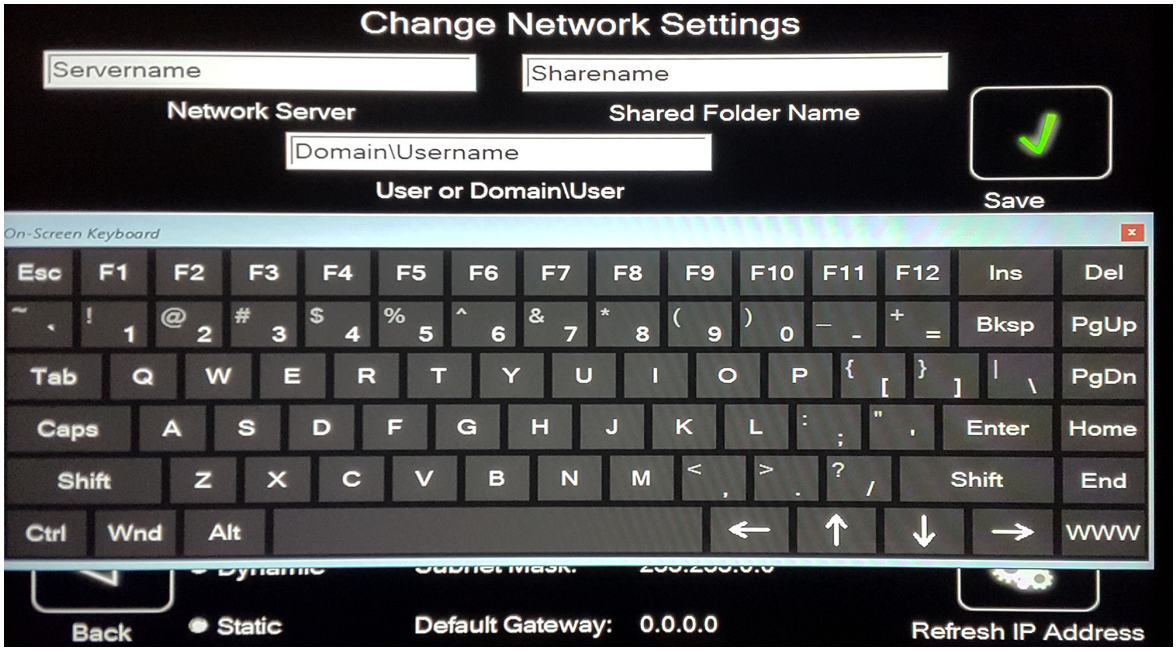
Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

Change Network Settings

1. On the *Change Settings Screen*, select **Change Network Settings**.

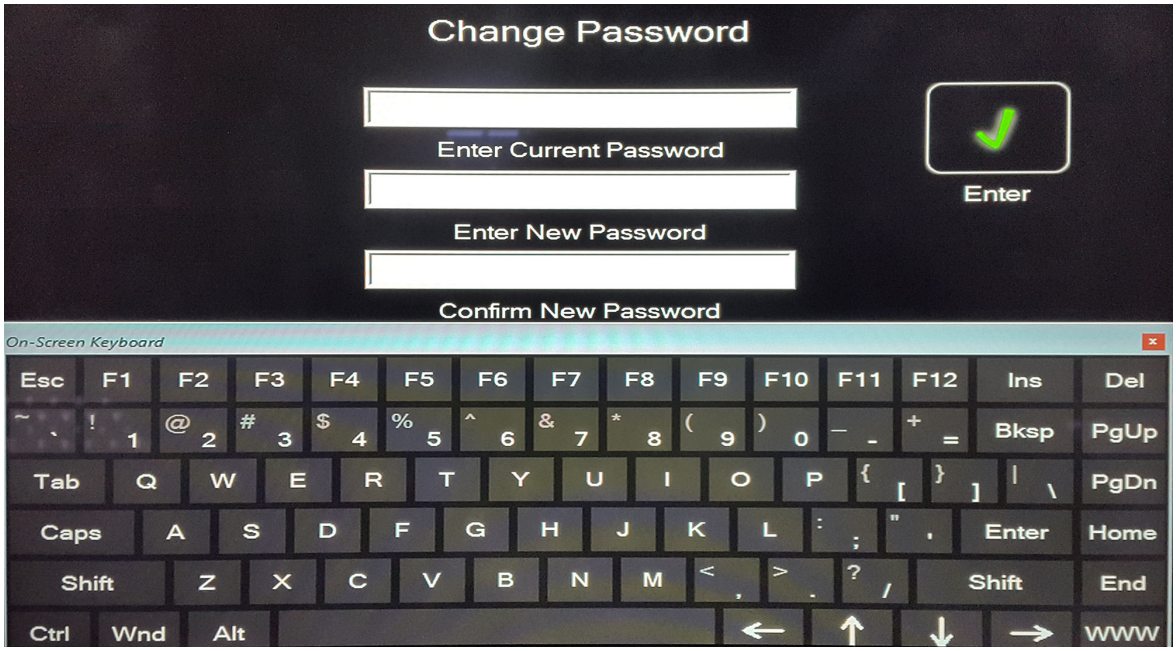


2. Enter the network configuration settings and then select **Save**.

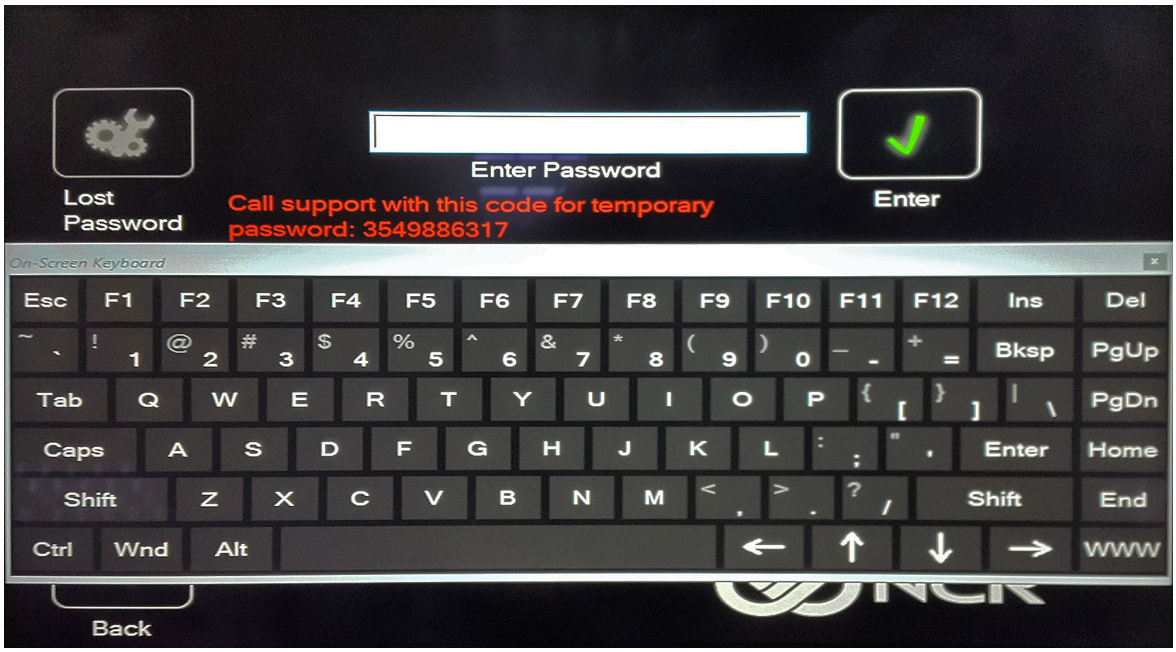


Change Password

1. On the *Change Settings Screen*, select **Change Password**.
2. Enter the current password and the new password, and then select **Enter**.



If you have forgotten or lost the password, select **Lost Password**. A unique code is generated that you can provide to NCR Voyix Support to receive a new temporary password.

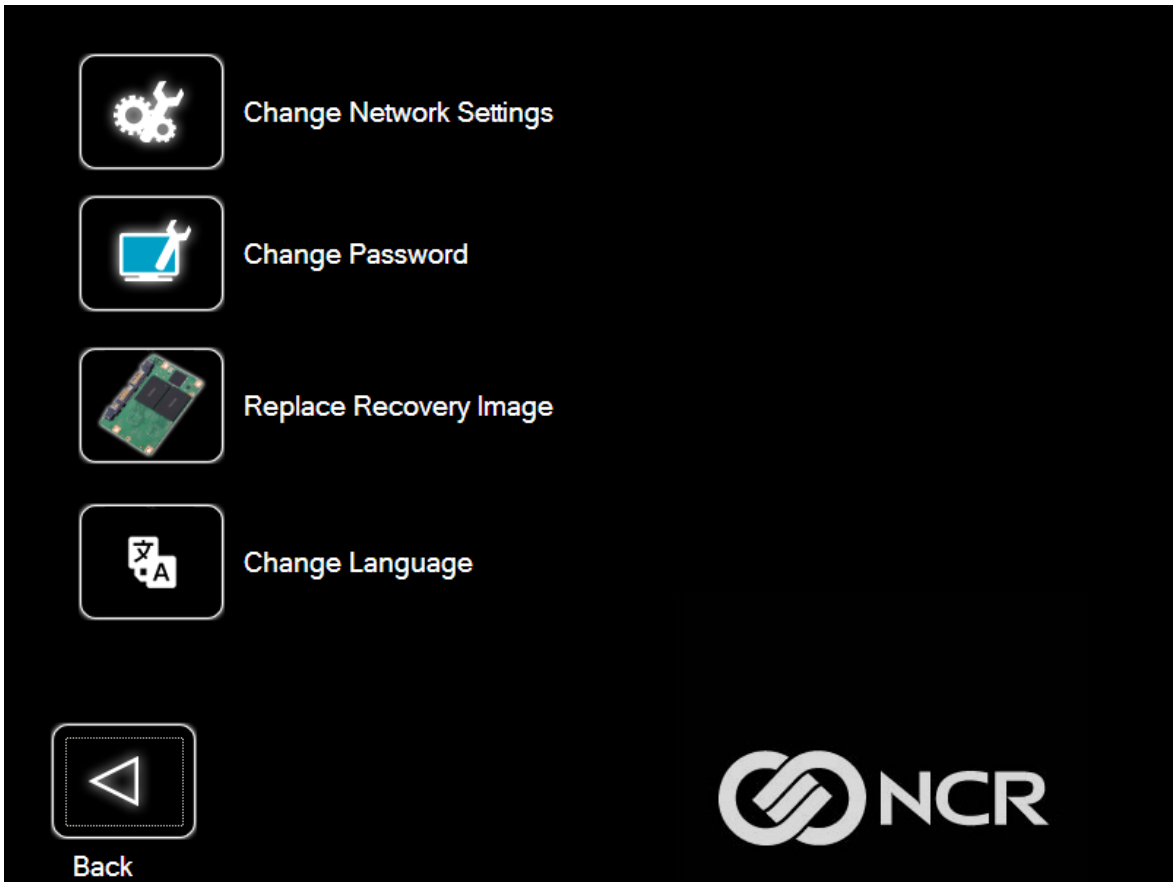


Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

Replace Recovery Image

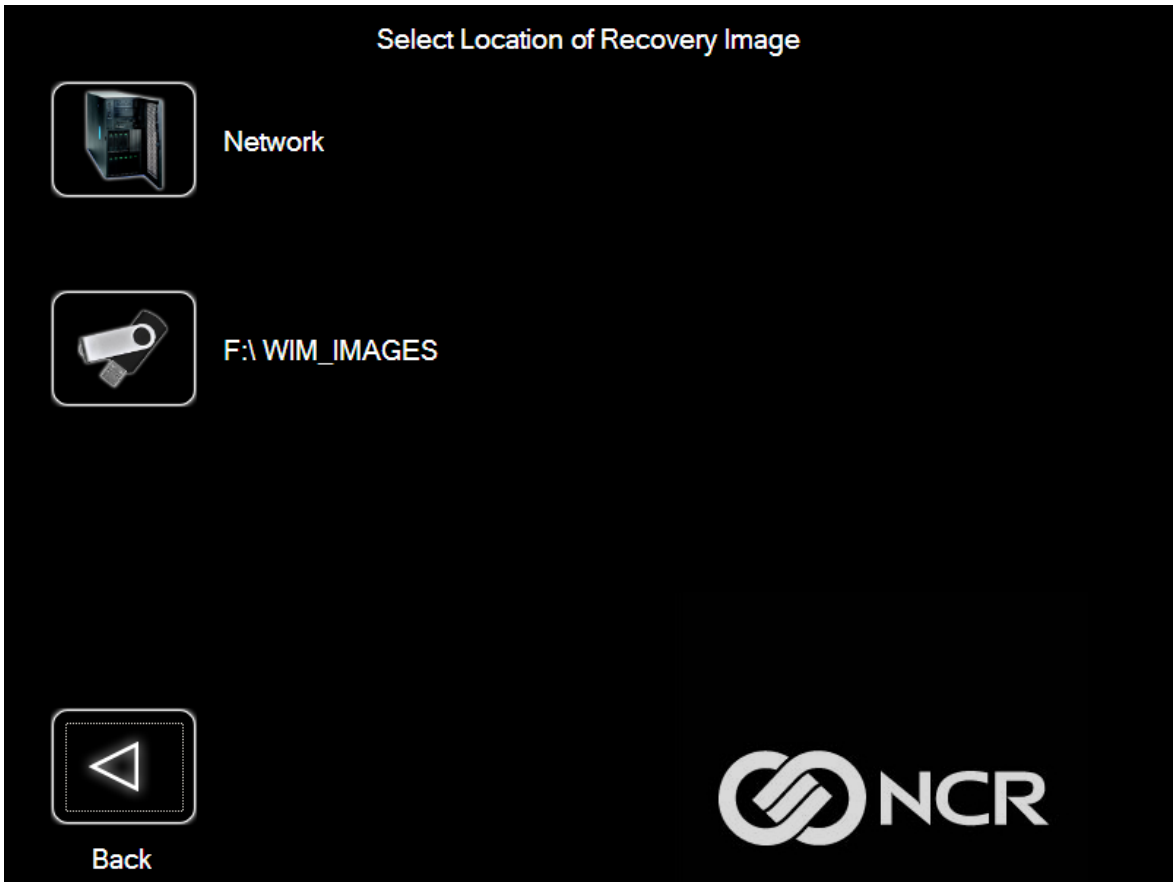
This feature is used to update the NCR Image Recovery Tool and the environment that it runs in.

1. On the *Change Settings Screen*, select **Replace Recovery Image**.



Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

2. Select the source of the *Recovery Image*.

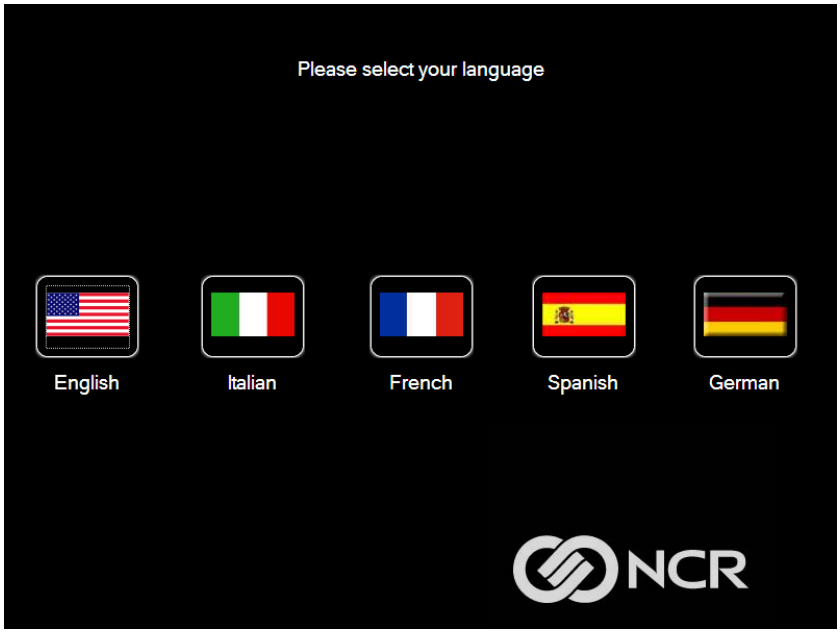


3. Complete the image replacement in the same manner as with the POS *Site/User* image restore procedures.

Change Language

1. On the *Change Settings Screen*, select **Change Language**.

2. Select the language of choice.



Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

Creating a Disk Image

This terminal has an Image Recovery function that permits end users to quickly restore a disk backup from a hidden partition on the NCR Voyix system storage. To utilize this valuable feature, the image must be created using the NCR Imaging Suite. The NCR Imaging Suite is available from NCR Voyix at:

http://www5.ncr.com/support/support_drivers_patches_radiant.asp?Class=Hospitality/GenDrivers_display

From this site, download the following:

- *ImagingSuite_5.3.0.3.zip* (or later) – The Imaging Suite package consists of three primary parts:
    - A server application for local area network imaging
    - The NCR Image Recovery Tool, which is a client application that runs on the target or source machine where images will be applied to or captured from
    - A customized version of Windows PE 3.1 boot OS environment from which the client application will be run
- *Imaging Suite User Guide* – This document provides a general overview of the Imaging Suite package, how to configure the system to run it, and how to use the applications to capture and apply system images.

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

Power Management

The BIOS supports the Advanced Configuration and Power Management Interface (ACPI) 3.0 specification. A key feature of ACPI is that the operating system, not the BIOS, configures and implements power management. The CX3 terminal supports the Global system power states defined by ACPI.

Computer States

G3 Mechanical Off

A computer state that is entered and left by mechanical means.

> **Example**
> Turning off the system's power through the movement of a large red switch.

Various government agencies and countries require this operating mode. It is implied by the entry of this off state through mechanical means that no electrical current is running through the circuitry and that it can be worked on without damaging the hardware or endangering service personnel. The OS must be restarted to return to the Working state. No hardware context is retained. Except for the real-time clock, power consumption is zero.

> **Note**
> Current leakage is 2.5uA at G3.

G2/S5 Soft Off

A computer state where the computer consumes a minimal amount of power. No user mode or system mode code is run. This state requires a large latency in order to return to the Working state. The system's context will not be preserved by the hardware. The system must be restarted to return to the Working state. It is not safe to disassemble the machine in this state.

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

G1 Sleeping

A computer state where the computer consumes a small amount of power, user mode threads are not being executed, and the system appears to be off (from an end user perspective, the display is off, and so on). Latency for returning to the Working state varies on the wake environment selected prior to entry of this state (for example, whether the system should answer phone calls). Work can be resumed without rebooting the OS because large elements of system context are saved by the hardware and the rest by system software. It is not safe to disassemble the machine in this state.

G0 Working

A computer state where the system dispatches user mode (application) threads and they execute. In this state, peripheral devices (peripherals) are having their power state changed dynamically. The user can select, through some UI, various performance/power characteristics of the system to have the software optimize performance or battery life. The system responds to external events in real time. It is not safe to disassemble the machine in this state.

ACPI Sleep States (S0 - S5)

Under the G1 sleeping state ACPI defines levels of system sleep state support. The CX3 supports the following sleeping states:

- **S0**: Normal Powered-On state
- **S1 (Standby)**: The S1 sleeping state is a low wake latency sleeping state. In this state, no system context is lost (CPU or chip set) and hardware maintains all system contexts.

  > **Note**
  > The CX3 does not support S1 state. Turning off the backlight and hard drives provides the equivalent power savings (due to Intel's processor C-states feature) at nearly zero latency.

- **S2**: Not supported

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

- **S3 (Suspend to Ram)**: The S3 sleeping state is a low wake latency sleeping state. This state is similar to the S1 sleeping state except that the CPU and system cache context is lost (the OS is responsible for maintaining the caches and CPU context). Control starts from the processor's reset vector after the wake event. In NCR systems, during S3, power is only provided to the USB 3.0 ports.

  > **Note**
  > When the terminal resumes from an S3 state, all the USB devices re-enumerate. This causes speaker tones as if they were disconnected and then reconnected. This does not present a problem and the USB devices will continue to operate correctly.

  Requirements for S3 support:

  - O/S must be built on a system with S3 enabled in the BIOS
  - Some peripherals may not be S3 capable, which can prevent the system from entering S3 state.

- **S4 (Suspend to Disk)**: The S4 state is the lowest power, longest wake latency sleeping state supported by ACPI. In order to reduce power to a minimum, it is assumed that the hardware platform has powered off all devices. Platform context is maintained.

  Requirements for S4 support:

  - O/S must be built on a system with S3 enabled in the BIOS
  - Some peripherals may not be S4 capable, which can prevent the system from entering S4 state.

  Reference the *ACPI Specification* for details.

Peripherals*:* ACPI defines power states for peripherals which are separate from the system power state. The device power states range from D0 (fully-on) to D3 (off). It is the responsibility of the driver developer for each peripheral to define and support the available power states.

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

Power State	S0 Working	S0 Idle, Backlight Off, HDD Off	S3 Suspend to RAM	S4 Hibernate	S5 Soft Off
Supported: Y/N	Y	Y	Y	Y	Y
Description	Fully Functional	Video Backlight Off / HDD Off	Video Backlight Off / HDD Off, Cache Flush, Memory in Slow Refresh, CPU Halted	Video Backlight Off / HDD Off, Cache Flush, Memory Image Written to HDD, CPU Halted	OFF Some devices remain powered by standby voltage (LAN, ME-AMT, USB) to allow wake-up
Power Supply Status	On	On	Powered Down*	Powered Down*	Powered Down*
Power Consumption					
Celeron 4205U	24.11W	14.34W	1.91W	1.61W	0.96W
Core i3 8145UE	31.73W	17.46W	1.43W	1.19W	1.19W
Wake Options					
Power Switch	N/A	Y	Y	Y	Y
Touch	N/A	Y	Y	N	N
USB Keyboard	N/A	Y	Y	N	N
USB Mouse	N/A	Y	Y	N	N
LAN (magic packet)	N/A	Y	Y	Y	Y
RTC Alarm	N/A	Y	Y	Y	Y
Serial Port (RI)	N/A	Y	N	N	N

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

Power State	S0 Working	S0 Idle, Backlight Off, HDD Off	S3 Suspend to RAM	S4 Hibernate	S5 Soft Off

Note

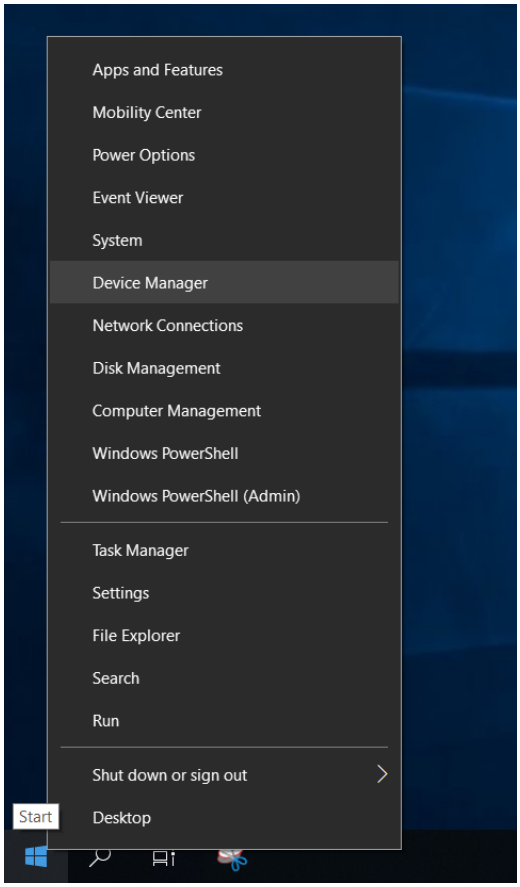
Power consumption based on the following configuration: 8GB RAM, 120 GB SSD

*Maintains small voltage to support wake circuits

Enabling Wake on LAN

In order for Wake on LAN to function, the Network driver must be enabled (factory default).

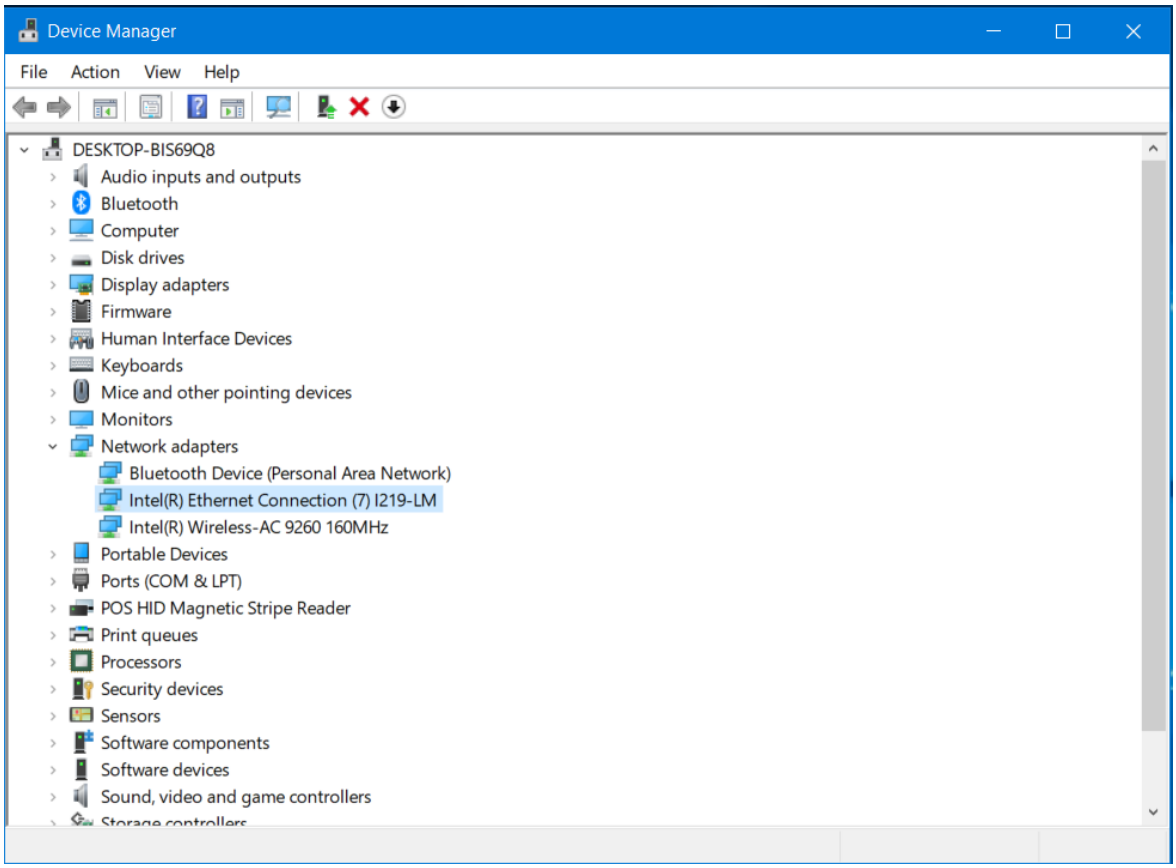
1. Right-click on **Start**, then select **Device Manager**.



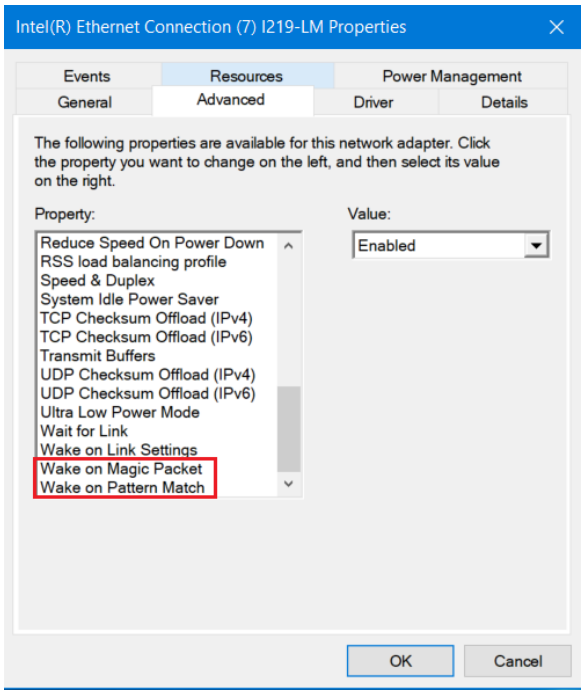
2. Select **Network adapters**.

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

3. Right-click **Intel(R) Ethernet Connection I219-LM >> Properties**.

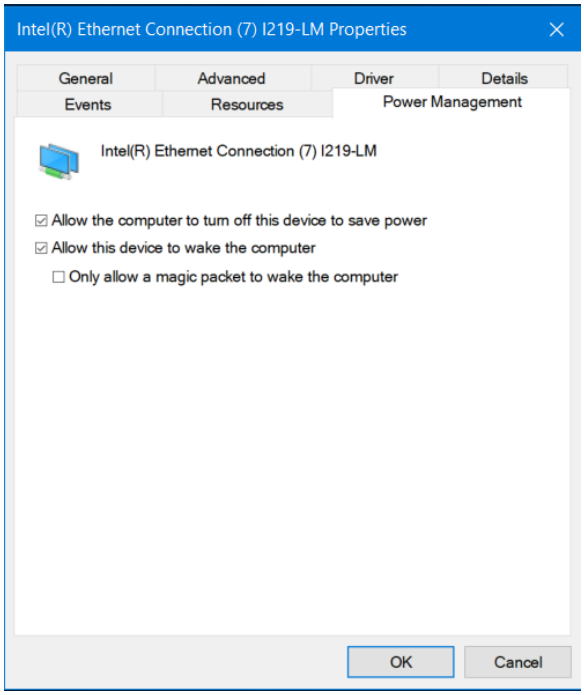


4. Under the *Advanced* tab, *Wake on Magic Packet* and *Wake on Pattern Match* should be enabled. Select **OK** after making the changes.



Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

5. Under the *Power Management* tab, *Allow this device to wake the computer* option box should be checked. Select **OK** after making the changes.



BIOS Setup

Entering Setup

1. Connect an alphanumeric USB keyboard to the terminal.
2. Apply power to the terminal.
3. When you see the NCR logo displayed, press **Del** or **F2**.

Selecting Menu Options

The following keyboard controls are used to select the various menu options and to make changes to their values.

Keyboard Control	Action
Arrow Keys	Select (highlight) options and menu screens
Enter	Select a submenu
+ / -	Change field values
F1	View help information on the possible selections for the highlighted item

To save the changes, move the cursor to the *Save and Exit Menu*, select **Save Changes & Reset**, and press **Enter**.

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

Restoring Factory Settings

To reset all values to their default settings, follow these steps:

1. Press **F3**.
2. When the confirmation message is displayed, press **Enter**. The terminal automatically loads the BIOS default values.
3. Go to the *Save and Exit Menu*.
4. Select **Save Changes & Reset**.
5. Press **Enter**.

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

BIOS Updating Procedure

Introduction

The BIOS is located in the Serial Peripheral Interface (SPI) chip on the processor board. This chapter discusses procedures on how to update the terminal SPI and/or BIOS. The update software is distributed via the NCR Voyix Website:
http://www5.ncr.com/support/support_drivers_patches.asp

The BIOS update can be performed using the following methods:

- Bootable USB Memory Device
- Windows Flash Executable

Prerequisites

The following are required to perform a SPI/BIOS update:

- USB Alphanumeric Keyboard
- BIOS Software – Download from the NCR Voyix Website: http://www5.ncr.com/support/support_drivers_patches.asp

USB Flash Key update prerequisites

- USB Flash Key with sufficient space for the update files.
- USB port on the terminal to be updated.

> **Note**
> Enable the USB Port in the BIOS (via *BIOS Setup*).

Windows Flash Executable update prerequisites

- There should be no other programs running while the BIOS/SPI is updating.
- The Windows Flash Executable is designed to run from an Administrator account.

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

SPI/BIOS Updating Procedures

Using the Bootable USB Flash Key

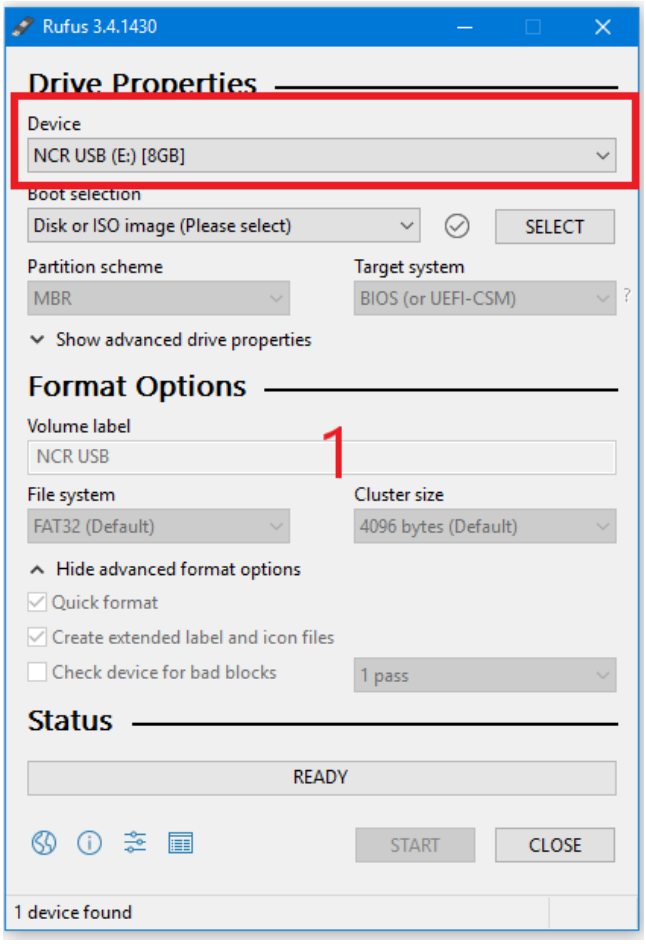
1. Create a USB Flash Drive by installing the BIOS update package to this USB key.

   > **Note**
   >
   > The USB flash drive disk size must be more than 512MB.

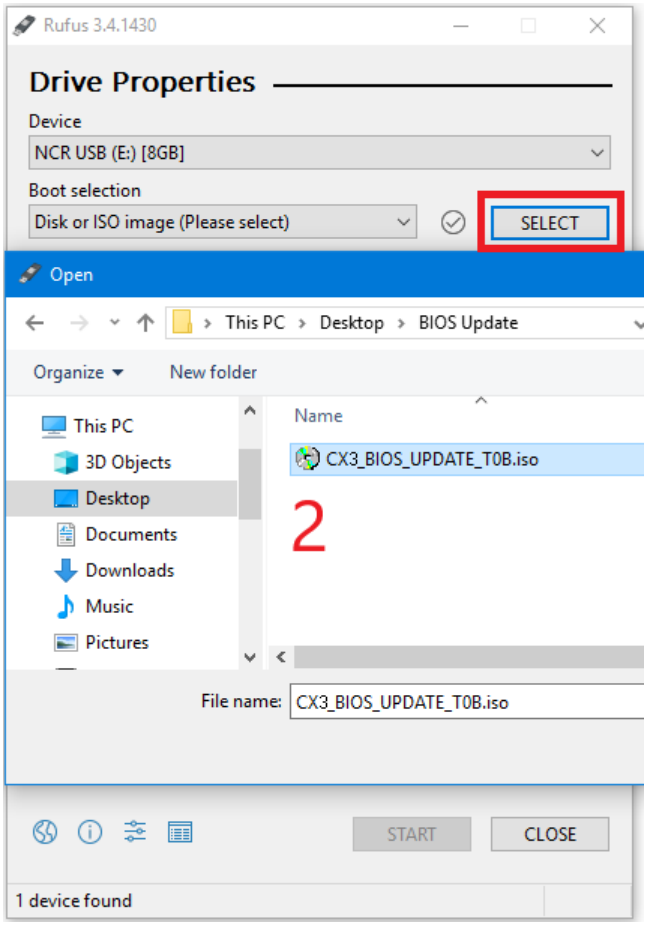
   Windows PC

   Download the Rufus Tool from the Rufus Website: https://rufus.ie/ and use the tool to deploy image into USB key.

   a. Select the device from the Device drop-down list.

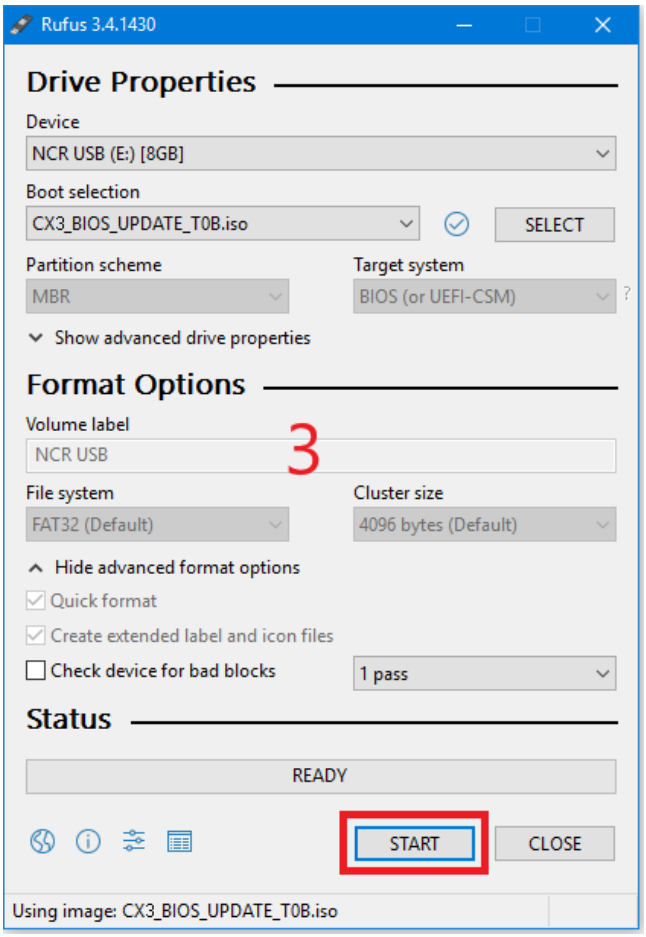


b. Press **Select** to choose the image from the Boot Selection drop-down list.



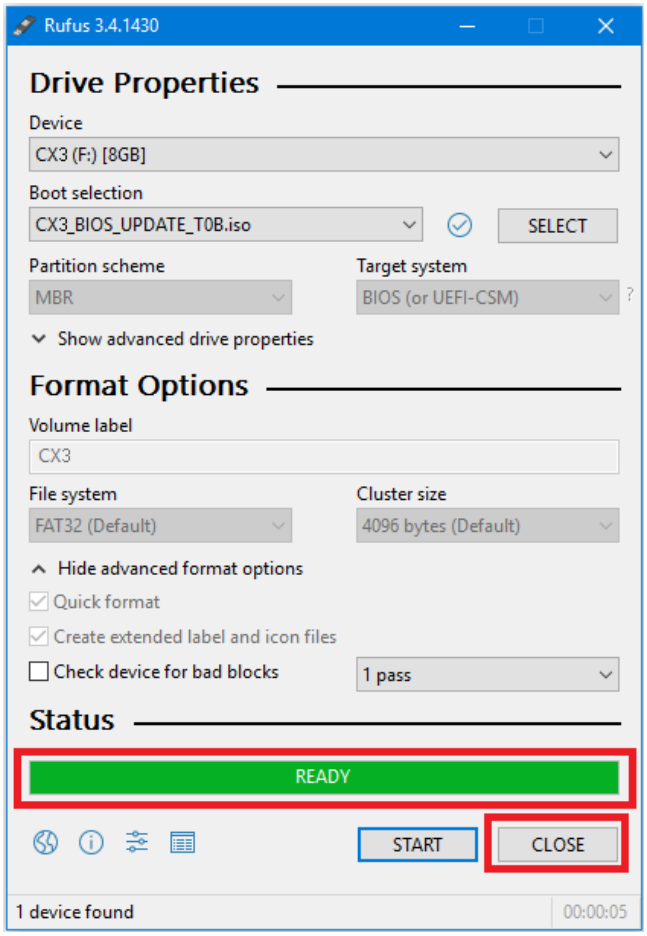
Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

c. Press **Start** to load the image.



Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

d. When the load is complete, select **Close**.



2. Insert the CX3 USB Flash Drive into the USB Port.
3. Press **F8** during startup to bring up the Boot Menu.
4. Select the USB device to boot the CX3 BIOS flash key. An option menu will load.
5. Select option **1** to update BIOS with DMI preserved.

Note

After the update has completed and the terminal is rebooted, the terminal may reboot additional times as it powers up. This is normal and expected behavior due to the nature of the features of the BIOS/SPI.

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

Using the Windows Flash Executable

Note

Close all running programs prior to updating the BIOS.

To run the executable, right–click on the file and select **Run as administrator**. The terminal will reboot after the flash process has completed.

Caution

The reboot is important to ensure the BIOS initializes properly. Do not interrupt the reboot process.

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

Initial Terminal Imaging

Introduction

Factory default HDD/SSD images for the CX3 are distributed on bootable auto-imaging USB Flash Drive media. The following procedures describe how to apply/restore an image on the terminal.

Warning

Using this procedure will replace any previously stored OS images created using the *Disk Image Backup and Recovery Tool*.

Note

A USB Keyboard is required to perform this operation.

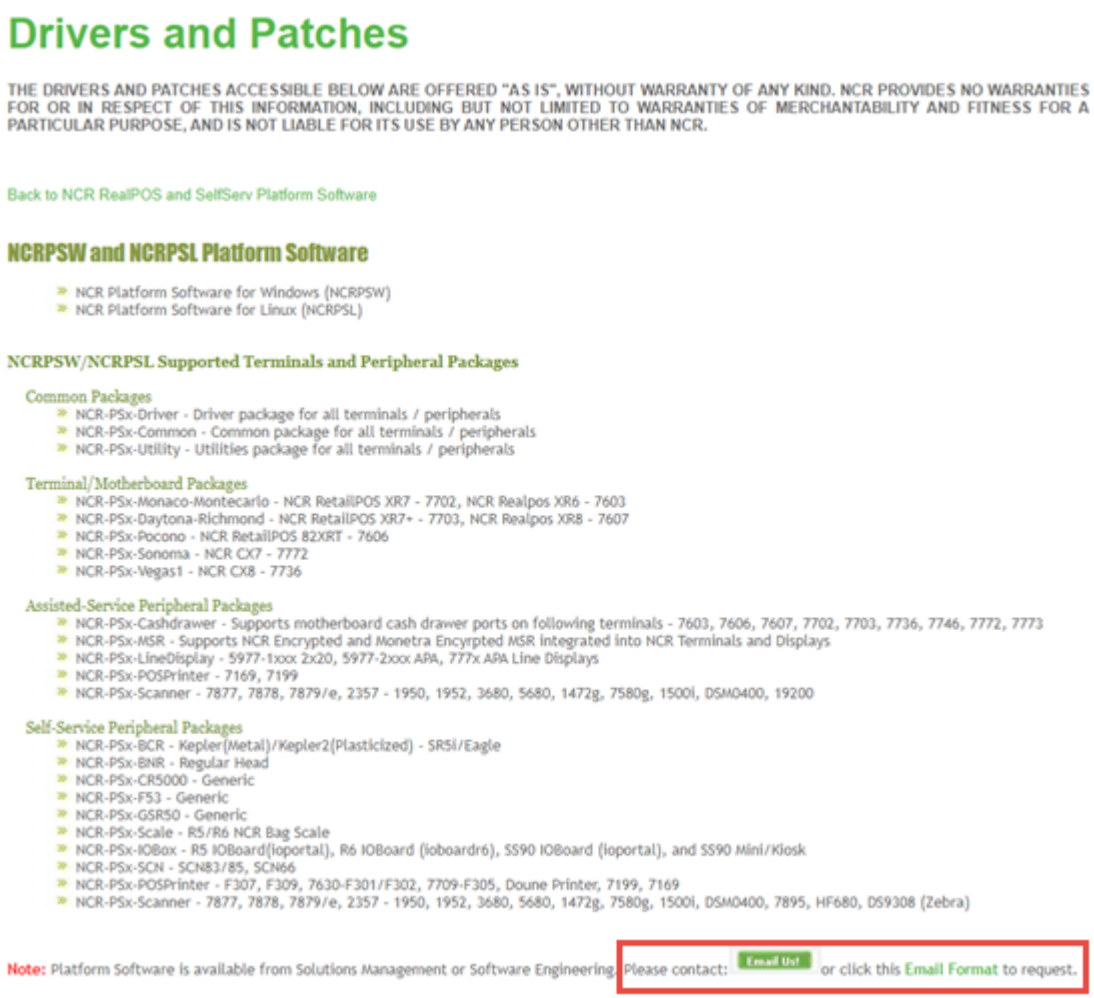
Imaging Procedure

1. Connect the USB flash drive to the target terminal that you wish to image.
2. Connect a USB keyboard to the terminal.
3. Power on the terminal and boot from the USB Flash Drive. This can be done by pressing **F8** during the boot and choosing the USB option (**NCR**), or by entering *BIOS Setup* and changing the boot order. The system boots in the Windows PE OS environment.
4. Press **Y** on the keyboard at the confirmation prompt to re-image the terminal.
5. When the imaging process is complete, enter **Exit** on the keyboard to reboot the system.
6. After the reboot, remove the USB Flash Drive and disconnect the keyboard.

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

Required Packages

1. Go to the NCR Drivers and Patches page : https://www5.ncr.com//support/support_drivers_patches.asp?Class=External/NCRPSL\NCRPSW\Platform\display
2. Using the email link on the bottom of the Drivers and Patches page, request for the following packages:
    - NCR-PSx-Driver – driver package for all terminals/peripherals
    - NCR-PSx-Common – common package for all terminals/peripherals
    - NCR-PSx-Utility – utility package for all terminals/peripherals
    - NCR-PSx-LineDisplay – 5977-1xxx 2x20, 5977-2xxx APA, 777x APA Line Displays



Drivers and Patches

THE DRIVERS AND PATCHES ACCESSIBLE BELOW ARE OFFERED "AS IS", WITHOUT WARRANTY OF ANY KIND. NCR PROVIDES NO WARRANTIES FOR OR IN RESPECT OF THIS INFORMATION, INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND IS NOT LIABLE FOR ITS USE BY ANY PERSON OTHER THAN NCR.

Back to NCR RealPOS and SelfServ Platform Software

NCRPSW and NCRPSL Platform Software

- NCR Platform Software for Windows (NCRPSW)
- NCR Platform Software for Linux (NCRPSL)

NCRPSW/NCRPSL Supported Terminals and Peripheral Packages

Common Packages
- NCR-PSx-Driver - Driver package for all terminals / peripherals
- NCR-PSx-Common - Common package for all terminals / peripherals
- NCR-PSx-Utility - Utilities package for all terminals / peripherals

Terminal/Motherboard Packages
- NCR-PSx-Monaco-Montecarlo - NCR RetailPOS XR7 - 7702, NCR Realpos XR6 - 7603
- NCR-PSx-Daytona-Richmond - NCR RetailPOS XR7+ - 7703, NCR Realpos XR8 - 7607
- NCR-PSx-Pocono - NCR RetailPOS 82XRT - 7606
- NCR-PSx-Sonoma - NCR CX7 - 7772
- NCR-PSx-Vegas1 - NCR CX8 - 7736

Assisted-Service Peripheral Packages
- NCR-PSx-Cashdrawer - Supports motherboard cash drawer ports on following terminals - 7603, 7606, 7607, 7702, 7703, 7736, 7746, 7772, 7773
- NCR-PSx-MSR - Supports NCR Encrypted and Monetra Encyrpted MSR integrated into NCR Terminals and Displays
- NCR-PSx-LineDisplay - 5977-1xxx 2x20, 5977-2xxx APA, 777x APA Line Displays
- NCR-PSx-POSPrinter - 7169, 7199
- NCR-PSx-Scanner - 7877, 7878, 7879/e, 2357 - 1950, 1952, 3680, 5680, 1472g, 7580g, 1500i, DSM0400, 19200

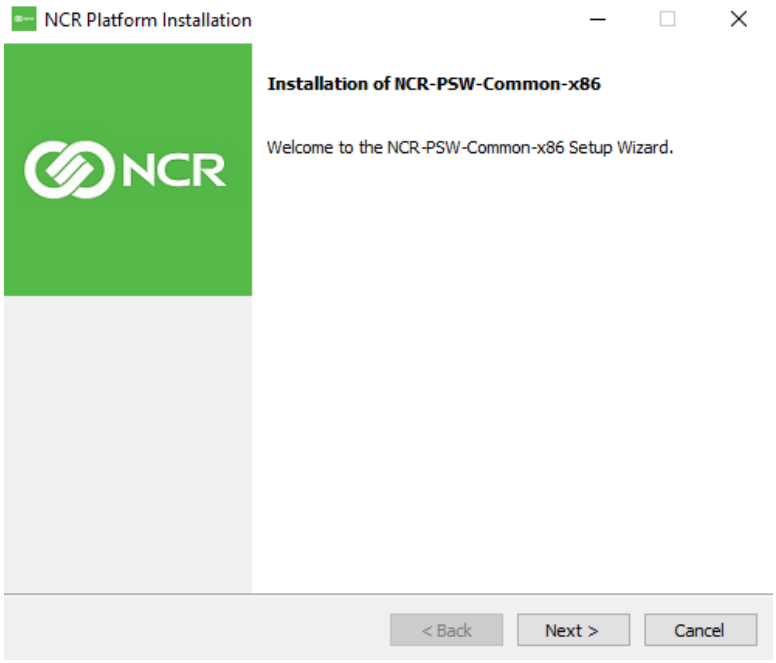
Self-Service Peripheral Packages
- NCR-PSx-BCR - Kepler(Metal)/Kepler2(Plasticized) - SR5i/Eagle
- NCR-PSx-BNR - Regular Head
- NCR-PSx-CR5000 - Generic
- NCR-PSx-F53 - Generic
- NCR-PSx-GSR50 - Generic
- NCR-PSx-Scale - R5/R6 NCR Bag Scale
- NCR-PSx-IOBox - R5 IOBoard(ioportal), R6 IOBoard (ioboardr6), SS90 IOBoard (ioportal), and SS90 Mini/Kiosk
- NCR-PSx-SCN - SCN83/85, SCN66
- NCR-PSx-POSPrinter - F307, F309, 7630-F301/F302, 7709-F305, Doune Printer, 7199, 7169
- NCR-PSx-Scanner - 7877, 7878, 7879/e, 2357 - 1950, 1952, 3680, 5680, 1472g, 7580g, 1500i, DSM0400, 7895, HF680, DS9308 (Zebra)

Note: Platform Software is available from Solutions Management or Software Engineering. Please contact: Email Us! or click this Email Format to request.

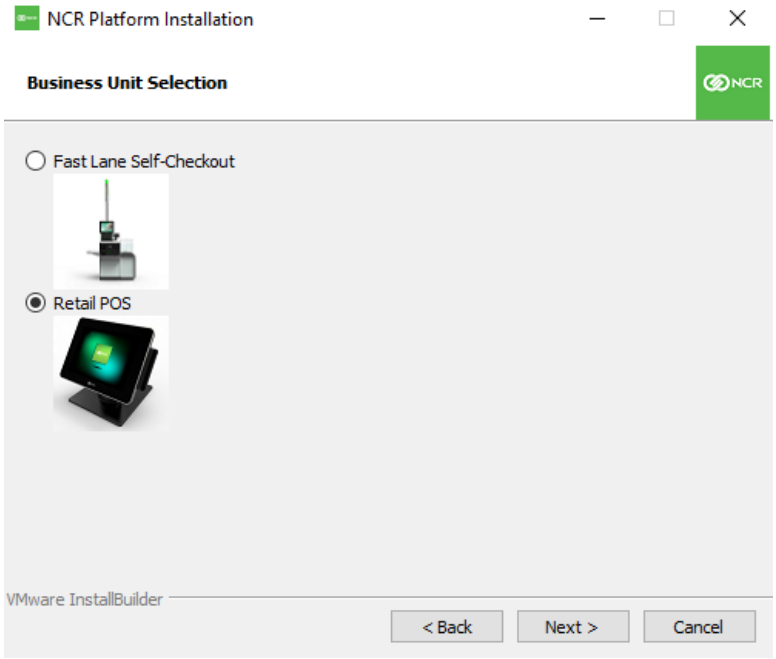
Installing the NCR-PSx-Common

To install the NCR-PSx-Common, follow these steps:

1. Run NCR-PSx-Common. The *NCR-PSW-Common-x86 Setup Wizard* is displayed.

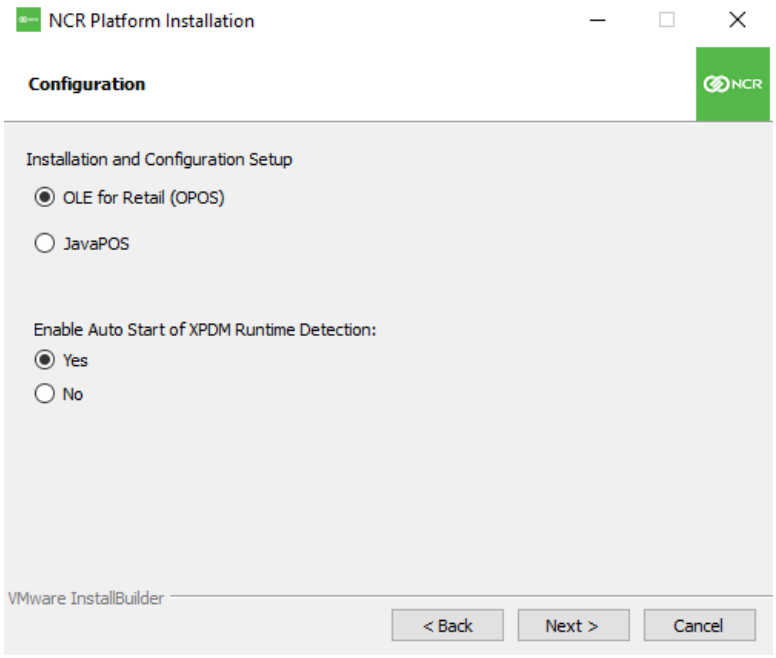


2. Select **Next**. The *Business Unit Selection* window is displayed.



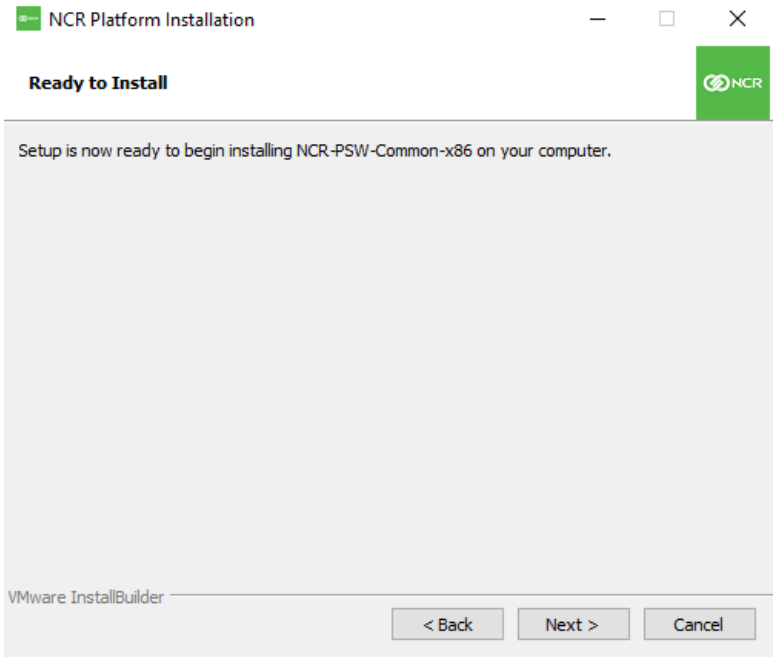
3. Do the following:
    - Select the radio button for Retail POS.
    - Select **Next**.

The *Configuration* window is displayed.



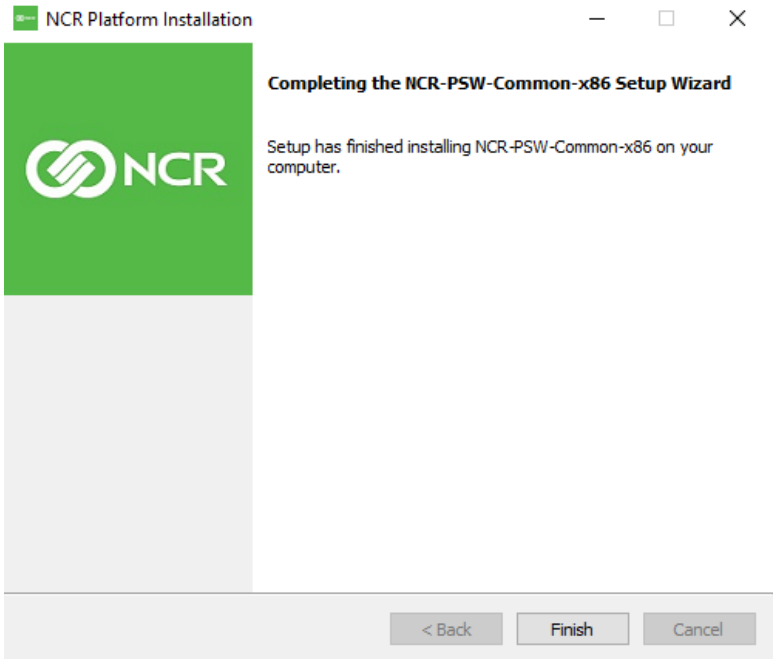
4. Do the following:
    - Select the radio button for OLE for Retail (OPOS).
    - Select the **Yes** radio button.
    - Select **Next**.

    The *Ready to Install* window is displayed.



5. Select **Next**. The installation begins.

6. When the installation is completed, select **Finish**.

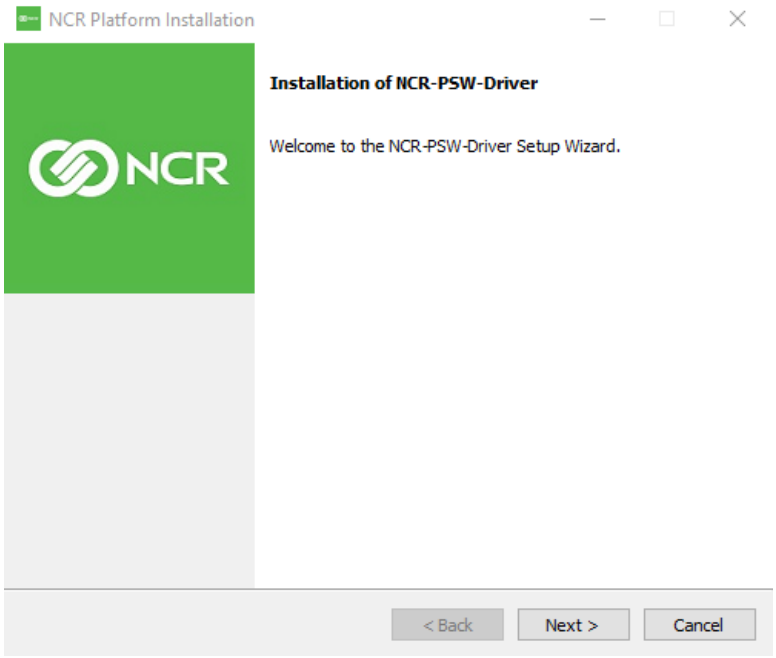


Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

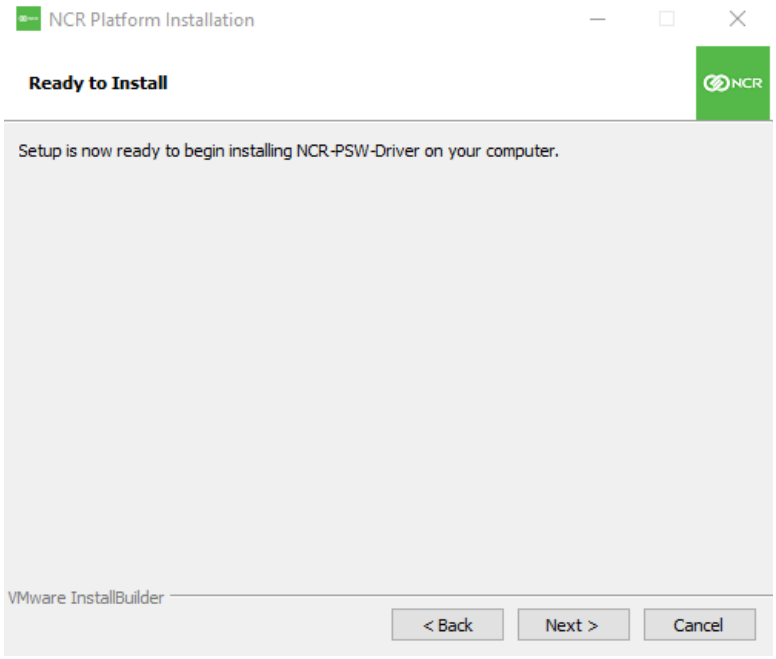
Installing the NCR-PSx-Driver

To install the NCR-PSx-Driver, follow these steps:

1. Run NCR-PSx-Driver. The *NCR-PSW-Driver Setup Wizard* is displayed.



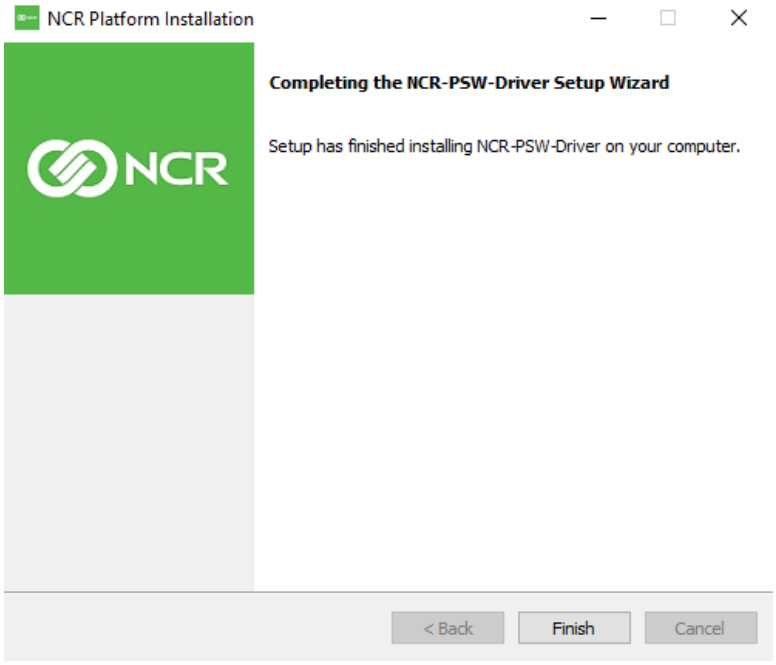
2. Select **Next**. The *Ready to Install* window is displayed.



3. Select **Next**. The installation begins.

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

4. When the installation is completed, select **Finish**.

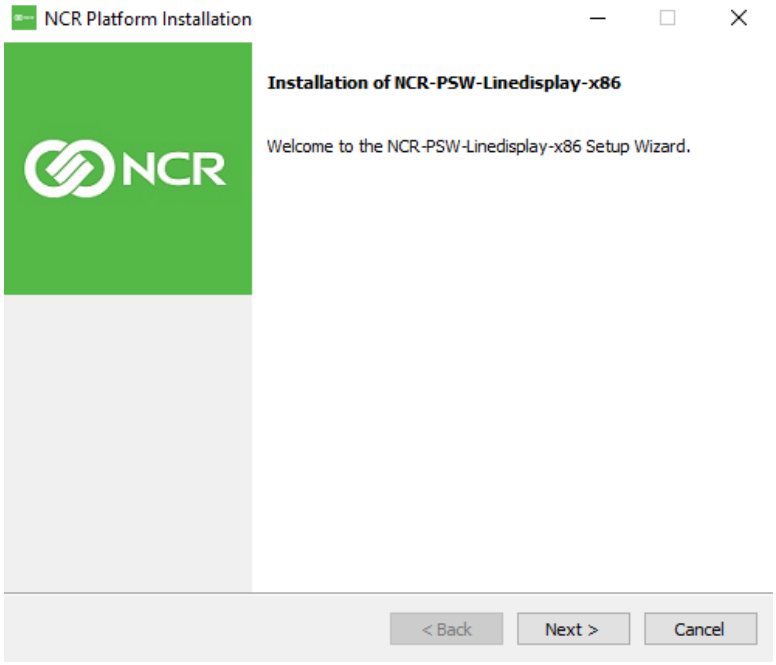


Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

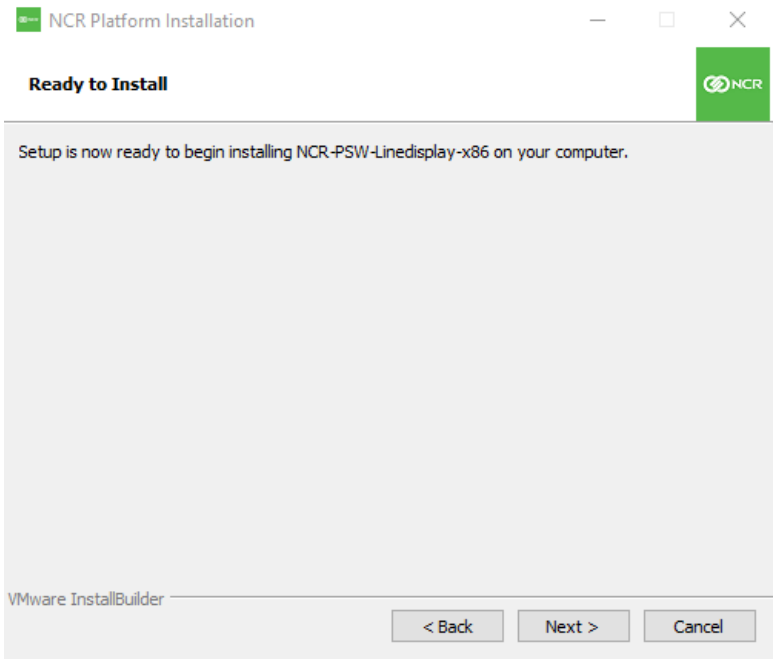
Installing the NCR-PSx-LineDisplay

To install the NCR-PSx-LineDisplay, follow these steps:

1. Run NCR-PSx-LineDisplay. The *NCR-PSW-Linedisplay-x86 Setup Wizard* is displayed.



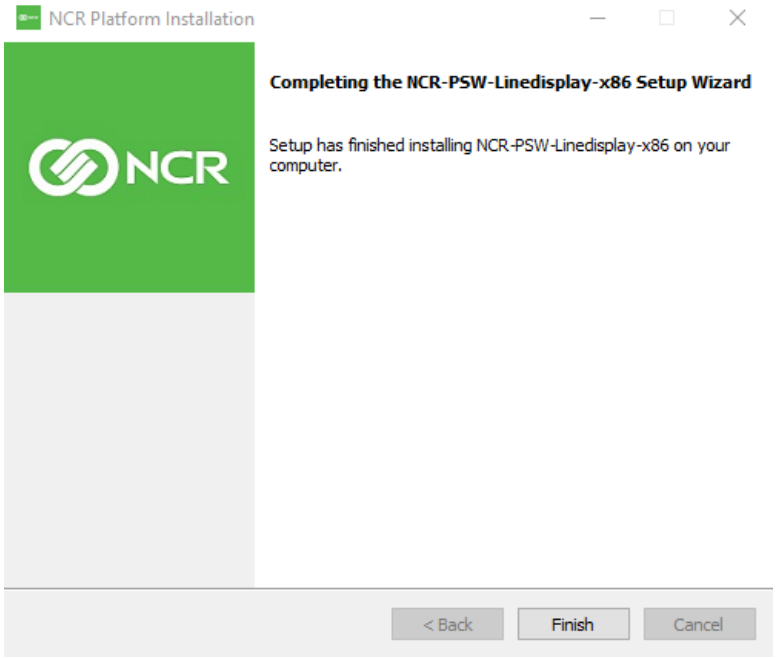
2. Select **Next**. The *Ready to Install* window is displayed.



3. Select **Next**. The installation begins.

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

4. When the installation is completed, select **Finish**.

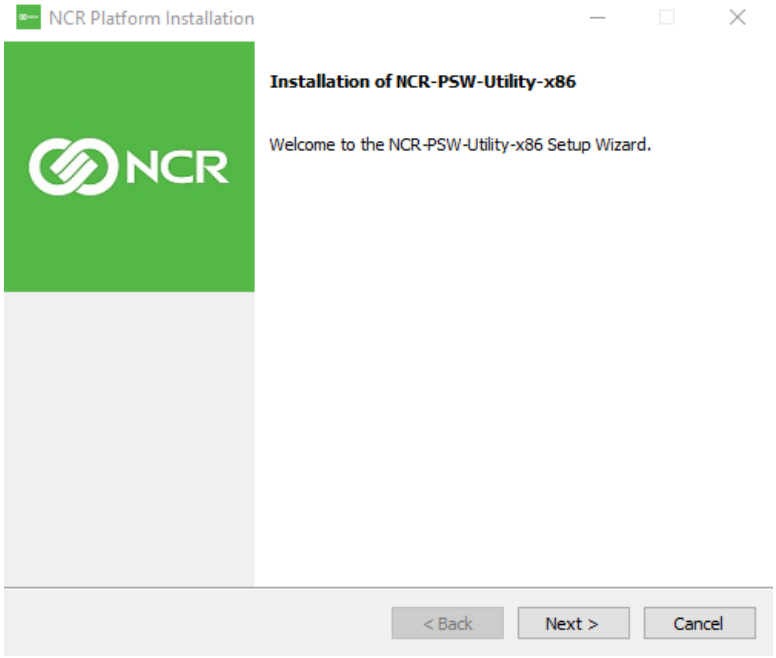


Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

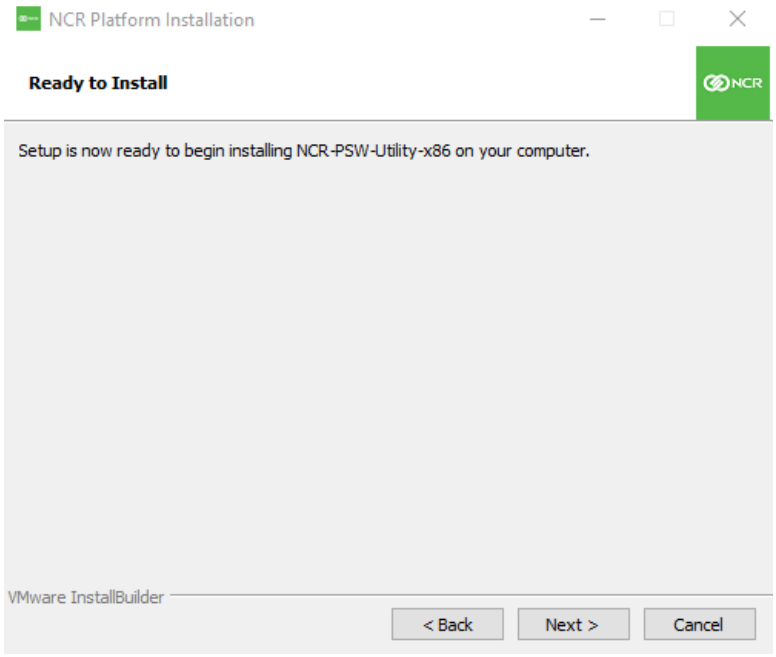
Installing the NCR-PSx-Utility

To install the NCR-PSx-Utility, follow these steps:

1. Run NCR-PSx-Utility. The *NCR-PSW-Utility-x86 Setup Wizard* is displayed.



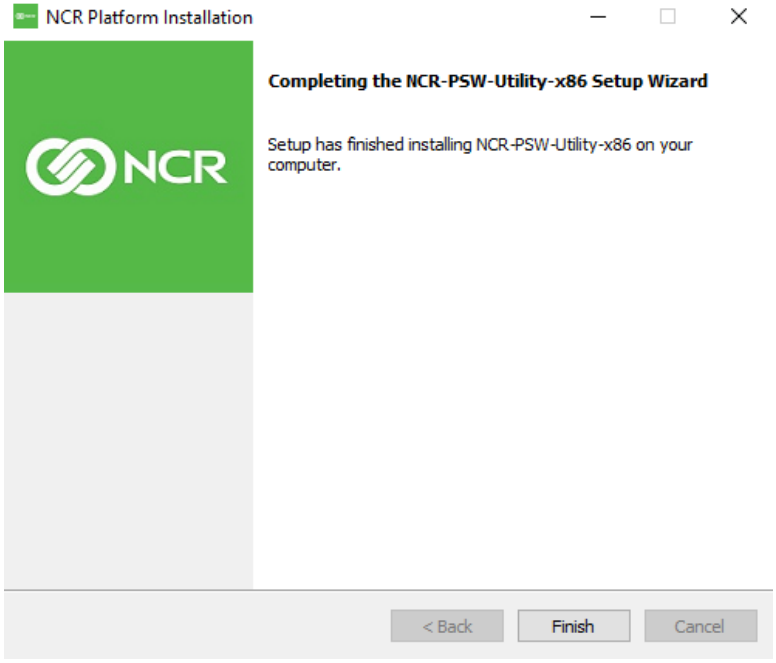
2. Select **Next**. The *Ready to Install* window is displayed.



3. Select **Next**. The installation begins.

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

4. When the installation is completed, select **Finish**.



Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.

CX Display Touch Tool

In CX terminals with multiple touch displays, Windows may have difficulty assigning the touch devices to the correct display. The CX Display Touch Tool is used to assign the touch device to its correct display. The tool sets the Windows display to Extended Desktop and assigns detected touch interfaces to the corresponding display.

The tool supports the following CX terminals:

- NCR CX3 POS (7776)
- NCR CX5 POS (7773)
- NCR CX7 POS (7772)

The tool is located in the following location: **https://www5.ncr.com//support/support_drivers_patches.asp?Class=External/CXDisplay%5CTouch%5CTool%5CDisplay**

Refer to the Readme document for the installation procedure.

Confidential and proprietary information of NCR Voyix.
Use and disclose solely pursuant to company instructions.